

Municipality/Organization: MassDOT - Highway Division

EPA NPDES Permit Number: MA043025

MaDEP Transmittal Number: W-040919

**Annual Report Number
& Reporting Period: No. 9: April 2011-March 2012**

NPDES Phase II Small MS4 General Permit Annual Report

Part I. General Information

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Certification:

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

Signature: 

Printed Name: Frank A. DePaola, P.E.

Title: Highway Administrator – MassDOT, Highway Division

Date: April 26, 2012



Part II. Self-Assessment

MassDOT – Highway Division has completed the required self-assessment and determines that the Municipal Separate Storm Sewer Systems (MS4) continues to be in full compliance with the permit conditions.

This annual report incorporates the combination of MassHighway with the Massachusetts Turnpike Authority properties and a few MA Department of Conservation and Recreation roads (Arlington Road, Casey Highway, Columbia Road, Gallivan Boulevard, McGrath Highway, Middlesex Avenue, Morton Street, and O'Brien Highway) that are operated as the Massachusetts Department of Transportation, Division of Highways (MassDOT) agency¹. Permit Year 8's Annual Report summarized how the Turnpike SWMP's BMP's were covered by existing MassHighway SWMP programs and indicated that each of the Turnpike BMPs was sufficiently addressed by MassDOT programs. Therefore, we are not discussing the Turnpike programs separately in this annual report. The DCR roads are also addressed by the current MassDOT BMPs.

MassDOT, with our consultant's support, has continued to develop the "Impaired Waters Program" to address discharges to impaired waters from the highway stormwater system as part of compliance with the MS4 general permit. MassDOT has expended a significant amount of external and internal resources to implement this aggressive program. MassDOT's program includes two components:

- **Retrofit Initiative:** As part of MassDOT's commitments under BMPs 7U and 7R of the most recent SWMP, MassDOT is implementing an analysis of sites to address stormwater runoff to impaired waters in areas covered by the MS4 permit. The purpose of this initiative is to identify and prioritize the most serious pollution problems where MassDOT has the most impact and quickly move BMPs to design/permitting and construction. Where analysis determines that additional BMPs beyond the existing stormwater controls are necessary, MassDOT will develop design plans and construct the retrofit improvements. MassDOT received federal funding for construction contracts under this initiative for fiscal year 2011 and 2012.
- **Programmed Projects Initiative:** As described in BMPs 7U and 7R, MassDOT also continues to seek opportunities in its existing highway construction projects to implement additional stormwater BMPs. In order to expand the projects which include stormwater drainage improvements beyond the retrofit initiative, MassDOT has developed this second program. The initiative includes identifying opportunities to address stormwater impacts into the design phase of MassDOT road improvement or maintenance projects included in the State Transportation Improvement Plan (TIP) (referred to as "programmed projects") and implementing BMPs. MassDOT will coordinate this process with its on-going assessments under BMP 7U and 7R to ensure consistency in its assessments and recommendations.

¹ Massachusetts Highway Department ("MassHighway") was integrated into the new Massachusetts Department of Transportation, Division of Highways, effective November 1, 2009, pursuant to St. 2009, c. 25, § 8.



During Permit Year 9, MassDOT assessed 76 impaired water bodies through the Retrofit Initiative, as set forth in the June 8 and December 8th, 2011 submittals to EPA. These assessments have identified 37 existing BMPs and led to the proposal of an additional 42 conceptual BMPs. Twenty additional assessments identified pollutant reduction or impervious cover targets to meet. These assessments are currently in the design process for additional stormwater BMPs. Including these assessments as well as programmed projects and remaining assessments from Permit Year 8, there are currently a total of 114 BMPs in design and 16 BMPs in the construction phase.

Through the Programmed Projects Initiative, MassDOT has returned more than 230 Water Quality Data Forms this permit year that indicate whether a project may need additional stormwater controls to address stormwater runoff. MassDOT proposed 46 conceptual BMPs to treat stormwater runoff near impaired waters during upcoming resurfacing projects. An additional 14 conceptual BMPs were proposed outside of the impaired waters direct watersheds. The construction of stormwater BMPs for the resurfacing of Interstate 395 in Oxford, Massachusetts is complete and includes 13 infiltration basins that will achieve an estimated pollutant loading reduction of 20.6 lb of phosphorus per year. A summary of these activities is included in BMPs 7R and 7U, along with Appendix A.

In 2010, the United States District Court for the District of Massachusetts (Young, J.) approved the remedial plan submitted by MassDOT (including all SWMP revisions) as part of the entered findings and rulings after a trial held in Conservation Law Foundation et al. v. Patrick et al., No. 06-11295-WGY. The trial decision included construction of water quality BMPs at sites in Milford, Bellingham, and Lancaster. In January 2011, MassDOT completed construction of all mitigation measures as ordered by the court at the three sites. On April 14, 2011, the Court entered final judgment and closed the case. MassDOT submitted the final inspection document required by the court “Final Site Inspection and Maintenance Report, MassDOT Stormwater Mitigation Project at Three Locations: Milford, Bellingham, Lancaster” (see BMP 7T) on October 14, 2011.

MassDOT finalized the Drainage Tie-In Standard of Practice (SOP) this year and it was officially issued on March 19, 2012. This Drainage Tie-In SOP provides standards for properties that wish to tie into the MassDOT drainage system and includes provisions for not allowing non-stormwater discharges and ensuring that the stormwater discharges which are provided permits to tie into the system are in compliance with the NPDES general permit.

Part III. Summary of Minimum Control Measures

The BMPs included in MassDOT’s Stormwater Management Plan (SWMP) are summarized in each of the Minimum Control Measure sections below.

1. Public Education and Outreach

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|----------|--|-------------------------------|---|---|---|
| 1A | MassDOT Training Assistance Program (MTAP) | MTAP | Facilitate one training program related to stormwater and /or snow and ice control as a means of reducing source pollution. Document attendance numbers. | <p>Thirteen Snow & Ice Control classes were conducted in 2011 with a total of 604 personnel and 171 vendors in attendance. Classes ran 5-6 hours each.</p> <p>Trainings dates were September through December, 2011.</p> <p>Topics covered included:</p> <ul style="list-style-type: none"> • Anti-icing vs. Deicing • Department operations • Salt and environmental considerations | Continue with snow and ice and/or stormwater pollution source reduction training. |
| 1B | Baystate Roads | Baystate Roads | Provide one training program for MassDOT employees and one for municipal DPW snowplow drivers related to snow and ice control as a means of reducing source pollution. Document attendance numbers. | Training programs were not held this permit year due to a lack of funding. | Training will resume if sufficient funds are available. |
| IC-1 | MassDOT Web Site | IT/Environmental | Add Environmental Section web page to web site. | Measurable goal completed in Permit Year 1. | Measurable goal complete. |
| IC-2 | MassDOT Web Site | IT/ Environmental | Include link for contacting Highway Department via email. Review emails and direct to appropriate department. | The MassDOT web site includes a link for contacting the Highway Division via email. Emails received are reviewed and directed to the appropriate department. | Measurable goal complete. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|----------|---|----------------------------------|--|--|--|
| 1C-3 | MassDOT Web Site | IT/ Environmental | Evaluate web page annually and revise as necessary. | The Environmental web page has been reviewed and updated. Annual Report 8 was added this year. | Evaluate Environmental web page and revise as necessary. Annual Report 9 will be added to the content. MassDOT is developing a Stormwater Management Website to be launched in 2012. This website will contain information on our various stormwater management programs as well as links to important design, construction, and annual reporting information. |
| 1D-1 | Removed Storm Water Training Workshop | Environmental/ MTAP | Conduct training for MassDOT 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 stormwater 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 | Removed Storm Water Training Workshop | Environmental/ Baystate Roads | Conduct stormwater training workshop for municipal DPW personnel every two years. Summarize training programs similarly to above. | This BMP is duplicative since stormwater 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. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|--|---|--|---|---|---|
| 1F | Removed MassDOT/ Municipal Tie-In Review Process | Environmental/ Districts | Develop communication mechanism re: MassDOT drainage that discharges to a local MS4. Develop review process for addressing those concerns. Notify other MS4s of process. | BMP Revised – see 1F below | BMP Revised |
| <i>1F Revised (Revised in Jan 08 SWMP)</i> | <i>Post Contact Names for Municipal Drainage Concerns on MassDOT Web Site</i> | <i>Environmental/ Districts/ GIS</i> | <p>1) Distribute a flyer with contact names to municipalities during May 2007 Baystate Roads NPDES Phase II General Permit seminar.</p> <p>2) Post DHD contact name for each district on website for municipalities to contact and maintain link.</p> <p>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 MassDOT owned roads and outfalls. MassDOT will then review alternatives for alerting towns and the public to the availability of this information.</p> | <p>1) Completed in Year 5.</p> <p>2) DHD contact names continue to be updated on the web site. Go to http://www.mhd.state.ma.us/default.asp?pgid=dist/distRoot&sid=wrapper&iid=dist/dist.asp</p> <p>3) MassDOT in process of posting drainage outfall inventory on web site at this location: http://www.massdot.state.ma.us/planning/Main/MapsDataandReports/Data/GISData/Outfalls.aspx</p> | <p>1) Completed in Year 5.</p> <p>2) Continue to maintain contact names.</p> <p>3) Share drainage inventory information as requested.</p> |
| 1G | River and Stream Signs | Traffic Operations | Maintain signs identifying rivers and streams crossed by MassDOT roads, until crossing of all named rivers and streams are signposted. | <p>MassDOT has installed 26 signs identifying river and stream crossings in Permit Year 9. The locations were identified by MassRiverways Program and installed by MassDOT personnel. A list of the locations is included in Appendix B of this report.</p> <p>Created an interpretive porous pavement sign for installation at a Park & Ride in Whately.</p> | MassDOT will continue to install signs in areas identified by MassRiverways Program and anticipates installing approximately 10-30 signs in the next 12 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. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|----------|--|-------------------------------|--|---|---|
| 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. | <p>The Think Blue Campaign is not utilized for this BMP due to lack of resources and agreement for approach to project. Instead, MassDOT updated the stormwater brochure to distribute at appropriate venues. 200 brochures were distributed at the Massachusetts Association of Conservation Commissioners (MACC) annual conference on March 3, 2012.</p> <p><u>Stormwater Program Webpage</u> – Development of this has been ongoing.</p> <p><u>Impaired Waterbodies Program</u> – Alex Murray spoke at the ACEC Breakfast in Waltham on 1/12/2012, the ELA Conference in Springfield on 3/8/2012, and the BSCES dinner in Watertown on 3/8/2012.</p> | <p>Distribute brochure at appropriate venues and track # distributed.</p> <p>Complete and post the Stormwater Program webpage.</p> <p>Continue to inform others about the Impaired Waterbodies Program through public outreach.</p> |
| 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, stormwater and erosion controls. | Henry Barbaro communicates with other DOTs in the New England region and across the country as the need arises. This has been done on an individual basis, small group basis, and through the AASHTO Storm Water Committee. Henry Barbaro, Wetlands Supervisor, is on the AASHTO Storm Water Committee. | <p>MassDOT will communicate with other DOTs as the need develops and participate in the AASHTO stormwater committee.</p> <p>Henry Barbaro will be attending the biannual conference 6/19–21/2012 (Raleigh, NC). Approximately 60 people will attend with all 50 states represented. Topics to be covered will include transportation and the environment.</p> |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|----------|------------------------------|-------------------------------|--|---|---|
| 1K | Storm Water Coordinator | Environmental | Fund a full-time stormwater coordinator position each year. | <p>Robert Bennett continues to coordinate the NPDES stormwater program. He has completed many tasks under this role throughout the year.</p> <p>Alex Murray continues to be in charge of the Impaired Waters Program implementation. He works with design consultants to determine what stormwater features might be necessary to address discharges to impaired waters and works with the consultants to perform assessments under the Impaired Waters Retrofit Initiative and Programmed Project Initiative.</p> | Continue to fund a stormwater coordinator and an Impaired Waters Program coordinator. |
| | Environmental Site Data Form | Environmental | Develop an environmental site data form for review by designers with Environmental staff at 25% Design. Implement on all projects. | <p>The Water Quality Data Form (WQDF) was updated in 2011 and is being used for submittal at 25% Design and 75% Design stage to MassDOT by internal designers and consultants.</p> <p>More than 140 projects on the STIP have been assessed for impacts to Impaired Waters utilizing the WQDF this year. MassDOT's Environmental Section has received over 230 WQDFs from design consultants and internal designers this year, 141 at the 25% design phase and 91 at the 75% design phase. A total of 99 projects are potentially affecting an impaired water body.</p> | <p>Internal designers and consultants will continue to submit the forms at 25% and 75% Design Submittals.</p> <p>Update the form to be more user-friendly and capture appropriate information.</p> <p>Continue to work with designers to educate on the information required as part of the data form and how to accurately and comprehensively complete.</p> |

2. Public Involvement and Participation

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|------------|--|-------------------------------|--|---|--|
| 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. | MassDOT continues to comply with federal and state public notification and public participation requirements. MassDOT conducted 66 design public hearings in this permit year (see Appendix C). | MassDOT will continue to comply with federal and state public notification and public participation requirements. All public hearings will be posted on the website. |
| 2B | Adopt-a-Highway | Adopt-a-Highway | Continue to support program. | MassDOT continues to support this program. Thirty Adopt-A-Highway signs were posted. There was a slight decrease in our corporate sponsor and our volunteer levels have remained flat. | Maintain or increase current level of sponsors and increase volunteer participation. |
| 2C | Removed Project Clean | Project Clean | Continue to support Project Clean. | Revised – see 2C below | BMP Removed. |
| 2C Revised | 511 Massachusetts Traveler Information System | Operations | Maintain 511 System | The 511 program received various calls during the permit year. The calls included reports of issues such as roadway debris and litter along the roadway. | The 511 system will continue to be monitored and maintained via MassDOT's vendor: Sendza, Inc. |
| 2D-1 | MassDOT Web Site | IT/ Environmental | Post Storm Water Management Plan (SWMP) to web site. | The most recent SWMP submitted to EPA (January 2008) is posted on MassDOT's web site. | Post information about individual permit when issued. |
| 2D-2 | MassDOT Web Site | IT/ Environmental | Post annual reports to the web site. | Measurable goal complete. Annual Reports for Permit Year 1-8 are posted on the Environmental Section's web page. | Permit Year 9'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 9 | Planned Activities – 2012/2013 |
|----------|--------------------|---|--|---|--|
| 3A-1 | Rest Area Leases | Environmental/ Right-of-Way | Include drainage system submittal requirements in all new rest area leases where the site is to be redeveloped. Summarize in annual reports. | Submission of drainage information is a standard condition on all new rest area leases. | Measurable goal complete. |
| 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 9. | 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. | <p>MassDOT has procured an asset and maintenance management system. The implementation of the Maximo Asset Management System is about half-way through completion.</p> <p>Drainage components and their attributes have been defined in the system. All the routes to which drainage activities may be associated have also been defined in the system.</p> <p>Available drainage asset data is being converted and imported into the system.</p> <p>Job plans related to drainage activities are drafted in the new system. These job plans will be attached to work orders for those types of activities.</p> <p>As part of illicit discharge review and mapping program and the Retrofit Initiative, MassDOT-Highway Division consultant, AECOM, has continued to improve upon MassDOT's drainage outfalls and other drainage components electronic inventory.</p> | <p>Additional data on drainage assets is being collected for import into the system. Through training efforts at the District level, activities related to stormwater infrastructure, such as inspections and catch-basin cleaning will be tracked, helping to keep our infrastructure data up to date.</p> <p>Updating of the outfall inventory and information related to the illicit discharge work will continue to be used to update that stormwater infrastructure layer. During site visits for the Retrofit Initiative and Programmed Project Initiative, AECOM will locate existing stormwater BMPs and add them to the infrastructure layer.</p> |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|----------|--|-------------------------------|---|---|---|
| 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. Public access has been provided by MassDOT through the web site or through District offices to Town's or other entities that request inventory related information. MassDOT has received a number of requests and have been able to respond relatively quickly. | Continue to share inventory with public and within the Department. |
| 3C-1 | Drainage Connection Policy | Environmental | <ol style="list-style-type: none"> 1.) Issue Drainage Connection Policy. 2.) Post copy of policy on MassDOT web site. 3.) Enforce the provision through referrals to the Attorney General office. 4.) Summarize actions taken in the annual report. | <ol style="list-style-type: none"> 1.) Policy issued 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/engineering02&sid=about 3.) No referrals to the AG office were necessary. 4.) Letters have been sent to residences/ businesses with potential illicit connections this permit term. See also BMP 5H-2. | <p>Continue to enforce provisions of drainage connection policy.</p> <p>Follow up on letters.</p> |
| 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. | <p>The Drainage Tie-In SOP has been finalized (Appendix D). It was officially issued on March 19, 2012.</p> <p>Appendix E summarizes the status of drainage tie-in permits that have been received or are still in the application process as of this permit year.</p> | The Drainage Tie-In SOP will be utilized for tie-in issues and procedures. MassDOT will also continue to update Appendix E as needed. |
| 3D | Revised 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 9 | Planned Activities – 2012/2013 |
|---------------|---------------------------|-------------------------------|--|--|--|
| 3D Revised | Illicit Connection Review | Environmental/ Districts | <p>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.</p> | <p>Contract was awarded to AECOM and a Notice to Proceed was issued on September 15, 2010. AECOM reviewed approximately 13 miles of roads in November and December 2011. The illicit discharge program focused on reviewing areas with impaired waterbodies that are only impaired for pathogen related impairments.</p> <p>During the 2011 field season, AECOM field crews conducted work in 5 cities and towns on 13 miles of roadway on 7 different interstates, state highways, and state roadways. This review included IDDE activity for roads as part of the Retrofit Initiative to address receiving waters which were impaired for pathogens and other pollutants.</p> <p>The AECOM field team collected samples from 8 dry weather flows within the 2011 survey area. The analytical results for all the locations suggested natural sources for the flow such as groundwater seepage or a culverted stream. No flows were identified as potentially illicit discharges.</p> <p>A full summary of the 2011 IDDE work is included as Appendix F.</p> <p>MassDOT and AECOM also spent time following up on legacy potential illicit discharges. The end of Appendix E includes a single page description for each of the three discharges which were reviewed.</p> | <p>MassDOT is working with EPA to develop a revised IDDE program, and once finalized it will be implemented.</p> <p>MassDOT will perform field review of 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. We will provide summary of IDDE activity in annual report.</p> |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|----------|---|-------------------------------|--|-------------------------------------|--------------------------------|
| 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 9 | Planned Activities – 2012/ 2013 |
|----------|---|--|--|---|---|
| 4A | MassDOT Department Project Development & Design Guide | Environmental/ Construction/ Projects | Drainage systems for MassDOT roadways will be designed in accordance with Chapter 8 of the MHD Highway Design Guide and companion manuals. | All MassDOT projects will continue to be designed in compliance with the erosion and sediment control requirements in the design guide. | All MassDOT 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 (WPA) and Clean Water Act Section 401. | MassDOT designs continue to comply with the Stormwater Management Policy when projects are subject to the WPA or within urbanized areas. | MassDOT 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 MassDOT in annual report. | 38 MassDOT projects included submittal of NOI and development of SWPPP for compliance with NPDES construction general permit during Permit Year 9. The permits are listed in Appendix G. | 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 9 | Planned Activities – 2012/ 2013 |
|----------|---|--|---|--|---|
| 4E | MassDOT Storm Water Handbook | Environmental/ Construction/ Projects | Design projects in urbanized areas in compliance with Handbook | MassDOT requires that all new construction and redevelopment activities undertaken by MassDOT, or by others that are funded in whole or in part by MassDOT, comply with the Handbook. | MassDOT will continue to require that all new construction and redevelopment activities undertaken by MassDOT, or by others that are funded in whole or in part by MassDOT, comply with the Handbook. MassDOT is working with MassDEP to revise the Storm Water Handbook to address policy changes and TMDL requirements. |
| 4F | Standard Specification for Highways and Bridges | Environmental/ Construction/ Projects | Continue to include erosion and pollution prevention controls in construction contracts. | <p>Inclusion of such controls is standard practice for construction contracts issued by MassDOT.</p> <p>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 DEP on a project by project basis.</p> | Such controls will continue to be included in construction contracts issued by MassDOT. |
| 4G | <i>MassDOT Research Needs Program</i> | <i>Environmental/ Construction</i> | <i>Continue funding the MassDOT Research Needs Program.</i> | <i>Moved to MCM 6 since focus of research program is now for source control instead of construction</i> | |
| 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 MassDOT and the Contractor. | MassDOT reviews the NPDES Construction GP requirements with Contractors at the pre-construction meeting. MassDOT Environmental Engineers attend all pre-construction meetings which involve environmental permits, not limited to NPDES. Therefore, erosion control is discussed at all pre-con meetings. | MassDOT will continue to review the NPDES Construction GP requirements with Contractors at the pre-construction meeting. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|----------|---|---|--|---|--|
| 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 DEP 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 | The draft guide internal review is complete. Drafts have been printed for field review by Resident Engineers prior to finalization. | <ul style="list-style-type: none"> • Complete Resident Engineer review and comment. • A field guide on erosion prevention and sediment control will be finalized and disseminated to Resident Engineers. • Post online. |
| 4K | Storm Water Pollution Prevention Plan (SWPPP) Guidance Manual for Contractors | Construction Section/ Districts | Prepare a SWPPP Guidance for Contractors document on MassDOT construction projects. Implement use of the document on all appropriate MassDOT 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 MassDOT projects. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|----------|--|---|---|--|--|
| 4L-1 | Training | Construction Section | Conduct annual Erosion Prevention and Sediment Control Training for MassDOT Construction Personnel. Summarize # of attendees and topics covered. | <p>Winter seminars performed and covered Permit Compliance, including Erosion and Sedimentation Controls; Diesel Retrofit; and Hazardous Materials.</p> <p>District 1 - March 21, 2012 with 45 attendees</p> <p>District 4– February 2, 2012 with 59 attendees</p> <p>District 5 –February 9, 2012 with 55 attendees</p> | <p>MassDOT will continue training on topics similar to those discussed in the past.</p> <p>Upcoming trainings include:</p> <p>District 2 - May 2, 2012</p> <p>District 3 - May 10, 2012</p> <p>District 6 – May 2012</p> |
| 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 MassDOT Research and Materials Section. As new technologies are developed, review and develop specifications for additional erosion controls. | <p>MassDOT has been routinely recommending compost tubes for erosion control.</p> <p>Compost specifications and accompanying detail have been refined. Specs for compost tubes, compost amended topsoil (compost blanket), and compost over modified rock amended fall 2011.</p> | Looking into stormwater benefits of compost materials, particularly in topsoil/compost blanket applications. |
| 4M | Erosion and Sediment Control Field Tests | Construction Section/ Districts/ Landscaping | Perform field tests of new erosion and sediment control materials on MassDOT projects. Prepare and circulate an internal memo on the effectiveness of the new measure. | No new field tests were reported from PY9. | MassDOT will explore the need for further field tests. |
| 4N | Construction Bulletins | Construction Section | Issue annual construction bulletins to each District regarding stormwater issues. | Issued annual construction bulletins to all Districts on Friday August 26, 2011 regarding stormwater issues. | Issue bulletin in the Fall of 2012 regarding stormwater issues. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|----------|--|---------------------------------|---|---|--|
| 4O | Solicit Construction Activity Feedback from Public | Construction Section/ IT | Maintain MassDOT web site to include contact information for ongoing construction activities. Respond to concerns submitted in a timely manner. | MassDOT maintained their website to include contact information for ongoing construction activities. MassDOT responded to concerns submitted in a timely manner. | MassDOT will continue to maintain their website to include contact information for ongoing construction activities. MassDOT 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. | Compliance inspections were held. Actions taken at locations not in compliance: SWPPP Inspector was changed on project as allowed under SWPPP Contract Item. See Appendix H for details. | MassDOT will continue to address non-compliance through monetary penalties or deductions or delays in payment, when warranted. |
| 4Q | Standard Practices Memo | Construction Section | MassDOT 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 provided with the procedures to follow on discovery of any illicit discharges during construction and provided training to the Residential Engineers (Res.). MassDOT 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. | Training program is being updated to include latest information from CGP by MassDOT and will be finalized by Summer 2012. Once the training is finalized, training sessions will be held. | Bring training to contractors and Resident 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 9 | Planned Activities – 2012/ 2013 |
|----------|--|-------------------------------|---|--|---|
| 5A-1 | MassDOT Storm Water Handbook | Environmental | Secure DEP ratification for MassDOT Storm Water Handbook. | MassDOT is working with Mass DEP to revise the Storm Water Handbook to address policy changes and TMDL requirements. MassDOT will formally reissue it once complete and will work with Mass DEP to secure its' ratification. Measurable goal complete for original Handbook. | MassDOT anticipates completion of the Stormwater Handbook in Spring of 2013. MassDOT will then submit a copy to DEP to secure ratification of the revised Handbook. |
| 5A-2 | Revise Ch. 4 of the MassDOT Storm Water Handbook | Environmental | Revise Chapter 4 (selection methodologies) within 9 months of DEP's SW Policy Handbook update being released. Reissue MassDOT Handbook to Designers within 1 year of DEP's document being released. | MassDOT is working with Mass DEP to revise the Storm Water Handbook. MassDOT determined that a rewrite of the entire Handbook was more appropriate to address the changes in the DEP Policy and the MassDOT experience gained in implementing the guidelines. Therefore, the update has been more extensive and the schedule extended. | MassDOT anticipates completion of the Stormwater Handbook in Spring of 2013. MassDOT will then submit a copy to DEP to secure ratification of the revised Handbook. |
| 5A-3 | Revise Ch. 5 of the MassDOT Storm Water Handbook | Environmental | Revise Chapter 5 (BMP toolbox) within 9 months of DEP's SW Policy Handbook update being released. Reissue MassDOT Handbook to Designers within 1 year of DEP's document being released. | MassDOT is working with Mass DEP to revise the Storm Water Handbook. MassDOT determined that a rewrite of the entire Handbook was more appropriate to address the changes in the DEP Policy and the MassDOT experience gained in implementing the guidelines. Therefore, the update has been more extensive and the schedule extended. | MassDOT anticipates completion of the Stormwater Handbook in Spring of 2013. MassDOT will then submit a copy to DEP to secure ratification of the revised Handbook. |
| 5B | MassDOT Roadway Maintenance Program | Maintenance | Continue to implement MassDOT maintenance program as outlined in the maintenance schedule and in accordance with TMDL watersheds specific agreements. | MassDOT 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 I. | MassDOT will continue to conduct maintenance on its roadways as outlined in the maintenance schedule and in accordance with TMDL watersheds specific agreements. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|----------|--|-------------------------------|---|---|--|
| 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. MassDOT 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. |
| 5E | Highway Runoff Contaminant Model | Env. Div. Consultant | Develop and calibrate contaminant loading model. | <p>The final report, “Quality of Stormwater Discharged from Massachusetts Highways 2005-2007” was completed and approved by the USGS in 12/09. The report is available at http://pibs.usgs.gov/sir/2009/5269/</p> <p>Because the findings documented in the final report indicate that the quality of highway runoff in the southern coastal area, including Cape Cod, was significantly different than the quality of highway runoff collected elsewhere in the state of Massachusetts, a total of 31 additional composite samples of highway runoff were collected at a site on Interstate 195 in Marion and on Route 6 in Harwich, Massachusetts. These samples were analyzed for suspended sediment, major ions, and total-recoverable metals. This new data can be used to improve the accuracy for estimates of constituent loads from state highways in the southeast portion of Massachusetts by the Stochastic Empirical Loading and Dilution Model (SELDM) model.</p> | <p>Project completed.</p> <p>The SELDM model is undergoing BETA testing and will be released when testing is complete.</p> <p>Review of the SELDM’s instruction manual will be completed.</p> <p>A version of the SELDM model that can be used by consultants should be completed this summer.</p> |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|----------|---|---|---|--|--|
| 5F | Remove 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 now 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 MassDOT for their potential in siting stormwater BMPs. | The Environmental Services Section reviewed 18 canvasses for the permit year. Two of them were opposed for sale because of their value in stormwater management under the Impaired Waters Program. | 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 (and wetland replication). |
| 5H-1 | Post Construction Runoff Enforcement-Illicit Discharge Prohibition Policy | Commissioner/ Legal/ Environmental | 1) Develop policy for addressing unauthorized connections to the MassDOT'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. All letters for property owners violating the <i>Illicit Discharge Prohibition Policy</i> that were being prepared and finalized during the previous permit year have been sent to their respective locations. Potential illicit connections from this past year are included in Appendix F. | For each of the presently occurring situations where a letter has been sent to a location for violation of the <i>Illicit Discharge Prohibition Policy</i> , MassDOT's Environmental and Legal Sections will attempt to work directly with the property owner in order to resolve the issue. This approach will involve phone calls for conveying information and discussing the issues. |
| 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 MassDOT drainage system. Implement program and summarize actions taken under program in annual report. | The Drainage Tie-In SOP has been finalized. It was officially issued on March 19, 2012. Appendix E summarizes the status of drainage tie-in permits that have been received or are still in the application process as of this permit year. | The Drainage Tie-In SOP will be utilized for tie-in issues and procedures. MassDOT will also continue to update Appendix E as needed. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|----------|--|------------------------------------|---|--|---|
| 5H-3 | Post Construction Runoff Enforcement- Offsite Pollution to MassDOT Drainage System | Commissioner/ Legal/ Environmental | Runoff not meeting the NPDES MS4 requirements which is reaching the MassDOT MS4 and is not covered under 5H-1 or 5H-2 may be considered trespassing and referred to the AG's office by MassDOT counsel at the DHD's discretion. | No enforcement action was needed in any of the districts. | MassDOT 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 MassDOT, to meet the standards within the Storm Water Management Handbook and the SWMP requirements. | Measurable goal complete. Although this goal is complete, MassDOT continues to require improvements at rest areas as needed. An example of this occurred when improvements to stormwater drainage were made to the I-95/Rt. 2A service area in Lexington, Massachusetts. The work was completed in December 2011, and included the installation of storm drains, storm drain lines, catch basin manholes, and the restoration of a vegetated swale. | 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. |
| 5K | Federal Enhancement Funding | Planning | Explore opportunities for using Federal enhancement funding for environmental restoration and pollution abatement projects. Participate in quarterly committee meetings. | BMP was replaced with activities undertaken as part of Impaired Waters Program. | No activities planned. |

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 9 | Planned Activities – 2012/2013 |
|----------|--|-------------------------------|---|---|--|
| 6A-1 | Source Control - 511 Massachusetts Traveler Information System | Project Clean/Operations | Maintain the existing 511 System. | MassDOT continues to support this system. | MassDOT 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. | MassDOT continues to support this program. Approximately 282 miles were cleaned for litter pick-up 6-8 times each year, 284 miles were cleaned 14- 24 times by Sponsor-A-Highway during Permit Year 9. | Maintain or increase the current level of Sponsors and increase volunteer participation. |
| 6A-3 | Source Control - Deicing Programs and Reduced Salt Areas | Environmental/Districts | Continue to support De-icing and Reduced Salt Areas Programs. | <p>MassDOT will continue to support the De-icing and Reduced Salt Areas Programs.</p> <p>The Salt Material Usage Committee was reconvened June 24, 2011 and June 28, 2011.</p> <p>Discussed possibility of new signs, training schedule, and SOP and RSZ map changes as well as trial RSZ areas for using 3:1 ratio of salt to sand. Also reviewed new areas of concern, salt storage management and technological advances.</p> <p>See Appendix J for more information on well replacements and Salt Remediation Program (BMP 6G).</p> | The next meeting will be held on April 18, 2012. The committee will review results from trial RSZ areas, new areas of concern, and the Environmental Status and Planning Report. |
| 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. | MassDOT had 25 routes of roving service patrols or tow trucks in Permit Year 8 and continued with this number during Permit Year 9. MassDOT also had 10 Emergency Service Patrol (ESP) vehicles, which patrolled 4 routes in PY9. This service not only assists disabled motorists but also reduces traffic congestion. | MassDOT will continue to maintain this program. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|----------|---|-------------------------------|---|--|--|
| 6A-5 | Source Control - VMP | Environmental | <p>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.</p> <p>2) Prepare a Yearly Operational Plan (YOP) by April of each year.</p> <p>3) Post YOP on web site within 30 days.</p> <p>4) Summarize actions taken in previous year in annual report.</p> | <p>1) MassDOT completed The Five-Year 2009-2013 Vegetation Management Plan and posted it on the web. The plan is for proposed limited use of herbicides as part of overall vegetation management plan.</p> <p>2) Filing of YOPs for Districts 1-6 are in progress.</p> <p>3) Three YOPs are anticipated for Districts 2-5, District 6, and District 1. VMP will be posted for Districts 1 and 6: http://www.mhd.state.ma.us/default.asp?pgid=content/publicationother&sid=about</p> | Anticipated 5-Year VMP for Districts 2 through 5 (Renewing). |
| 6A-6 | Source Control - HOV | Planning | Continue participation in ridesharing activities through the duration of the permit term. | MassDOT continues to support this program | MassDOT will continue to support this program. |
| 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. | <p>Fiscal Year 2011 Bicycle and Walking Budget for MassDOT: \$3,500,000.</p> <p>\$2,874,000 was used for bicycle and walking infrastructure improvements as part of the Safe Route to School Program Budget.</p> | <p>Fiscal Year 2012 Bicycle and Walking Budget for MassDOT: \$3,068,832.</p> <p>\$1,350,000 will be used for bicycle and walking infrastructure improvements as part of the Safe Route to School Program Budget.</p> |
| 6A-8 | Source Control- Highway Safety | Highway Design | <p>1) Incorporate safety measures into all new highway designs.</p> <p>2) Provide signage to warn of vehicle hazards including tipping hazards and steep grades.</p> <p>3) Install variable message boards (VMBs) on selected roadways to improve driver awareness.</p> <p>4) Include evolving safety technologies as part of future highway design projects as they are developed.</p> | Safety measures are included in all new highway designs including appropriate signage and evolving technologies. MassDOT installs and maintains VMBs on select roads to improve driver awareness to potential safety hazards. | MassDOT will continue to support this program. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|----------|-----------------------|-------------------------------|---|---|---|
| 6A-9 | Source Control - TURA | Environmental | 1) Maintain an active Pollution Prevention Task Force (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. Department continues to monitor proper handling and storage of hazardous materials and solid wastes at maintenance facilities. | MassDOT will continue to support this program. MassDOT will continue monitoring for proper handling and management of stormwater polluting materials, solid wastes, and industrial waste water. |
| 6B-1 | Employee Training | MTAP/ Baystate Roads | Continue to support MTAP and Baystate Roads program. | MassDOT continues to support these programs. Specific programs sponsored by these programs are discussed in BMP 1A and 1B. | MassDOT will continue to support these programs. |
| 6B-2 | Employee Training | Environmental | Provide annual training to at least 300 maintenance facility personnel regarding good housekeeping/ spill prevention. | <p>Trainings were provided during the winter of 2011/2012 for 686 maintenance facility personnel. Training included discussion of the following topics:</p> <ul style="list-style-type: none"> • Environmental awareness and comprehensive wetland training • Asbestos Containing Materials • Solid Waste • Roadside Issues • Storage Tanks • Wetlands • Recordkeeping • Inspections • Water Quality • Natural Resources • Spill Prevention/Response/Management • Hazardous Materials Management • Hazardous Waste Management • Universal Waste Management • Stage II Vapor Recovery System Inspection <p style="text-align: right;"><i>(continued on next page)</i></p> | MassDOT 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 9 | Planned Activities – 2012/2013 |
|------------------|-------------------|-------------------------------|---|--|---|
| 6B-2 (cont'd) | | | | <p>District 1: On April 12, 13, and 14, Nov 16, and Dec 28 trainings were provided for 122 district maintenance personnel.</p> <p>District 2: On Oct 26 and 27, trainings were provided for 145 district maintenance personnel.</p> <p>District 3: On Oct 20, 25, 27, and Nov 3, 8, and 30 trainings were provided for 104 district maintenance personnel.</p> <p>District 4: On Oct 18, 19, 20, and 27, trainings were provided for 109 district maintenance personnel.</p> <p>District 5: On Oct 24, 25, and 26, training sessions were provided for 96 district maintenance personnel.</p> <p>District 6: On Nov 29, 30, and Dec 1, training sessions were provided for 110 district maintenance personnel.</p> | |
| 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. | MassDOT has expanded training to include all maintenance personnel. Thirteen Snow and Ice Trainings were held from October 1st through November 15th. More than 600 state personnel and over 150 vendors attended. Topics covered included: Anti-icing versus deicing, Department Operations, and Salt and Environmental Considerations. | All supervisors and drivers will continue to stress training to our personnel. We will train everyone each year. We are anticipating more focus on proper inspection, and proper application of materials, and better timing. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|----------|-------------------|-------------------------------|---|--|--|
| 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. | <p>Trainings were held throughout the year on topics as follows:</p> <ul style="list-style-type: none"> • Front End Caterpillar (928HZ) Loader – October 2011 • 10 Wheel Freightliner – December 2011 • TP-26 Tow Plow – December 2011 • Compu-Spreader Model 440 & 230 – November 2011 • OJK-H (STEPP Oil Jacket Kettle) – November 2011 • Elgin 3 Wheel Waterless Sweeper – August 2011 • F-450 Scissor-Lift Truck – March 2011 | MassDOT will provide Operational, Safety, and Maintenance training on sweeper training, mower training, snow and ice equipment training. It consists of operational, safety and maintenance training. This is all based on the District's needs and requests. No dates are set at this time. |
| 6C-1 | Maintenance | Districts | Continue to implement maintenance schedule outlined in Appendix E of the SWMP. | MassDOT continued to maintain the highway system through catch basin cleaning contracts, street sweeping and regular drainage system maintenance. See Appendix I of the annual report for a summary of compliance. | MassDOT 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. |
| 6C-2 | Maintenance | Districts | 1) MassDOT 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 MassDOT website for public information. 3) Post generic Facility Handbook on website for public information. | <p>Site specific facility handbooks were created in 1995. The EMS Manual and the Facility Environmental Handbook are both posted on the MassDOT web site.</p> <p>In Permit Year 9, MassDOT was in the process of updating the web content to reflect the latest versions of the EMS documentation.</p> | <p>MassDOT will continue regular facility compliance inspections, continue audit program implementation, develop new SOPs as required, and continue environmental awareness training.</p> <p>Post the updated EMS Manual to the website in 2012.</p> |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|----------|---|-------------------------------|---|--|--|
| 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. | MassDOT signed a contract with EMA, Inc. to implement the Maximo Asset Management System. The implementation is about half-way through completion. Drainage components and their attributes have been defined in the system. All the routes to which drainage activities may be associated have also been defined in the system. Available drainage asset data is being converted and imported into the system. Additional data on drainage assets is being collected for import into the system. Job plans related to drainage activities are drafted in the new system. These job plans will be attached to work orders for those types of activities. | The implementation will continue through 2012. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|----------|-----------------|-------------------------------|---|--|--|
| 6D | Waste Disposal | Districts | <p>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 cannot be reused will be disposed of at landfills as daily cover. 3) Waste material from drainage structures and stormwater BMPs removed during maintenance will be disposed of according to “Reuse and Disposal of Contaminated Soil at Massachusetts Landfills” DEP Policy #COMM-97-001.</p> | <p>MassDOT and its contractors continue to properly dispose of waste. MassDOT did not have an appropriate opportunity to reuse street sweeping waste.</p> <p>District 1 reported that it removed 1,550 cubic yards of sweeping materials, and 845 cubic yards of drainage structure waste and disposed of each properly.</p> <p>District 2 reported that 1,890 tons of street sweeping material and 2,100 CY of drainage structure waste were disposed of properly.</p> <p>District 3 reported that 1870 tons or 1250 cubic yards of street sweeping material, 103 tons or 70 cubic yards of drainage structure waste, and 380 tons or 260 cubic yards of sediment from a dredging project was removed and disposed of properly.</p> <p>District 4 reported that 8366 tons of street sweeping material was removed and disposed of properly.</p> <p>District 5 reported that it removed and properly disposed of 3,130 tons or 2,087 cubic yards of sweeping materials and 32,500 cubic yards of drainage structure waste.</p> <p>District 6 reported that all material was properly disposed.</p> | <p>MassDOT and its contractors will continue to properly dispose of waste. MassDOT Environment will work with the District to quantify the disposal volumes of sweeping materials and drainage structure waste this year and report in next annual report.</p> <p>Due to the warm winter street sweeping cleanings should be less this year.</p> <p>There may be a large dredging project that District 3 may participate in. A figure of 1300 to 1500 cy has been proposed.</p> |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|--------------|--|---|--|--|--------------------------------|
| 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 6O 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. | Measure goal is complete. The findings of the Catch Basin Accumulation Project do not support the need for revising the existing cleaning schedule and SOP for catch basin cleaning. | No further action recommended. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|----------|---------------------------|-------------------------------------|--|--|---|
| 6F | Policy and Program Review | Environmental | MassDOT 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. | <p>The Program is evaluated each year, in the Spring. Changes and updates include: Closed Looped Controllers for contractors materials spreaders at 60%, evaluating the use of salt brine in anti-icing operations, included Tow Plows into operations.</p> <p>Incorporated a slurry spreader in Worcester area.</p> <p>MassDOT has established a program so that all material spreaders will have Closed Loop Ground Speed Controller Systems by 2014. A truck operator with an automatic controller based on ground speed is able to maintain a constant application rate of material on the road without having to adjust the valve opening to conform to the changing speed of the truck. The closed-loop system monitors both truck speed and belt or auger speed and adjusts the control valve until a predetermined ratio value of belt or auger speed and truck speed is obtained. This provides a more efficient application of material.</p> | Continue to evaluate program and implement changes as determined beneficial. Inclusion of a salt brine manufacturing plant in D5. |
| 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 ISA - \$4.75 million, from October 2008 through June 2012. New ISA - \$4.07 million from July 2012 through June 2015. An updated version of the Public Well Supply Matrix is included as Appendix J of this annual report to summarize the current status of each public well included in the salt remediation program. | <p>Field monitoring of public water supply wells. Continue Andover runoff study.</p> <p>Expanded use of magnesium chloride to pre-treat roads prior to winter storm event and pre-wet material prior to spreading on roads.</p> |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|----------|-----------------------|-------------------------------|---|---|--|
| 6H | Clean Well Initiative | Environmental | Provide a continued level of funding that will allow MassDOT to complete up to 20 replacement wells per year. | <p>MassDOT remediated eight wells this permit year. The names and locations of the wells are as follows:</p> <ul style="list-style-type: none"> • Caron, Ashby • Hoffner, Ashfield • O'Brien, Boxford • Shapiro, Boxford • Bacon, Brimfield • St. Laurent, Brimfield • Simmons, Otis <p>Kratochvil, Russell Continued sampling and analysis of private wells.</p> <p>An updated version of the Public Well Supply Matrix is included as Appendix J of this annual report to summarize the current status of each public well included in the Clean Well Initiative Program.</p> <p>Funding provided through ISA October 2008 through June 2012 and New ISA from July 2012 through June 2015.</p> | Continue sampling and analysis of private wells and where applicable well rehabilitation, replacement well, water treatment activities and drainage modifications. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|----------|-----------------------------|-------------------------------|---|--|--|
| 61 | Salt Management and Storage | Operations | <p>MassDOT 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.</p> <p>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. MassDOT will continue to prioritize the identification and selection of parcels being considered for new salt storage facilities, considering operational needs and the environmental setting.</p> <p>Review Sand Piles: MassDOT 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. <i>((Continued on next page))</i></p> | <p>MassDOT repaired or replaced many salt storage sheds including Revere, Chelmsford, Reading 129, and Many Other Facilities Across the State.</p> <p>The Salisbury facility created a sewer connection – eliminating the septic system on-site, and is in the process of designing drainage improvements and obtaining wetland delineations.</p> <p>Review sand piles: MassDOT has worked to standardize the new facilities upgrades to include room to load undercover and store multiple de-icers undercover, including sand. Several new fabric shed facilities are planned. They will address the concerns of wetlands.</p> | <p>MassDOT will continue to inspect sheds for repair needs in all districts.</p> <p>Planning and evaluation for Braintree facility for efficiencies.</p> <p>Two New Fabric Sheds -- Andover and Rowley are scheduled to be constructed</p> |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|----------------|--|-------------------------------|---|---|--|
| 6I (cont'd) | | | <p>The tarp could be peeled back once, before winter operations, and then covered again at the end of the season.</p> <p>Personnel: In October 2006, MassDOT 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.</p> | Director has continued to improve salt management and supervision of deicing operations. | Director will continue to oversee salt management and supervision of deicing operations. |
| 6J | Salt Storage Best Management Practices/ Pollution Prevention | Environmental | Continue to implement salt storage in compliance with DEP Guidelines on Deicing Chemical Storage. Continue to follow MassDOT SOP for the Management of Sand and Deicing Chemicals at MassDOT Facilities. Continue to follow Facility Environmental Handbook guidelines at maintenance facilities. | MassDOT will continue to include environmental stewardship in our winter operations classes. We will emphasize the need to follow the current SOP on salt management and proper materials handling. | Continued to inform personnel of the cause and effects of winter operations on the environment. |
| 6K | Equipment Improvements | Environmental | MassDOT will continue to expand the use of anti-icing as a standard tool for snow and ice control. | <p>MassDOT has mandated pre-wetting for all of our material spreaders. When pavement conditions warrant we shall pre-treat our pavements.</p> <p>Difficult to quantify due to mild winter.</p> | MassDOT will continue to review the possibility of a salt brine facility in District 5 where temperatures are warmer. Salt brine could be an effective alternative to other liquid chemical applications. This facility will support Cape Cod and the South Shore where winters are milder and temperatures are more moderate. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|----------|--|-------------------------------|---|---|---|
| 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. | <p>MassDOT is in the second year of a multi-year agreement with Telvent our weather provider approximately 50k (5 Year Contract Signed).</p> <p>They continue to be an outstanding resource for us.</p> <p>They are willing to strive to provide better forecast.</p> | We are looking to working with Telvent to provide an on demand pavement forecast. Information provided by RWIS stations along with other ESS stations. |
| 6M | Road Weather Information System (RWIS) | Environmental | MassDOT will ensure that these stations will be maintained so as to remain fully functional. | MassDOT established a maintenance contract for the current RWIS Stations. The system is currently functioning at approximately 95-98%. | The contract for maintenance is a multi-year agreement. In order to keep the system functioning properly we are exploring improving the reliability of communications by changing the modems. |
| 6N | Alternative Technologies | Environmental | MassDOT 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. | <p>Pre-Mix continues to be used when appropriate. The increased use of magnesium chloride (MgCl) for Pre-Wetting has continued to maximize the effectiveness of salt while reducing overall use of deicers. Because of the mild winter we are unable to quantify the correct percent. It is estimated that we are in 30% +/-</p> <p>Research is proving that by better timing, proper application rates we can reduce the overall chlorides dispensed in the reduced salt zones.</p> <p>The use of anti-icing techniques has significantly reduced the amount of deicer required to keep the reduced salt zones in reasonably safe condition.</p> | Experimenting with reducing the amount of sand required in certain Reduced salt zones to evaluate the effects. Can MassDOT apply less overall salt in the reduced salt zones. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/2013 |
|----------|--|------------------------------------|---|---|---|
| 60 | Research | Operations | MassDOT has joined Clear Roads program and will continue to explore moving forward on other projects. Summarize research performed. | <p>Massachusetts has continued to commit resources towards Clear Roads and MassDOT continues to be active member in the Clear Roads program. Paul Brown (of MassDOT Operations) is the immediate past chairman of this pooled fund research group. During this permit year several projects were in progress. Research continues to assist MassDOT by bringing the most current practices to operations.</p> <p>Clear Roads activities are documented on their web-site Clearroads.org MassDOT has several of our research proposals voted to be funded and are in the process of being completed</p> <p>New Research Projects conducted:, True Cost of Snow and Ice Operations, Toxicity of Deicing Chemicals, Cost Benefit Study of Winter Operations, and Effects of Open Graded Friction pavements on winter operations</p> | <p>Several new project have been voted upon and the most significant; will be the improvements of the Salt Guidelines used in Federal Study TE-28</p> <p>Guidelines for salt distribution methods</p> |
| Addn. | <i>MassDOT Research Needs Program (Previously indicated as BMP 4G but focus of research program is now for source control instead of construction)</i> | <i>Environmental/ Construction</i> | <i>Continue funding the MassDOT Research Needs Program.</i> | GIS mapping for MassDEP approved Public Drinking Water Supply Zone II has been completed. | Proposed research problem statement on the quality and distribution of filtered and wholewater constituents in stormwater runoff discharged from Massachusetts highways. |

7. Impaired Waters

| BMP ID # | BMP Description | Responsible Dept./ Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|----------|---|--------------------------------|--|---|--|
| 7A | Wetland Protection Act (WPA) Compliance | Environmental | <p>1) All MassDOT projects will comply with the WPA and MESA.</p> <p>2) When potential impacts are identified, MassDOT will work with the appropriate agencies to design the project to minimize the impacts.</p> | 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 MassDOT projects that utilize federal funds. | 112 Categorical Exclusion (CE) checklists were completed and approved for all federally-aided projects advertised for construction by MassDOT during Permit Year 9. All documentation supporting the MassDOT's determination of a project meeting the definition of a CE is on file with Environmental Services Department at MassDOT Highway Division. | Complete and approve 80 to 120 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 9 | Planned Activities – 2012/ 2013 |
|----------|---|--------------------------------|--|--|--|
| 7D | Environmental Site Data Form (Water Quality Data Form - WQDF) | Environmental/ Construction | Develop an environmental site data form for review by designers with Environmental staff at 25% Design. Implement on all projects. | <p>The WQDF integrates the Impaired Water Program and captures information about existing and proposed BMPs identified by design consultants and MassDOT designers. The WQDF is part of 25% (preliminary design) and 75% design (final design) submittals. The form requires the designer to document information about the stormwater system and the receiving water. The form was updated to include detail about each project, # of impervious acres before and after project is completed, receiving water name and impairment status, and name of any applicable TMDLs.</p> <p>MassDOT's Environmental Section has received over 230 WQDFs from design consultants and internal designers this year, 141 at the 25% design phase and 91 at the 75% design phase. A total of 99 projects are potentially affecting an impaired water body.</p> | <p>Continue to require submittal of forms at 25% and 75% design submittals. Report on results in annual report.</p> <p>Expand reporting to include capture the whole project's impact on an impaired waterbody by gathering information on the number of impervious acres before and after the project is completed and the effective reduction in pollutant loading or IC area that constructed stormwater BMPs provide.</p> <p>Continue to educate designers on the information required as part of the data form and how to complete the form accurately and comprehensively.</p> |

| BMP ID # | BMP Description | Responsible Dept./ Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|------------|--|--------------------------------|--|---|---|
| 7E | TMDL Recommendation Summary Table Update | Environmental | The TMDL Recommendation Summary Table of the annual report will be updated annually to reflect the TMDL reports that have been finalized in the previous permit year and to include update on activities consistent with the recommendations made in the TMDL. | <p>While MassDOT has developed a more detailed program in the Impaired Water Program this year to address TMDLs, we had historically included a table in the annual report summarizing all Final TMDLs in the state, how they relate to MassDOT and activities which have occurred in the watershed that are consistent with the TMDL suggestions. We have continued to include this table as Appendix K of this annual report for consistency with new data regarding activities that occurred this year and TMDLs that were finalized this permit year.</p> <p>As part of MassDOT's commitment under our Impaired Waters Program and BMP 7R of the SWMP, impaired waters with TMDLs are being assessed for compliance with the TMDL. Additional information is included under BMP 7R of this report and Permit Year 9 progress in Appendix A.</p> | <p>Continue to review draft and final TMDL reports and implement TMDL recommended activities when possible.</p> <p>Continue to review impaired waterbodies with TMDLs as indicated in BMP 7R.</p> |
| 7F – 7Q | TMDL Specific Recommendations | See NOI | | Comply with TMDL recommendations in Appendix K. | Comply with TMDL recommendations in Appendix K. |

| BMP ID # | BMP Description | Responsible Dept./ Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|--|--------------------------|--------------------------------|---|---|---|
| 7R (revised as of June 8 and July 22, 2010) | TMDL Watershed Review | Environmental | <ol style="list-style-type: none"> 1. Assess all TMDL waters (total of 209 covered by final TMDLs as of April 30, 2010) listed in Appendix L-1 of the SWMP (revised as of July 22, 2010), using the process described in BMP 7R. The assessments will be completed over five years, beginning June 8, 2010, and 20% (or about 41, TMDL waters) will be assessed each year. 2. Assess at least 25 water bodies (both TMDL and non-TMDL waters) within the first quarter of the Impaired Water Program (BMPs 7U and 7R). 3. Submit annual report to EPA containing the documentation described in Step 6 of BMP 7R. 4. Submit quarterly progress report to EPA during the first year of the Impaired Waters Program (BMP 7U and BMP 7R) and semi-annually thereafter. | <p>Permit Year 9 progress is described in detail in Appendix A.</p> <ol style="list-style-type: none"> 1. MassDOT completed assessment of 34 waterbodies (both TMDL and non-TMDL) for the quarterly submittal on June 8, 2011 and 42 waterbodies in the semi-annual submittal on December 8, 2011 to EPA. The submittals to date keep MassDOT on track to meet the commitment made to review 20% of watersheds with TMDLs (about 41) each year. 2. Complete in Permit Year 8. 3 & 4. A summary of the TMDL waterbodies reviewed during Permit Year 9 is included in Appendix A. <p>MassDOT issued a Notice to Proceed (NTP) to VHB and Tetrattech to provide environmental design services under a new contract which includes design of water quality treatment BMPs within watersheds with TMDLS once an assessment has been completed and the assessment identifies the need for additional treatment to meet the target WLA.</p> | <p>Future activities of the Impaired Waters Program are summarized in Appendix A. MassDOT will continue to assess waterbodies under BMP 7R and provide semi-annual reports to EPA on June 8, 2012 and December 8, 2012.</p> <p>MassDOT will continue to be an active participant in developing TMDLs that impact MassDOT with EPA and DEP. Provide public comment on draft TMDLs as appropriate.</p> <p>As new TMDLs are finalized, they will be used during future assessments under the Impaired Waters Program.</p> <p>MassDOT will submit the Description of MassDOT's TMDL Method in BMP 7R to describe the TMDL protocol used in assessments under this BMP to EPA.</p> |
| 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 56565 Salt Remediation Program budget is \$4.75 million October 2008 through June 2012 and \$4.07 million through new ISA from July 2012 through June 2015. | Continue to address new and existing salt complaints. |

| BMP ID # | BMP Description | Responsible Dept./ Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|---------------|--|--------------------------------|--|--|---|
| 7T (added) | Review of Specific Sites for Water Quality Exceedances in Response to Conservation Law Foundation (CLF) et al. Lawsuit | Environmental | <ol style="list-style-type: none"> 1. Analyze each of the three sites identified in the CLF lawsuit (Charles River crossings in Bellingham and Milford; and North Nashua River crossing in Lancaster). Develop summary report with modeling methodology and summary of results. 2. For the sites which are determined to contribute to the exceedance of water quality at the stream crossing, construct BMPs to address MassDOT related exceedances. 3. Submit a remedial plan to the court. | <ol style="list-style-type: none"> 1. Task completed in Permit Year 8. 2. Task completed in Permit Year 8. 3. Task completed in Permit Year 8. <p>MassDOT submitted a one-year summary of inspection and maintenance activities at the 3 sites titled “Final Site Inspection and Maintenance Report, MassDOT Stormwater Mitigation Project at Three Locations: Milford, Bellingham, Lancaster” on October 31, 2011.</p> | All required actions have been completed. |

| BMP ID # | BMP Description | Responsible Dept./ Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|--|--|--------------------------------|---|---|--|
| 7U (revised as of June 8 and July 22, 2010) | Water Quality Impaired Waters Assessment and Mitigation Plan | Environmental | <p>1). Assess all water listed in Appendix L-1 of the SWMP (revised as of July 22, 2010) using the process described in this BMP.</p> <p>2). Assess at least 25 water bodies (both TMDL and non-TMDL waters) within the first quarter of the Impaired Water Program (BMPs 7U and 7R).</p> <p>3) Submit quarterly progress reports to EPA during the first year of the Impaired Waters Program and semi-annually thereafter.</p> <p>4) Provide documentation described in step 6 of BMP 7U in annual reports to the EPA.</p> | <p>Permit Year 9 progress of the Impaired Waters Program is described in detail in Appendix A.</p> <p>1) MassDOT has submitted 76 assessments to EPA as part of its semi-annual submittals and completed 18 more which will be part of the June 8, 2012 submittal. MassDOT is on track to complete assessment of all waterbodies in Appendix L-1 of the SWMP in the five year commitment.</p> <p>2) Completed in Permit Year 8.</p> <p>3) MassDOT submitted the final quarterly progress report to EPA (June 8, 2011) and then submitted a semi-annual report on December 8, 2011. These reports included the review of 76 impaired waterbodies, including 33 waterbodies with TMDLs.</p> <p>4) A summary of the waterbodies reviewed during Permit Year 9 is included in Appendix A.</p> <p>MassDOT submitted the Description of MassDOT's Application of Impervious Cover Method in BMP 7U (MassDOT Application of IC Method) to describe the impervious cover protocol used in assessments under this BMP to EPA on April 6, 2011.</p> <p>MassDOT issued a Notice to Proceed (NTP) to VHB and Tetrattech to provide environmental design services under a new contract which includes design of water quality treatment BMPs once an assessment has been completed and the assessment identifies the need for additional treatment to meet the target reductions.</p> <p>During BMP 7U field work, a potential illicit connection to MassDOT's stormwater system in the vicinity of Norton Reservoir may have been discovered.</p> | <p>Future activities of the Impaired Waters Program are summarized in Appendix A. MassDOT will continue to assess waterbodies under BMP 7U and provide semi-annual reports to EPA on June 8, 2012 and December 8, 2012.</p> <p>A site investigation by MassDOT is planned for the Norton Reservoir site.</p> |

| BMP ID # | BMP Description | Responsible Dept./ Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 9 | Planned Activities – 2012/ 2013 |
|----------|---------------------------|--------------------------------|--|---|--|
| 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 (MassDOT or consultant) and Massachusetts Historical Commission to alter the design to mitigate or prevent adverse effects. | All projects listed in the Construction Advertisement Program for Permit Year 9 were reviewed for impacts to historic properties or archaeological resources. None of the projects reviewed had stormwater impacts to significant archaeological or historic resources. Thus, none of these projects required any stormwater BMP design alterations based on cultural resources concerns. | Continue to review projects for impacts to historic properties at the 25% Design Stage |



Part IV. Summary of Information Collected and Analyzed

All information collected and analyzed this year is summarized in the proceeding tables and narrative.

Part V. Program Outputs & Accomplishments (OPTIONAL)

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

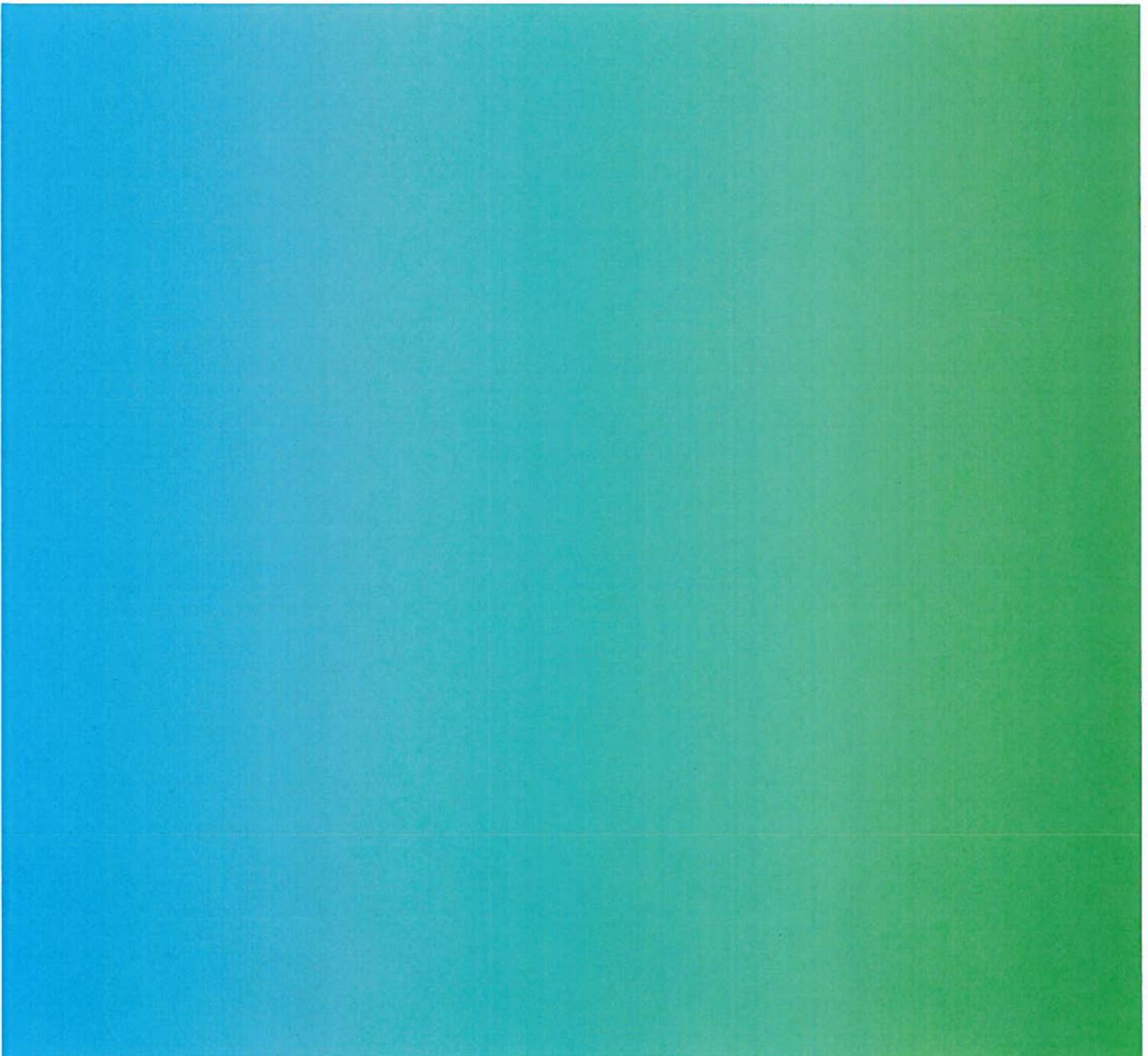
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Appendix A: Impaired Waters Program – Summary of NPDES Permit Year 9

Impaired Waters Program – Summary of NPDES Permit Year 9



Impaired Waters Program – Summary of NPDES Permit Year 9

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Impaired Waters Summary Sheet

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1.0 Introduction

The Massachusetts Department of Transportation (MassDOT) has developed a robust Impaired Waters Program with a proactive commitment to identify water bodies that receive runoff from its roadways. Some water bodies are classified as "impaired" in MassDEP's Listing of the Condition of Massachusetts' Waters (referred to as the 303(d) list).

MassDOT has committed to assessing all impaired water body segments that receive (or potentially receive) stormwater runoff from MassDOT roadways located in urban areas within a 5-year time frame. This includes approximately 680 water bodies across the state. MassDOT assesses whether stormwater is contributing to the impairment, whether its stormwater reaches the water body, and whether existing BMPs effectively treat runoff from the roadways. In the event that existing BMPs are inadequate, MassDOT will design and construct additional water quality BMPs where technically feasible. MassDOT is implementing this program through two initiatives: Retrofit and Programmed Projects.

The Retrofit Initiative is a new program for MassDOT. MassDOT expects this effort to reduce the impacts of its runoff on impaired water bodies through the implementation of many structural and non-structural BMPs. The Retrofit Initiative is designed to identify locations where adding BMPs along existing roadways is warranted and will lead to a significant reduction in water quality impacts. When assessments performed under this initiative recommend additional BMPs, MassDOT will install or implement BMPs to mitigate the impact of stormwater runoff. MassDOT plans to complete review of all impaired waters in the State by the end of 2015.

MassDOT also strives to implement structural BMPs, where warranted, when delivering programmed (planned) roadway construction projects. MassDOT's Programmed Projects Initiative is implemented for construction projects in areas where roadways drain to impaired waters. These projects may also include areas outside of jurisdictional areas covered by the EPA's NPDES stormwater permit and municipal projects undertaken by MassDOT. MassDOT performs an evaluation of the sufficiency of existing BMPs and, where needed, installs additional structural stormwater BMPs as part of the new construction. Incorporating structural BMPs into construction projects has proven to be much more cost-effective than retrofitting structural BMPs. This initiative began in 2011 and will be employed in more than one hundred construction projects annually.

2.0 Overview of Progress in Permit Year 9

This section describes the past year's progress of the Impaired Waters Program.

2.1 Stormwater BMPs under the Retrofit Initiative

MassDOT completed assessments of 76 water bodies during Permit Year 9. MassDOT included thirty four impaired waterbodies (both TMDL and non-TMDL) in its quarterly submittal on June 8, 2011 to EPA and another 42 waterbodies in its semi-annual submittal on December 8, 2011. Table 1

shows a breakdown of the total number of water bodies assessed, the method by which they were assessed, and a count of how many of these impaired water bodies are covered by a TMDL.

Table 1 Assessments Submitted in Permit Year 9

| Submittal | # of Water Bodies Assessed | IC Method Assessments | TMDL Assessments | # of Water Bodies Covered by TMDLs ¹ |
|---------------------|----------------------------|-----------------------|------------------|---|
| June 8, 2011 | 34 | 13 | 21 | 24 |
| December 8, 2011 | 42 | 37 | 5 | 9 |
| Permit Year 9 Total | 76 | 50 | 26 | 33 |

In Permit Year 8, 45 impaired waters with TMDLs were submitted, and this year 33 impaired waters with TMDLs were submitted. The 78 impaired waters with TMDLs assessed to date keep MassDOT on track to meet the commitment made to review approximately 20% of impaired waters in watersheds with TMDLs each year. The target number of impaired waters with TMDLs to review each year is about 41.

At the beginning of Permit Year 9, MassDOT's consultants performing the assessments included preliminary conceptual designs of BMPs where reductions in effective impervious cover or pollutant loading were recommended. However, as projects progressed to design and construction, it became clear that there were too many site-specific unknowns (e.g. survey, site-specific soils, infiltration rates, etc.) to provide effective conceptual recommendations prior to the final design of the BMPs. In some cases, further site investigation determined that the BMPs included in the preliminary assessment were not optimal. Therefore, the December submittal included assessments with recommended conceptual BMPs as well as progress report assessments which only identify a pollutant reduction or IC target. MassDOT and its consultants then use the progress report and reduction targets to select and design BMPs. Following the selection of BMPs, MassDOT will update the progress reports and submit completed assessments that include the final designs of proposed BMPs.

2.1.1 BMP 7R, TMDL Watershed Review

Of the 76 assessments completed in the past year, 26 were assessed using BMP 7R, TMDL Watershed Review. This BMP utilizes the TMDL Method which has been developed exclusively for assessing discharges to impaired waterbodies with TMDLs that address pollutants typically found in highway stormwater runoff. These pollutants include, but are not limited to, total nitrogen (TN), total phosphorus (TP), total suspended solids (TSS), and zinc (Zn). See Section 4.0 for more details on the assessments under BMP 7R and a listing of the assessments in Table 2.

¹ Water bodies with TMDLs were typically assessed using the TMDL Method (BMP 7R). Some water bodies with TMDLs were impaired for additional pollutants that the TMDL did not address or the TMDL pollutant was unrelated to stormwater runoff. These water bodies were assessed using the IC Method (BMP 7U).

2.1.2 BMP 7U, Water Quality Impaired Waters Assessment and Mitigation Plan

Of the 76 assessments completed in the past year, 50 were assessed using BMP 7U, Water Quality Impaired Waters Assessment and Mitigation Plan. This BMP utilizes the IC Method (MassDOT's Application of Impervious Cover Method in BMP 7U, 2011), which has been developed from USEPA's IC Method². MassDOT's application of the IC Method uses the percent of IC in a watershed as a surrogate for storm water pollutant loading. The method can be applied to determine whether a water body is likely to be impaired due to storm water or if other sources of pollutants are more likely to be the cause of the impairment. MassDOT further evaluates subwatersheds of impaired waters with greater than 9% IC as these waters are more likely to be impaired due to storm water runoff. For special circumstances, MassDOT will assess an impaired waterbody even if its subwatershed is less than 9% IC. This is exemplified for the Southwest Branch Housatonic River which has less than 9% IC in its subwatershed but flows adjacent to MassDOT Route 20 in Pittsfield. See Section 4.0 for more details on the assessments under BMP 7U and a listing of the assessments in Table 3.

2.2 Stormwater BMPs under the Programmed Projects Initiative

MassDOT has included stormwater BMPs in recent contracts for programmed projects that discharge stormwater runoff to impaired waters. Information regarding stormwater BMPs added to these projects is identified through water quality data forms submitted to MassDOT. MassDOT employees and consultants have been completing water quality data forms for regularly scheduled (programmed) construction projects. Through the water quality data forms initiative, MassDOT has returned more than 230 water quality data forms this year, 141 at the 25% design phase and 91 forms at the 75% design phase. MassDOT has identified a total of 99 construction projects that are potentially affecting an impaired water body. These water quality data forms serve as a tracking and prompting tool, effectively alerting project proponents to the need for pollutant specific upgrades to the Stormwater management System.

This effort extends beyond roadway and bridge reconstruction projects, to include resurfacing projects that have traditionally been less invasive. MassDOT designers included stormwater BMPs in the I-395 resurfacing contract for roads that drain to Lowe's Pond (see the Lowes Pond Summary Sheet for project example). Stormwater retrofits were also constructed as part of a Route 2 resurfacing project in Leominster, adjacent to the North Nashua River. MassDOT consultants have performed assessments for five impaired waters as part of highway resurfacing projects (one is a TMDL Method assessment and four are IC Method assessments). See Table 2 and Table 3 for the complete listing.

3.0 Planned Activities for Permit Year 10

MassDOT will continue to implement the Impaired Waters Program in Permit Year 10 and continue to improve upon its procedures and reporting. As stormwater BMPs proceed to design and construction, MassDOT will work toward capturing the whole project's impact on an impaired waterbody by gathering information on the number of impervious acres before and after the project is completed and the effective reduction in pollutant loading or IC area that constructed stormwater BMPs provide.

MassDOT will provide semi-annual reports to EPA on June 8, 2012 and December 8, 2012.

² Massachusetts Department of Transportation (MassDOT). (2011). Description of MassDOT's Application of Impervious Cover Method in BMP 7U (MassDOT Application of IC Method).

3.1 BMP 7R, TMDL Watershed Review

MassDOT will continue to assess waterbodies under BMP 7R and will incorporate new TMDLs into future assessments under the Impaired Waters Program as they are finalized. MassDOT's aims to assess 44 impaired waters with TMDLs in Permit Year 10.

MassDOT will continue to be an active participant, with EPA and MADEP, in developing TMDLs that may impact MassDOT's Impaired Waters Program. Additionally, MassDOT will provide public comment on draft TMDLs as appropriate.

3.2 BMP 7U, Water Quality Impaired Waters Assessment and Mitigation Plan

MassDOT will continue to assess waterbodies under BMP 7U. MassDOT aims to assess more than 137 waterbodies each year, including in upcoming Permit Year 10, to ensure they are on track to meet the commitment of assessing all waterbodies within a 5-year time frame.

4.0 Impaired Waters Program Permit Year 9 Details

MassDOT has expended significant resources and made commendable progress on performing assessments, designing water quality BMPs that will provide pollutant treatment, and innovatively identifying funding resources to construct the stand alone projects.

4.1 Assessments

MassDOT's consultants have submitted 76 assessments of waterbodies that potentially receive stormwater runoff from MassDOT urban area roads to EPA as part of quarterly (June 8, 2011) and semi-annual (December 8, 2011) submittals. Twenty-six of these assessments were for roads within TMDL watersheds and were assessed under BMP 7R TMDL Method, and of these, three identified a target pollutant reduction. For one of these assessments that identified a target, conceptual BMPs were identified to meet the target reductions to the extent practicable within site constraints and the other two were forwarded to design contractors for review and design of BMPs to meet the target to the extent practicable. The remaining assessments determined that existing conditions met the target TMDL; MassDOT urban road runoff did not discharge to the waterbody; or the impairment was unrelated to stormwater. Therefore, these remaining assessments did not recommend further action.

The remaining 50 assessments were reviewed under BMP 7U IC Method, and of these, fourteen assessments identified a target impervious cover reduction. For three of these assessments that identified a target, conceptual BMPs were identified to meet the target reductions to the extent practicable within site constraints. The other 11 assessments were forwarded to design contractors for review and design of BMPs to meet the target to the extent practicable. The remaining assessments determined that MassDOT urban road runoff did not discharge to the waterbody; the area that did drain was so minor that the runoff was determined to be de minimus; the watershed contained less than 9% impervious cover and thus the impairment is probably not stormwater related; or the impairment was unrelated to stormwater. Therefore, these remaining assessments did not recommend further action. Table 2 provides greater detail on the 26 waterbodies reviewed under BMP 7R. Similarly, Table 3 provides greater detail on the 50 waterbodies reviewed under BMP 7U.

MassDOT's consultants have also continued to perform assessments since the December's submittal to EPA. Table 2 and Table 3 summarize the other 18 assessments that were completed between the December 8, 2011 EPA submittal and the end of March 2012. These assessments will be included in the June 8, 2012 semi-annual submittal to EPA.

MassDOT consultants also completed review of roadways draining to receiving waters with pathogen related impairments in Permit Year 9. Some of the assessments submitted to EPA identified illicit discharge detection and elimination (IDDE) review necessary to address the pathogen impairment and indicated that the IDDE review would be completed at a later time. These reviews were performed this year and are summarized in Table 4.

4.2 Design

Once assessments are complete, and if they identify that additional pollutant reduction is necessary, the assessments are shared with a designer. The designer is then responsible for more detailed review of the MassDOT urban area roads that directly drain to the impaired receiving water and developing design plans for stormwater BMPs to provide water quality treatment. The designer identifies site constraints (soils, wetlands, etc) that impact the locations where BMPs could be constructed and then attempts to design BMPs to meet the target impervious cover or pollutant load reduction identified in the assessment. If site constraints allow for the construction of additional BMPs, then the designer is responsible for developing design plans and permitting the construction of the retrofit project.

MassDOT retained two firms to provide design services to the Impaired Waters program. MassDOT used the same designers to provide design plans for retrofit assessments and resurfacing programmed projects. The summary tables below include stormwater BMPs designed and implemented under the Retrofit Initiative and Programmed Project Initiative.

Table 5 summarizes the total pollutant loading reduction from BMPs designed in the last year.

Table 6 summarizes the status of designs by the design contractors.

Table 7 summarizes the proposed BMPs that have been designed for receiving waters within TMDL watersheds. The summary includes the MassDOT target pollutant reduction and if the existing and proposed BMPs fully met the target reduction.

Table 8 lists the water bodies with target IC reductions and summarizes the estimated effective IC reduction achieved by existing and designed BMPs.

Table 9 provides an overview of the IC target and progress towards meeting the reduction through design of proposed BMPs for receiving waters without TMDLs, where the impervious cover method was used for assessment. Table 9 also provides a more detailed summary of the proposed BMPs that have been designed. The table indicates the target IC reduction, the reduction provided by existing BMPs and the reduction provided by the proposed BMPs. BMPs included in designs this year

are estimated to remove 64.42 acres of effective impervious cover from the watersheds of impaired waterbodies³.

³ This estimate includes Lowes Pond (MA42034), Burncoat Park Pond (MA51012) and Blackstone River (MA51-03), which were assessed in Permit Year 8 but had BMPs in design during Permit Year 9.

Table 2 Impaired Assessments under BMP 7R (TMDL Method) Completed in Permit Year 9

| Waterbody ID | Waterbody Name | Waterbody Impairment** | TMDL Identifier | TMDL Parameter | Impairment Addressed | Semi-Annual Submittal Date |
|--|------------------|---|------------------|---------------------------------------|---|----------------------------|
| Existing Conditions do Not Meet Target TMDL; BMPs Recommended | | | | | | |
| MA51039 | Dorothy Pond | Non-native aquatic macrophyte species, Turbidity | 4/2002- CN70.1 | Phosphorus | Non-native aquatic macrophyte species, Turbidity | 12/8/2011 |
| Existing Conditions do Not Meet Target TMDL (Progress Report Submittal) | | | | | | |
| MA35026 | Greenwood Pond | Aquatic plants (Macrophytes) | 5/2003- CN123.2 | Phosphorus | Aquatic plants (Macrophytes) | Not Yet Submitted |
| MA51073 | Indian Lake | Aquatic plants (Macrophytes), Dissolved oxygen | 5/2002- CN116.0 | Phosphorus | Aquatic plants (macrophytes), Dissolved Oxygen | Not Yet Submitted |
| MA51087 | Leesville Pond | Nutrients, Organic enrichment/low DO, (Exotic species*) | 4/2002- CN70.1 | Nutrients, Organic enrichments/low DO | Nutrients, Organic enrichment/low DO, (Exotic species*) | 12/8/2011 |
| MA51156 | Smiths Pond | Turbidity | 4/2002- CN70.1 | Phosphorus | Turbidity | 12/8/2011 |
| Existing Conditions Meet Target TMDL; No Further Action Recommended | | | | | | |
| MA51043 | Eddy Pond | Noxious aquatic plants, (Exotic species)* | 4/2002- CN70.1 | Noxious aquatic plants | Noxious aquatic plants, (Exotic species)* | 12/8/2011 |
| MA96-49 | Frost Fish Creek | Nutrients, Pathogens | 5/2007- CN244.0 | Total nitrogen, Bacteria | Pathogens, Total nitrogen | 6/8/2011 |
| MA96-51 | Muddy Creek | Nutrients, Pathogens | 5/2007- CN244.0 | Total nitrogen, Bacteria | Pathogens, Total nitrogen | 6/8/2011 |
| MA96-77 | Pleasant Bay | Nutrients | 5/2007- CN244.0 | Total nitrogen | Nutrients | 6/8/2011 |
| MA96-50 | Ryder Cove | Nutrients, Pathogens | 5/2007- CN244.0 | Total nitrogen, Bacteria | Pathogens, Total nitrogen | 6/8/2011 |
| No DOT Discharge; No Further Action Recommended | | | | | | |
| MA35018 | Depot Pond | Aquatic plants (Macrophytes) | 5/2003- CN123.2 | Phosphorus | N/A - No Discharge | Not Yet Submitted |
| MA96068 | Duck Pond | Metals | 10/2007- NEIWPCC | Mercury | N/A - No Discharge | 6/8/2011 |
| MA96070 | Dyer Pond | Metals | - | Mercury | N/A - No Discharge | 6/8/2011 |
| MA96114 | Great Pond | Metals | 10/2007- NEIWPCC | Mercury | N/A - No Discharge | 6/8/2011 |
| MA96117 | Great Pond | Metals | 10/2007- NEIWPCC | Mercury | N/A - No Discharge | 6/8/2011 |
| MA96126 | Hamblin Pond | Metals | 10/2007- NEIWPCC | Mercury | N/A - No Discharge | 6/8/2011 |
| MA96157 | Johns Pond | Metals | 10/2007- NEIWPCC | Mercury | N/A - No Discharge | 6/8/2011 |
| MA96179 | Long Pond | Metals | - | Mercury | N/A - No Discharge | 6/8/2011 |

| Waterbody ID | Waterbody Name | Waterbody Impairment** | TMDL Identifier | TMDL Parameter | Impairment Addressed | Semi-Annual Submittal Date |
|---|------------------|--|-----------------|----------------|----------------------|----------------------------|
| MA96194 | Mashpee Pond | Metals | 10/2007-NEIWPC | Mercury | N/A - No Discharge | 6/8/2011 |
| MA96-31 | Pamet River | Pathogens | 8/2009- CN252.0 | Pathogens | N/A - No Discharge | 6/8/2011 |
| MA96244 | Peters Pond | Metals | 10/2007-NEIWPC | Mercury | N/A - No Discharge | 6/8/2011 |
| MA96-40 | Popponeset Bay | Nutrients | 4/2006- CN217.0 | Nutrients | N/A - No Discharge | 6/8/2011 |
| MA96-39 | Popponeset Creek | Pathogens | 8/2009- CN252.0 | Pathogens | N/A - No Discharge | 6/8/2011 |
| MA96268 | Ryder Pond | Metals | - | Mercury | N/A - No Discharge | 6/8/2011 |
| MA51142 | Salisbury Pond | Non-native aquatic macrophyte species, turbidity | 5/2002- CN114.0 | Phosphorus | N/A - No Discharge | Not Yet Submitted |
| MA96298 | Slough Pond | Metals | - | Mercury | N/A - No Discharge | 6/8/2011 |
| MA96302 | Snake Pond | Metals | 10/2007-NEIWPC | Mercury | N/A - No Discharge | 6/8/2011 |
| MA96303 | Snow Pond | Metals | - | Mercury | N/A - No Discharge | 6/8/2011 |
| MA96346 | Wakeby Pond | Metals | 10/2007-NEIWPC | Mercury | N/A - No Discharge | 6/8/2011 |
| Impairment Unrelated to Storm Water; No Further Action Recommended | | | | | | |
| MA61011 | Lewin Brook Pond | Metals | 10/2007-NEIWPC | Mercury | N/A - No Discharge | 12/8/2011 |

**Assessments submitted on and prior to 12/8/2011 were based on the impairments listed in the final Year 2008 303d list. The draft Year 2010 303d list was also reviewed during these assessments. The assessment for Dorothy Pond (MA51039) was based on the final Year 2010 303d list since it had been finalized at the time of the assessment.

Assessments submitted after 12/8/2011 were based on the impairments listed in the final Year 2010 303d list. The final Year 2008 303d list was also reviewed during these assessments.

Note: Refer to <http://www.mhd.state.ma.us/default.asp?pgid=content/environ/envNPDES&sid=about> for full Impaired Waters submittals.

Table 3 Impaired Assessments under BMP 7U (IC Method) Completed in Permit Year 9

| Waterbody ID | Waterbody Name | Waterbody Impairment** | Semi-Annual Submittal Date |
|--|-------------------|--|----------------------------|
| Impervious Cover > 9%; Existing Conditions do Not Meet Target IC; BMPs Recommended | | | |
| MA84B-02 | Beaver Brook | Nutrients, pH, Organic enrichment/low DO, Pathogens, Suspended solids | 6/8/2011 |
| MA51-16 | Dark Brook | Cause Unknown | 12/8/2011 |
| MA84038 | Mill Pond | Noxious aquatic plants | 6/8/2011 |
| Impervious Cover > 9%; Existing Conditions and Proposed Conditions in Resurfacing Memo do Not Meet Target IC (Progress Report) | | | |
| MA62-14 | Robinson Brook | Cause unknown, Other habitat alterations | Not Yet Submitted |
| MA62-39 | Rumford River | Cause unknown, Pesticides, Siltation, Other habitat alterations, Pathogens | Not Yet Submitted |
| MA51-08 | Unnamed Tributary | Nutrient/eutrophication bio indicators, (Physical substrate habitat alterations*), Other, Aquatic plants (macrophytes), Fecal coliform, Ammonia (un-ionized), Foam/flocs/scum/oil slicks, Turbidity, Taste and odor, Sedimentation/siltation, (Debris/floatables/trash*) | Not Yet Submitted |
| Impervious Cover > 9%; Existing Conditions do Not Meet Target IC (Progress Report) | | | |
| MA71-01 | Aberjona River | Cause Unknown, Metals, Unionized Ammonia, Nutrients, Organic enrichment/Low DO, (Other habitat alterations*), Pathogens | 12/8/2011 |
| MA71-04 | Alewife Brook | Metals, Nutrients, Organic enrichment/Low DO, Pathogens, Oil and grease, Taste, odor and color, (Objectionable deposits*) | 12/8/2011 |
| MA61-04 | Cole River | Nutrients, Organic enrichment/Low DO, Pathogens, Chlorophyll a | 12/8/2011 |
| MA93032 | Hawkes Pond | Turbidity | 12/8/2011 |
| MA51-01 | Kettle Brook | Cause Unknown, Nutrients, Organic enrichment/Low DO, (Flow alteration*), Pathogens, Debris/Floatables/Trash | 12/8/2011 |
| MA61-02 | Lee River | Pathogens, Taste, odor and color, Noxious aquatic plants, (Objectionable deposits*), Nitrogen (Total), Oxygen, Dissolved | 12/8/2011 |
| MA72-14 | Mine Brook | Habitat Assessment (Streams), Temperature, Water | 12/8/2011 |
| MA74-08 | Monatiquot River | Cause Unknown, Organic enrichment/Low DO, (Other habitat alterations*), Pathogens | 12/8/2011 |
| MA93-34 | Saugus River | Excess Algal Growth, Fish-Passage Barrier, (Physical substrate habitat alterations*), Fecal Coliform, Turbidity, Nitrogen (Total), Phosphorus (Total), aquatic plants (Macrophytes) | 12/8/2011 |
| MA93-35 | Saugus River | (Low flow alterations*), Fecal Coliform, (Alteration in stream-side or littoral vegetative covers) | 12/8/2011 |
| MA71040 | Spy Pond | Pesticides, Nutrients, Organic enrichment/Low DO, Noxious aquatic plants, (Exotic species*) | 12/8/2011 |
| MA34-19 | Stony Brook | (Non-native aquatic plants*), Turbidity, Escherichia coli | Not Yet Submitted |
| MA62-47 | Wading River | Fecal coliform, Dissolved oxygen | Not Yet Submitted |

| Waterbody ID | Waterbody Name | Waterbody Impairment** | Semi-Annual Submittal Date |
|---|--------------------------------------|--|----------------------------|
| Impervious Cover < 9%; MassDOT Will Look Into Implementing BMPs | | | |
| MA21-17 | Southwest Branch Housatonic River | Fecal coliform, Sedimentation/siltation | Not Yet Submitted |
| Impervious Cover > 9%; Existing Conditions and Proposed Conditions in Resurfacing Meet Target IC; No Further Action Recommended | | | |
| MA62134 | Norton Reservoir | (Pentachlorophenol (PCP)*), Excess algal growth, Phosphorus (total), (Non-native aquatic plants*), Dioxin (including 2,3,7,8-TCDD), Turbidity | Not Yet Submitted |
| Impervious Cover > 9%; Existing Conditions Meet Target IC; No Further Action Recommended | | | |
| MA95113 | Noquochoke Lake | Enterococcus, Aquatic plants (macrophytes), PCB in fish tissue, Turbidity, Mercury in fish tissue, (Non-native aquatic plants*) | Not Yet Submitted |
| MA95170 | Noquochoke Lake | (Non-native aquatic plants*), Turbidity, PCB in fish tissue, mercury in fish tissue, Aquatic plants (macrophytes) | Not Yet Submitted |
| MA95171 | Noquochoke Lake | PCB in fish tissue, Mercury in fish tissue, Turbidity, Aquatic plants (macrophytes), (Non-native aquatic plants*) | Not Yet Submitted |
| De minimis; No Further Action Recommended | | | |
| MA51033 | Curtis Ponds | Siltation, Noxious aquatic plants | 12/8/2011 |
| No DOT Discharge; No Further Action Recommended | | | |
| MA51004 | Auburn Pond | Noxious aquatic plants, (Exotic species)* | 12/8/2011 |
| MA93-30 | Beaverdam Brook | Oxygen, Dissolved, Fecal Coliform | 12/8/2011 |
| MA62029 | Cabot Pond | Pesticides | 12/8/2011 |
| MA96-47 | Crows Pond | Nutrients | 6/8/2011 |
| MA51032 | Curtis Ponds | Noxious aquatic plants, (Exotic species)* | 12/8/2011 |
| MA62075 | Fulton Pond | Pesticides | 12/8/2011 |
| MA73037 | Ganawatte Farm Pond | Noxious aquatic plants, Organic enrichment/Low DO, Turbidity | 12/8/2011 |
| MA62077 | Gavins Pond | Exotic species | 12/8/2011 |
| MA62084 | Gushee Pond | Exotic species | 12/8/2011 |
| MA96-67 | Herring River | Metals, pH | 6/8/2011 |
| MA62091 | Hodges Pond | Pesticides | 12/8/2011 |
| MA62131 | Lake Nippenicket | Metals | 12/8/2011 |
| MA93060 | Lake Quannapowitt | Excess Algal Growth, Non-native aquatic plants, Turbidity, DDT | 12/8/2011 |
| MA62166 | Lake Sabbatia | Organic Enrichment/ Low DO, exotic species | 12/8/2011 |

| Waterbody ID | Waterbody Name | Waterbody Impairment** | Semi-Annual Submittal Date |
|---|------------------------|--|----------------------------|
| MA34040 | Leaping Well Reservoir | PCB in fish tissue, (Non-native aquatic plants*) | Not Yet Submitted |
| MA82072 | Long Pond | Nutrients, Organic enrichment/Low DO, Noxious aquatic plants | 6/8/2011 |
| MA96188 | Lower Mill Pond | Nutrients, Noxious aquatic plants, Turbidity | 6/8/2011 |
| MA84081 | Mill Pond | Noxious aquatic plants | 6/8/2011 |
| MA93-31 | Mill River | Oxygen, Dissolved, Fecal Coliform, Total Suspended solids (TSS), Turbidity | 12/8/2011 |
| MA61-07 | Mount Hope Bay | Nutrients, Organic enrichment/Low DO, Thermal modifications, Pathogens, Chlorophyll a, Fishes Bioassessments | 12/8/2011 |
| MA34066 | Oxbow | Turbidity, (Non-native aquatic plants*) | Not Yet Submitted |
| MA73034 | Neponset Reservoir | Exotic Species, Turbidity, Noxious Aquatic Plants | 12/8/2011 |
| MA93056 | Pillings Pond | Chlorophyll, Dissolved Oxygen saturation, Excess Algal Growth, Secchi disk transparency, Phosphorus (Total), Oxygen, Dissolved | 12/8/2011 |
| MA96257 | Red Lily Pond | Nutrients, Pathogens, Noxious aquatic plants | 6/8/2011 |
| MA96-75 | Round Cove | Nutrients | 6/8/2011 |
| MA96277 | Santuit Pond | Nutrients, Noxious aquatic plants | 6/8/2011 |
| MA96289 | Sheep Pond | Metals, Organic enrichment/Low DO | 6/8/2011 |
| MA51160 | Stoneville Pond | Noxious aquatic plants, (Exotic species)* | 12/8/2011 |
| MA96324 | Upper Mill Pond | Nutrients, Organic enrichment/Low DO, Noxious aquatic plants, Turbidity | 6/8/2011 |
| MA62112 | Vandys Pond | Exotic species | 12/8/2011 |
| MA96331 | Walkers Pond | Nutrients, Noxious aquatic plants, Turbidity | 6/8/2011 |
| MA62205 | Watson Pond | Turbidity, exotic species | 12/8/2011 |
| MA62228 | Whittenton Impoundment | Exotic Species | 12/8/2011 |
| MA62213 | Winnecunnet Pond | Exotic species | 12/8/2011 |
| <9% Impervious Cover; No Further Action Recommended | | | |
| MA61-01 | Lee River | Nutrients, Organic enrichment/Low DO, Pathogens | 12/8/2011 |
| Impairment Unrelated to Storm Water; No Further Action Recommended | | | |
| MA61-03 | Cole River | (Fish-Passage Barrier*) | 12/8/2011 |
| MA34124 | Log Pond Cove | Excess algal growth, (Non-native aquatic plants*) | Not Yet Submitted |
| MA21083 | Pontoosuc Lake | Mercury in fish tissue, (Eurasian water milfoil, Myriophyllum spicatum*), (Non-native aquatic plants*), DDT | Not Yet Submitted |

| Waterbody ID | Waterbody Name | Waterbody Impairment** | Semi-Annual Submittal Date |
|---------------------|-----------------------|-------------------------------|-----------------------------------|
| MA61-05 | Quequechan River | Other habitat Alterations | 12/8/2011 |

**Assessments submitted on and prior to 12/8/2011 were based on the impairments listed in the final Year 2008 303d list. The draft Year 2010 303d list was also reviewed during these assessments. The assessments for Fulton Pond (MA62075), Gavins Pond (MA62077), Hodges Pond (MA62091) Monaquot River (MA74-08), Neponset Reservoir (MA73034), Vandys Pond (MA62112) and Whittenton Impoundment (MA62228) were based on the final Year 2010 303d list since it had been finalized at the time of the assessment. Assessments submitted after 12/8/2011 were based on the impairments listed in the final Year 2010 303d list. The final Year 2008 303d list was also reviewed during these assessments.

Note: Refer to <http://www.mhd.state.ma.us/default.asp?pgid=content/environ/envNPDES&sid=about> for full Impaired Waters submittals.

Table 4 Assessments Completed under IDDE Program in Permit Year 9

| Waterbody ID | Waterbody Name | Town | MassDOT Road | Approximate Road Miles Surveyed | Features with Flow | Justification | Results |
|--------------|------------------|--------------------|---------------------------------|---------------------------------|--------------------|-------------------------------|----------------------|
| MA51-03 | Blackstone River | Worcester/Millbury | Route 146/Route 20/Ramp to I-90 | 8 | 5 | Low surfactants/Low Fluoride | Natural water source |
| MA72-01 | Charles River | Milford | I-495 and Route 85 ramp | 2 | 2 | Low surfactants/ Low Fluoride | Natural water source |
| MA41-01 | Quinebaug River | Sturbridge | Route 20 (Main Street) | 1 | 1 | Low surfactants/Low Fluoride | Natural water source |
| MA96-49 | Frost Fish Creek | Chatham | Route 28 | 2* | 0 | - | - |
| MA96-51 | Muddy Creek | Chatham | Route 28 | 2* | 0 | - | - |
| MA96-50 | Ryder Cove | Chatham | Route 28 | 2* | 0 | - | - |

* A single 2-mile stretch of Route 28 was surveyed for the Frosh Fish Creek, Muddy Creek and Ryder Cove assessments.

Table 5 TMDL Loading Reduction by BMPs Designed in Permit Year 9

| Pollutant | Annual Reduction Provided by BMPs Designed in Permit Year 9 (lb/ yr) |
|------------------|---|
| Phosphorus | 29.69 |
| Turbidity | 0 |
| Nutrients | 16.77 |

Table 6 Status of Completed Assessments Submitted to Designers

| Semi-Annual Submittal Date | Waterbody ID | Waterbody Name | Location | MassDOT District | Remaining Target IC or Pollutant Reduction to Meet Target (ac or lb/yr)* | Date Submitted to Designer | Progress (Design, Construction or Complete) | % Design Complete | Anticipated Date of 100% Design Completion | Post-Construction IC or Pollutant Reduction Estimate [□] (ac or lb/yr) |
|----------------------------|--------------|------------------|----------------------------------|------------------|--|----------------------------|---|-------------------|--|---|
| Programmed Projects | | | | | | | | | | |
| 3/8/2011 | MA42034 | Lowes Pond | Oxford | 3 | 40.4 lb/yr | 1/10/2011 | Construction | 100% | 6/23/2011 | N/A |
| N/A | MA82B-14 | Nashoba Brook*** | Littleton/Boxborough/Acton | 3 | Additional removal not required ^{□□} | 10/11/2011 | Construction | 100% | 3/5/2012 | N/A |
| Retrofit Projects | | | | | | | | | | |
| 12/8/2011 | MA51156 | Smiths Pond | Leicester | 3 | 2.7 lbs/yr TP | 10/1/2011 | None | None | None | N/A |
| 12/8/2011 | MA71-04 | Alewife Brook | Arlington | 4 | 0.9 ac IC | 11/1/2011 | Pre-Design | None | 6/1/2012 | N/A |
| 12/8/2011 | MA51039 | Dorothy Pond | Millbury | 3 | 23 lb/yr TP | 8/1/2012 | Pre-Design | None | 10/1/2012 | N/A |
| 12/8/2011 | MA74-08 | Monatiquot River | Braintree | 6 | 16.6 ac IC | 2/1/2012 | Pre-Design | None | 10/1/2012 | N/A |
| 12/8/2011 | MA71040 | Spy Pond | Arlington | 4 | 28.1 ac IC | 11/1/2011 | Pre-Design | None | 8/1/2012 | N/A |
| 12/8/2011 | MA71-01 | Aberjona River | Reading, Woburn, and Winchester | 4 | 40.2 ac IC | 11/14/2011 | Design | 25% | 7/20/2012 | N/A |
| 6/8/2011 | MA84B-02 | Beaver Brook | Littleton and Westford | 3 | 10.2 ac IC | 7/1/2011 | Design | 25/75% | 4/1/2012 | N/A |
| 12/8/2011 | MA61-04 | Cole River | Swansea/Somerset | 5 | 10.4 ac IC | 12/27/2011 | Design | 15% | 9/21/2012 | N/A |
| 12/8/2011 | MA51-16 | Dark Brook | Auburn | 3 | 20.2 ac IC | 10/15/2011 | Design | Pre-25% | 7/1/2012 | N/A |
| 12/8/2011 | MA93032 | Hawkes Pond | Lynnfield and Saugus | 4 | 5.6 ac IC | 11/30/2011 | Design | 25% | 8/31/2012 | N/A |
| 12/8/2011 | MA51-01 | Kettle Brook | Leicester, Worcester, and Auburn | 3 | 6.2 ac IC | 10/1/2011 | Design | Unknown | 6/1/2012 | N/A |
| 12/8/2011 | MA61-02 | Lee River | Swansea/Somerset | 5 | 19.2 ac IC | 12/27/2011 | Design | 15% | 10/5/2012 | N/A |
| 12/8/2011 | MA51087 | Leesville Pond | Auburn and Worcester | 3 | 18 lb/yr TP | 10/1/2011 | Design | 25/75% | 6/1/2012 | N/A |
| 6/8/2011 | MA84038 | Mill Pond | Littleton | 3 | 0.3 ac IC | 7/1/2011 | Design | 25/75% | 4/1/2012 | N/A |

| Semi-Annual Submittal Date | Waterbody ID | Waterbody Name | Location | MassDOT District | Remaining Target IC or Pollutant Reduction to Meet Target (ac or lb/yr)* | Date Submitted to Designer | Progress (Design, Construction or Complete) | % Design Complete | Anticipated Date of 100% Design Completion | Post-Construction IC or Pollutant Reduction Estimate [□] (ac or lb/yr) |
|----------------------------|---------------------------------|--------------------|--|------------------|--|----------------------------|---|-------------------|--|---|
| N/A | MA95113; MA95170; MA95171 | Noquochoke Lake | Dartmouth | 5 | Additional removal not required [∞] | 1/10/2012 | Design | 25% | 7/6/2012 | N/A |
| 12/8/2011 | MA93-34 | Saugus River | Wakefield and Lynnfield | 4 | 6.5 ac IC | 11/30/2011 | Design | 25% | 9/14/2012 | N/A |
| 12/8/2011 | MA93-35 | Saugus River | Wakefield, Lynnfield, and Saugus | 4 | 9.0 ac IC | 11/30/2011 | Design | 25% | 9/28/2012 | N/A |
| N/A | MA62-47 | Wading River | Mansfield | 5 | Additional removal not required [∞] | 4/30/2011 | Design | 25/75% | 4/1/2012 | N/A |
| 12/8/2010 | MA51-03 | Blackstone River | Worcester, Millbury, Sutton, Grafton, Northbridge, Uxbridge, Millville, Blackstone | 3 | 0.9 ac IC | 2/1/2011 | Construction | 100% | Design Complete | N/A |
| 12/8/2010 | MA51012 | Burncoat Park Pond | Worcester | 3 | 0.87 ac IC | 1/10/2011 | Construction | 100% | 3/28/2012 | N/A |

* Effective IC reduction or pollutant loading reduction required to meet the target after taking into account the reduction provided by existing BMPs.

** The Southwest Branch Housatonic River subwatershed is comprised of less than 9% IC. However, MassDOT will look into implementing BMPs to treat direct MassDOT storm water runoff to this water body.

*** Nashoba Brook was not assessed in an Impaired Assessment. Resurfacing Recommendations were submitted for Nashoba Brook.

□ Reduction provided by constructed BMPs.

∞ Additional effective IC removal is not required in the subwatersheds of Noquochoke Lake and Wading River and additional TP removal is not required in the subwatershed of Nashoba Brook. However, BMPs will be implemented to treat MassDOT storm water runoff prior to discharging to these water bodies.

Note: Refer to <http://www.mhd.state.ma.us/default.asp?pgid=content/environ/envNPDES&sid=about> for full Impaired Waters submittals.

Table 7 Summary of BMPs included in Designs completed in Permit Year 9 for Assessments under BMP 7R (TMDL Method)

| Waterbody Name | Waterbody ID | TMDL Pollutant | MassDOT Pollutant Loading* (lb/yr) | Target Reduction (lb/yr) | Existing BMPs | | | Designed BMPs | | | Estimated Total Reduction Achieved [□] (lb/yr) |
|--|--------------|----------------|------------------------------------|--------------------------|--|---------------------------------------|--|--|-------------------------------------|---|---|
| | | | | | BMP | MassDOT Watershed Area Treated (ac)** | Pollutant Loading Reduction Provided (lb/yr) | BMP | MassDOT Watershed Area Treated (ac) | Pollutant Loading Reduction Provided (lb/yr)*** | |
| Resurfacing Programmed Projects | | | | | | | | | | | |
| Lowes Pond | MA42034 | Phosphorus | 92.2 | 71.3 | 4 Stormwater Wetlands | 14 IC, 31.2 P | 30.9 | 13 Infiltration Basins | 8.24 IC, 14.01 P | 20.6 | 51.5 |
| Nashoba Brook ^{□□} | MA82B-14 | Nutrients | | | 2 Wet Detention Basins, 1 Vegetated Filter Strip | 4.14 IC, 0.08 P | 0.84 | 5 Infiltration Swales, 4 Infiltration Basins | 12.04 IC, 10.98 P | 16.77 | 17.6 |
| Retrofit Projects | | | | | | | | | | | |
| Dorothy Pond | MA51039 | Phosphorus | 47.0 | 23.0 | - | - | - | Unknown. BMPs in Pre-Design Stage | | | Unknown |
| Leesville Pond | MA51087 | Phosphorus | 22.0 | 18.0 | - | - | - | 6 Infiltration Swales | 5.55 IC, 3.46 P | 9.09 | 9.09 |

* Loading rate before existing BMPs are taken into account.

** IC=impervious cover, P=pervious

*** Estimated post-construction pollutant loading reduction that will be provided by designed BMPs. These values may change due to site constraints.

□ Total estimated pollutant loading reduction that will be provided by existing and designed BMPs post-construction.

□□ Nashoba Brook was not assessed in an Impaired Assessment. Resurfacing Recommendations were submitted for Nashoba Brook.

Note: Refer to <http://www.mhd.state.ma.us/default.asp?pgid=content/environ/envNPDES&sid=about> for full Impaired Waters submittals.

Table 8 Target Impervious Area Reductions from Assessments Developed in Permit Year 9

| Waterbody ID | Waterbody Name | IC Area in Subwatershed (ac) | Directly Draining IC* (ac) | Target IC Reduction (ac) | Effective Directly Draining IC** (ac) | Remaining IC Reduction to Meet Target (ac) | Proposed Effective IC Reduction ¹⁰³ (ac) | Design Effective IC Reduction ^Δ (ac) | Post-Construction Effective IC Reduction ^{ΔΔ} (ac) |
|--|-------------------|------------------------------|----------------------------|--------------------------|---------------------------------------|--|---|---|---|
| BMPs Proposed in Assessment | | | | | | | | | |
| MA84B-02 | Beaver Brook | 246 | 49.4 | 15.5 | 44.1 | 10.2 | 10.8 | 7.21 | - |
| MA51-16 | Dark Brook | 770 | 31.2 | 21.3 | 30.1 | 20.2 | 10.2 | 18.97 | - |
| MA62134 | Norton Reservoir | 415 | 16.6 | 2.9 | 14.7 | 1.0 | 1.5 | Not submitted to Designers | - |
| MA62-14 | Robinson Brook | 163 | 37 | 24.7 | 37.0 | 24.7 | 15.2 | Not submitted to Designers | - |
| MA51-08 | Unnamed Tributary | 3,247 | 124 | 102 | 124 | 102.0 | 14.3 | Not submitted to Designers | - |
| MA84038 | Mill Pond | 580 | 2.2 | 1.0 | 1.5 | 0.3 | 0.3 | 0.68 | - |
| Target Only Assessments; BMPs Will be Developed in Design | | | | | | | | | |
| MA71-01 | Aberjona River | 3,641 | 56.3 | 43.0 | 53.5 | 40.2 | - | 15.06 | - |
| MA71-04 | Alewife Brook | 1,726 | 1.1 | 0.9 | 1.1 | 0.9 | - | 0.34 | - |
| MA61-04 | Cole River | 252 | 20.8 | 10.6 | 20.6 | 10.4 | - | Unknown | - |
| MA93032 | Hawkes Pond | 365 | 21.7 | 8.9 | 18.4 | 5.6 | - | 3.72 | - |
| MA51-01 | Kettle Brook | 1,001 | 20.4 | 7.3 | 19.3 | 6.2 | - | 3.52 | - |
| MA61-02 | Lee River | 405 | 37.8 | 19.2 | 37.8 | 19.2 | - | Unknown | - |
| MA72-14 | Mine Brook | 1,689 | 33.8 | 15.7 | 30.9 | 12.8 | - | Not submitted to Designers | - |
| MA74-08 | Monaquot River | 1,029 | 26.9 | 19.5 | 24.0 | 16.6 | - | Unknown | - |
| MA93-34 | Saugus River | 347 | 13.0 | 6.5 | 13.0 | 6.5 | - | 0.61 | - |
| MA93-35 | Saugus River | 1,011 | 16.0 | 10.1 | 14.9 | 9.0 | - | 2.93 | - |
| MA71040 | Spy Pond | 240 | 38.0 | 28.1 | 38.0 | 28.1 | - | 5.15 | - |
| MA34-19 | Stony Brook | 1,244 | 2.9 | 0.2 | 2.9 | 0.2 | - | Not submitted to Designers | - |
| MA62-47 | Wading River | 136 | 12.3 | 3.8 | 8.58 | 0.1 | - | 1.9 | - |
| Permit Year 9 Sub-Total | | | | | | | 52.3 | | |

* MassDOT IC area directly draining to water body.
 ** MassDOT Effective IC area directly draining to water body, taking into account the effective IC reduction provided by existing BMPs.
 □ Effective IC reduction required to meet the IC target after taking into account the effective IC reduction provided by existing BMPs.
 □□ Effective IC reduction provided by conceptual BMPs.
 Δ Estimated effective IC reduction provided by designed BMPs. These values may change due to site constraints.
 ΔΔ Effective IC reduction provided by constructed BMPs.
 Note: Refer to <http://www.mhd.state.ma.us/default.asp?pgid=content/environ/envNPDES&sid=about> for full Impaired Waters submittals.

Table 9 Summary of BMPs included in Designs Completed in Permit Year 9 for Assessments under BMP 7U (IC Method)

| Water-body Name | Water-body ID | MassDOT Direct IC Watershed Area (ac) | Target IC Reduction (ac) | Existing BMPs | | | Proposed BMPs | | | Estimated Total IC Reduction Achieved (ac) | Full Reduction Achieved? |
|--------------------------|---------------|---------------------------------------|--------------------------|--|--|--------------------------------------|---|--|--------------------------------------|--|---|
| | | | | BMP | MassDOT IC Watershed Area Treated (ac) | Effective IC Reduction Provided (ac) | BMP | MassDOT IC Watershed Area Treated (ac) | Effective IC Reduction Provided (ac) | | |
| Retrofit Projects | | | | | | | | | | | |
| Aberjona River | MA71-01 | 56.3 | 43.0 | Infiltration Basin | 2.9 | 2.8 | 6 Infiltration Swales, 5 Infiltration Basins | 20.37 | 15.06 | 17.86 | No. Site constraints do not allow full reduction. |
| Alewife Brook | MA71-04 | 1.1 | 0.9 | - | - | - | 5 Leaching Catch Basins | 0.36 | 0.34 | 0.34 | No. Site constraints do not allow full reduction. |
| Beaver Brook** | MA84B-02 | 49.4 | 15.5 | 4 Infiltration Basins, 3 Vegetated Filter Strips, 1 Infiltration Swale | 8.74 | 6.12 | 10 Infiltration Swales | 6.45 | 5.04 | 11.16 | No. Site constraints do not allow full reduction. |
| Blackstone River** | MA51-03 | 116 | 69 | Extended Detention Basin | 2.9 | 0.56 | Improvements to existing Extended Detention Basin | 2.9 | 2.61 | 2.61 | No. Site constraints do not allow full reduction. |
| Burncoat Park Pond | MA51012 | 1.8 | 1.3 | Filter Strip/Dry Pond | 0.45 | 0.43 | 1 Infiltration Basin, 1 Detention Basin | 0.96 | 0.82 | 1.25 | No. Site constraints do not allow full reduction. |
| Cole River | MA61-04 | 20.8 | 10.6 | 2 Vegetated Filter Strips | 0.8 | 0.2 | Unknown - BMPs in Pre-Design Stage | | | Unknown | Unknown |

| Water-body Name | Water-body ID | MassDOT Direct IC Watershed Area (ac) | Target IC Reduction (ac) | Existing BMPs | | | Proposed BMPs | | | Estimated Total IC Reduction Achieved (ac) | Full Reduction Achieved? |
|------------------|---------------------------|---------------------------------------|--------------------------|---|--|--------------------------------------|---|--|--------------------------------------|--|---|
| | | | | BMP | MassDOT IC Watershed Area Treated (ac) | Effective IC Reduction Provided (ac) | BMP | MassDOT IC Watershed Area Treated (ac) | Effective IC Reduction Provided (ac) | | |
| Dark Brook** | MA51-16 | 31.2 | 21.3 | 1 Vegetated Filter Strip, 2 Infiltration Basins | 1.02 | 0.87 | 17 Infiltration Swales, 7 Infiltration Basins, 1 Extended Detention Basin | 26.99 | 18.97 | 19.84 | No. Site constraints do not allow full reduction. |
| Hawkes Pond | MA93032 | 21.7 | 8.9 | Infiltration Basin | 4.1 | 3.3 | 6 Infiltration Basins, 1 Infiltration Swale | 4.56 | 3.72 | 7.02 | No. Site constraints do not allow full reduction. |
| Kettle Brook** | MA51-01 | 20.4 | 7.3 | 2 Infiltration Basins | 0.38 | 0.36 | 3 Vegetated Filter Strips, 5 Infiltration Swales, 3 Infiltration Basins | 5.24 | 3.52 | 3.88 | No. Site constraints do not allow full reduction. |
| Lee River | MA61-02 | 37.8 | 19.2 | - | - | - | Unknown - BMPs in Pre-Design Stage | | | Unknown | Unknown |
| Mill Pond** | MA84038 | 2.2 | 1.0 | Infiltration Basin | 0.26 | 0.24 | Infiltration Swale | 0.46 | 0.42 | 0.66 | No. Site constraints do not allow full reduction. |
| Monatiquot River | MA74-08 | 26.9 | 19.5 | 3 Infiltration Basins, 1 Infiltration Swale | 3.36 | 2.9 | Unknown - BMPs in Pre-Design Stage | | | Unknown | Unknown |
| Noquochoke Lake | MA95113; MA95170; MA95171 | 0.74 | 0.03 | 4 Wet Ponds | 4.56 | 1.09 | Infiltration Basin | 1.21 | 0.9 | 1.99 | Yes |
| Saugus River | MA93-34 | 13 | 6.5 | - | - | - | 3 Infiltration Basins, 2 Infiltration Swales | 0.81 | 0.61 | 0.61 | No. Site constraints do not allow full |

| Water-body Name | Water-body ID | MassDOT Direct IC Watershed Area (ac) | Target IC Reduction (ac) | Existing BMPs | | | Proposed BMPs | | | Estimated Total IC Reduction Achieved (ac) | Full Reduction Achieved? reduction. |
|-----------------|---------------|---------------------------------------|--------------------------|--------------------|--|--------------------------------------|---|--|--------------------------------------|--|---|
| | | | | BMP | MassDOT IC Watershed Area Treated (ac) | Effective IC Reduction Provided (ac) | BMP | MassDOT IC Watershed Area Treated (ac) | Effective IC Reduction Provided (ac) | | |
| Saugus River | MA93-35 | 16 | 10.1 | Infiltration Basin | 1.2 | 1.1 | 5 Infiltration Basins | 3.36 | 2.93 | 4.03 | No. Site constraints do not allow full reduction. |
| Spy Pond | MA71040 | 38 | 28.1 | - | - | - | 20 Leaching Catch Basins, 3 Infiltration Basins | 6.01 | 5.15 | 5.15 | No. Site constraints do not allow full reduction. |
| Wading River** | MA62-47 | 12.31 | 3.8 | - | - | - | 4 Infiltration Swales | 2.8 | 2.46 | 2.46 | No. Site constraints do not allow full reduction. |
| Total: | | | | | | | | 82.48 | 62.55 | 78.86 | |

4.3 Construction

Once a project has a completed design and all appropriate permits have been received, the Retrofit Initiative BMPs will be constructed as part of federally funded district maintenance contracts. These contracts allow for the construction of the stand-alone stormwater BMPs (not affiliated with other road improvement activities). MassDOT has exerted significant effort this year in developing the maintenance contract funding to allow for this type of construction. Table 10 summarizes the funding budgets that have been set for each district to construct BMPs once design and permitting is complete.

Table 10 District Maintenance Contract Funding

| District # | FY11 Funding | FY12 Funding |
|--------------|--------------------|--------------------|
| 1 | - | \$1,500,000 |
| 2 | - | \$1,500,000 |
| 3 | \$2,225,000 | \$1,500,000 |
| 4 | \$2,225,000 | \$1,500,000 |
| 5 | \$500,000 | \$500,000 |
| 6 | \$1,000,000 | \$500,000 |
| Total | \$5,950,000 | \$7,000,000 |

No Retrofit Initiatives projects have progressed to construction this year. However, a number of retrofits are expected to be constructed in the next permit term.

Lowes Pond Summary Sheet

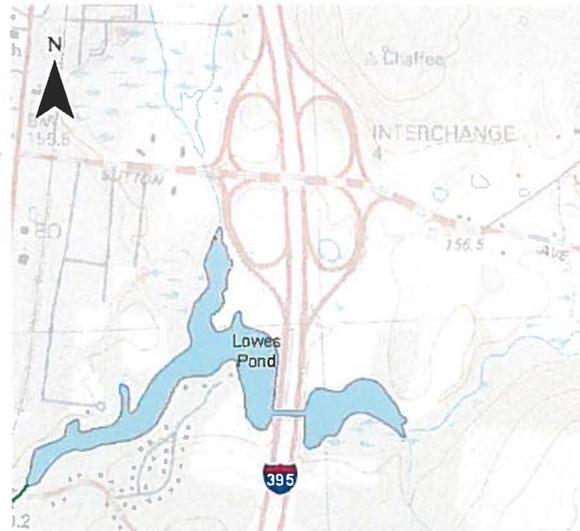
Interstate 395 in Oxford, MA

Resurfacing Project: # 605759
Receiving Water Body: Lowes Pond (MA42034)
Project Town: Oxford
MassDOT District: 3

Project Overview

Site Description:

MassDOT's Interstate 395 (I-395) bisects Lowes Pond just south of the I-395 and Sutton Avenue interchange (Exit 4). Lowes Pond is channeled beneath the highway via two concrete culverts. A small portion of the southbound on-ramp at the interchange is immediately adjacent to the pond's shore.



Site of I-395 Resurfacing Project

Water Body Description:

Lowes Pond (MA42034) is impaired for noxious aquatic plants and is covered by a TMDL for phosphorus. Taking into account the Total Phosphorus (TP) removal provided by existing BMPs, the TP loading to Lowes Pond from MassDOT runoff was 61.3 lb/yr prior to construction.

Project Goal:

In order to meet the target TP Waste Load Allocation (WLA) of 20.9 lb/yr, a TP reduction of 40.4 lb/yr was recommended.

BMPs Constructed:

MassDOT designed, permitted, and constructed **13 infiltration basins** to treat 8.2 acres of impervious cover and 14.0 acres of pervious cover of MassDOT roads as part of the resurfacing project. These infiltration basins will achieve an estimated pollutant loading reduction of **20.6 lb/yr**. Additional BMPs have not been proposed due to site constraints. However, the possibility of additional pollutant reductions may be reviewed during future programmed project work and as standalone projects through the Retrofit Initiative.



Construction of Infiltration Basin



Construction of Infiltration Basin

Appendix B: River and Stream Signs Installed in Permit Year

River and Stream Signs Installed in Permit Year 9

| Road | River | Town/City |
|---------------------|-----------------------------|--------------------------|
| Route 10 | Manhan River | Southampton |
| Route 10 | Manhan River | Southampton |
| I-495 | Shasheen River | Lawrence/N. Andover Line |
| Route 3A | Jones River | Kingston |
| Route 110 | Powow River | Amesbury |
| Route 3/I-93 | Neponset River | Boston/Milton Line |
| Route 109 | Charles River | Deadham/Boston Line |
| Route 110 | Cobbler's Brook | Merrimac |
| Route 133 | Essex River | Essex |
| Route 187 | Great Brook | Westfield |
| Route 20 | Westfield River | Westfield |
| Route 8 | Hoosic River (North Branch) | Clarksburg |
| Route 135 | Charles River | Dedham/Needham Line |
| Route 123 | Rumford River | Norton |
| Route 123/Route 495 | Canoe River | Norton |
| Route 110 | Nashua River | Clinton |
| Cordaville Road | Sudbury River | Ashland |
| Route 1A | Miles River | Ipswich |
| Route 1 | Neponset River | Foxborough |
| Route 113 | Nashua River | Pepperell |
| Route 147 | Connecticut River | Springfield |
| I-195 | Runnins River | Seekonk |
| Route 101 | Otter River | Gardner/Templeton Line |
| Route 112 | North River | Colrain |
| Route 112 | North River | Colrain |
| Route 112 | North River (East Branch) | Colrain |



Appendix C: Design Public Hearings Table

Design Public Hearings Table

List of Public Hearings Posted on the Highway Web Site from 4/1/2011 to 3/31/2012

| City/Town | Date | Description |
|-----------------|-----------|--|
| Apr-2011 | | |
| Attleboro | 4/4/2011 | A Design Public Hearing will be held by MassDOT - Highway Division to discuss the proposed Safe Routes to School Thacher School Infrastructure Project in Attleboro, MA. |
| Salisbury | 4/5/2011 | A Design Public Hearing will be held by MassDOT - Highway Division to discuss the proposed Rail - Trail Connector project in Salisbury, MA. |
| Jamaica Plain | 4/6/2011 | A Public Information Meeting will be held by MassDOT to discuss the proposed Planning Study for the Replacement of Monsignor Casey Overpass project in Jamaica Plain, MA. |
| Boston | 4/11/2011 | A Public Information Meeting will be held by MassDOT-Highway Division to discuss the Longfellow Bridge Rehabilitation Project. |
| Hudson | 4/11/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed replacement of the Houghton Street bridge over the Assabet River project in the Town of Hudson, MA. |
| Plymouth | 4/11/2011 | A Design Public Hearing will be held by MassDOT - Highway Division to discuss the proposed Reconstruction of Route 44 (Samoset Street) project in Plymouth, MA. |
| Arlington | 4/12/2011 | A Design Public Hearing will be held by MassDOT - Highway Division to discuss the proposed Reconstruction of Massachusetts Avenue, from Pond Lane to the Cambridge City Line in Arlington, MA. |
| New Bedford | 4/12/2011 | A Design Public Hearing will be held by MassDOT - Highway Division to discuss the proposed Flaherty Drive Extension project in New Bedford, MA. |
| South Weymouth | 4/12/2011 | A Design Public Hearing will be held by MassDOT (Project No. 604510) to discuss the proposed construction of the East-West Parkway in Abington, Weymouth and Rockland, MA. |
| Tisbury | 4/13/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Tisbury - Reconstruction of Sidewalks on State Road from Camp Street to Pine Tree Road project in Tisbury MA. |
| Malden | 4/14/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Pleasant Street Downtown Center Improvements Project, from Abbott Street to Main Street in Malden, Massachusetts. |
| Medford | 4/14/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Bridge Replacement and Noise Barrier Construction Project (known as 93FAST14) on the I-93 Corridor in Medford, MA. |
| Reading | 4/14/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Walter S. Parker Middle School - Safe Routes to School project in Reading, MA. |

Design Public Hearings Table

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| City/Town | Date | Description |
|-----------------|-----------|---|
| Oak Bluffs | 4/20/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Intersection Improvements at Edgartown-Vineyard Haven Road and Barnes Road project in Oak Bluffs, MA. |
| Boston | 4/26/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Symphony Area Streetscape project in Boston, MA. |
| Chelsea | 4/26/2011 | A Design Public Hearing will be held by MassDOT - Highway Division to discuss the proposed Browne and Wright Middle Schools Safe Routes to School project in Chelsea, MA. |
| Dracut | 4/28/2011 | A Design Public Hearing will be held by MassDOT to discuss the Arlington Street Reconstruction Project in the Town of Dracut, MA. |
| Southbridge | 4/28/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Bridge Demolition & Intersection Relocation of North Woodstock Road (Route 169) project in Southbridge, MA. |
| West Newbury | 4/28/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Rocks Village Bridge Rehabilitation Project in Haverhill and West Newbury, MA. |
| May-2011 | | |
| Lancaster | 5/16/2011 | A Design Public Informational Meeting will be held by MassDOT - Highway Division (Project No. 605216) to discuss the proposed reconstruction on Route 70 (Lunenburg Road) at Old Union Turnpike and construction of an eastbound acceleration lane at Interchange 35 on Route 2 in Lancaster, MA. |
| Jamaica Plain | 5/18/2011 | A Public Information Meeting will be held by MassDOT to discuss the proposed Planning Study for the Replacement of Monsignor Casey Overpass project in Jamaica Plain, MA. |
| Boston | 5/25/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Yawkey Way Extension project in Boston, MA. |
| Jun-2011 | | |
| Needham | 6/1/2011 | A Design Public Hearing will be held by MassDOT to discuss the final design contract for the proposed I-95/93 (Route 128) Transportation Improvement Project in Needham & Wellesley, MA. |
| East Brookfield | 6/8/2011 | A Public Informational Meeting will be held by MassDOT – Highway Division (Project No. 604510) to present the latest proposed Shore Road Bridge Replacement (Br. # E-02-002) over East Brookfield River/ Quaboag Pond project design in the town of East Brookfield, MA. |

Design Public Hearings Table

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| City/Town | Date | Description |
|--------------------|-----------|--|
| Lincoln | 6/8/2011 | A Public Information Meeting will be held by MassDOT to discuss the Landscape improvements which will accompany the proposed highway safety improvements along Route 2 at the Lincoln-Concord Town Line-also known as Crosby's Corner. |
| Cambridge | 6/9/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Cambridge Common Improvements project in Cambridge, MA. |
| Dunstable | 6/9/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Route 113 Retaining Wall project in Dunstable, MA. |
| Taunton | 6/22/2011 | A Design Public Hearing will be held by the Massachusetts Department of Transportation to discuss the proposed Holloway Street bridge replacement project in the Town of Taunton, MA. |
| Cambridge | 6/23/2011 | A Design Public Information Meeting will be held by MassDOT - Highway Division to discuss the proposed Rehabilitation of the Anderson Memorial Bridge (Bridge No. B-16-011 = C-01-007) in Boston and Cambridge, MA. |
| Pelham | 6/23/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Reconstruction of Amherst Road project in Pelham, MA. |
| Jamaica Plain | 6/29/2011 | A Public Information Meeting will be held by MassDOT to discuss the proposed Planning Study for the Replacement of Monsignor Casey Overpass project in Jamaica Plain, MA. |
| South Boston | 6/30/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed rehabilitation of the Hugh Farren Pedestrian Bridge project in Boston, MA. |
| Dennis | 6/30/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Reconstruction on Route 134 from Route 28 to Upper County Road project in Dennis, MA. |
| Jul-2011 | | |
| Easthampton | 7/13/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed bridge replacement project involving Northampton Street (Rte. 10) over Manhan River in Easthampton, MA. |
| South Dennis | 7/14/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Upper County Road over Swan Pond River and Main Street/Route 28 over Swan Pond River projects in Dennis, MA. |
| Newton Lower Falls | 7/20/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Rehabilitation of the Riverside Pedestrian Park Bridge (Bridge No. N-12-080 = W-29-064) in Weston and Newton, MA. |

Design Public Hearings Table

| City/Town | Date | Description |
|-----------------|-----------|---|
| Westport | 7/20/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Central Village Pedestrian, Bicycle and Traffic Improvements project in Westport, MA. |
| Sutton | 7/28/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed intersection improvement project at Route 146 and Boston Road in Sutton, MA. |
| Aug-2011 | | |
| Chester | 8/1/2011 | A Design Public Hearing will be held by MassDOT - Highway Division (Project No. 605459) to discuss the proposed superstructure replacement at Middlefield Road over the CSX Railroad and the proposed bridge rehabilitation at Baystate Drive over the CSX Railroad in Chester, MA. |
| Richmond | 8/4/2011 | A Design Public Hearing will be held by MassDOT - Highway Division (Project No. 605459) to discuss the proposed superstructure replacement at Summit Road over the CSX Railroad in Richmond, MA. |
| Hinsdale | 8/10/2011 | A Design Public Hearing will be held by MassDOT - Highway Division (Project No. 605459) to discuss the proposed bridge replacement at Bridge Street over the CSX Railroad in Hinsdale, MA. |
| Boston | 8/23/2011 | Public Hearings will be held by MassDOT, as the state routing agency, to discuss the I-93/I-95 Non-Radioactive Hazardous Material ("NRHM") through routing designation proposed by the City of Boston. |
| Cambridge | 8/23/2011 | A Design Public Information Meeting will be held by MassDOT - Highway Division to discuss the proposed Rehabilitation of the Anderson Memorial Bridge (Bridge No. B-16-011 = C-01-007) in Boston and Cambridge, MA. |
| Quincy | 8/24/2011 | Public Hearings will be held by MassDOT, as the state routing agency, to discuss the I-93/I-95 Non-Radioactive Hazardous Material ("NRHM") through routing designation proposed by the City of Boston. |
| Huntington | 8/29/2011 | A Design Public Hearing will be held by MassDOT - Highway Division (Project No. 605460) to discuss the proposed superstructure replacement at Route 112 over the CSX Railroad in Huntington, MA. |
| Waltham | 8/30/2011 | Public Hearings will be held by MassDOT, as the state routing agency, to discuss the I-93/I-95 Non-Radioactive Hazardous Material ("NRHM") through routing designation proposed by the City of Boston. |

Design Public Hearings Table

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| City/Town | Date | Description |
|-----------------|------------|--|
| Sep-2011 | | |
| Stoneham | 9/1/2011 | Public Hearings will be held by MassDOT, as the state routing agency, to discuss the I-93/I-95 Non-Radioactive Hazardous Material ("NRHM") through routing designation proposed by the City of Boston. |
| Jamaica Plain | 9/13/2011 | A Public Information Meeting will be held by MassDOT to discuss the proposed Planning Study for the Replacement of Monsignor Casey Overpass project in Jamaica Plain, MA. |
| Somerville | 9/15/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Bridge Rehabilitation Project at Cross Street over B&M / MBTA Railroad in the City of Somerville, MA. |
| Worcester | 9/21/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Kenneth F. Burns Memorial Bridge Replacement Project in Worcester and Shrewsbury, MA. |
| Shelburne Falls | 9/28/2011 | A design Public Hearing will be held by the MassDOT - Highway Division to discuss the proposed replacement of the Ashfield Road (Route 112) Bridge over the Clark Brook, Bridge No. B-28-002, in Buckland, MA. |
| Hinsdale | 9/29/2011 | A Design Public Hearing will be held by MassDOT - Highway Division (Project No. 605459) to discuss the proposed bridge replacement at North Washington Road (Route 8) over the CSX Railroad in Hinsdale, MA. |
| Oct-2011 | | |
| Dedham | 10/12/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed bridge replacement project, Providence Highway over Mother Brook, in Dedham, MA. |
| Amherst | 10/18/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Bridge Rehabilitation (Pelham Road over Fort River) project in Amherst, MA. |
| Auburn | 10/18/2011 | A Design Public Hearing will be held by MassDOT - Highway Division to discuss the proposed bridge deck replacement of Swanson Road over Interstate 290 in Auburn, MA. |
| Marlborough | 10/25/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Route 20 intersection and signal improvement at Concord Road project in Marlborough MA. |

Design Public Hearings Table

| City/Town | Date | Description |
|------------------|-------------|---|
| Nov-2011 | | |
| Dartmouth | 11/2/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed reconstruction of Faunce Corner Road (FCR), the replacement of FCR Bridge, the I-195 ramps and intersections in Dartmouth, MA. |
| Springfield | 11/15/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Reconstruction of Edwards Street, Spring Street and Elliot Street in Springfield, MA. |
| Dennisport | 11/16/2011 | A Public Information Meeting will be held by MassDOT to discuss the proposed Upper County Road over Swan Pond River and Main Street/Route 28 over Swan Pond River projects in Dennis, MA |
| Alford | 11/17/2011 | A Design Public Hearing will be held by MassDOT to discuss the Alford Road over Alford Brook proposed Bridge Replacement Project in the Towns of Alford and Great Barrington, MA. |
| Monterey | 11/29/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Route 23 Resurfacing project in Monterey, MA. |
| Sheffield | 11/29/2011 | A Design Public Hearing will be held by the MassDOT to discuss the proposed Bridge Replacement Project on State Route 7A (Ashley Falls Road) over the Housatonic Railroad in the Town of Sheffield, MA. |
| Somerville | 11/21/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Multi Use Path Construction project in Somerville, MA. |
| Dec-2011 | | |
| Lynn | 12/6/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Route 129 (Broadway) reconstruction project, from Lynnfield Street to Church Street in Lynn, MA. |
| Amesbury | 12/7/2011 | A Public Meeting will be held by MassDOT to present the Environmental Assessment/Draft Environmental Impact Report and Whittier Bridge/I-95 Improvement Project in Amesbury, Newburyport and Salisbury, MA. seek public comments on the proposed. |
| North Easton | 12/15/2011 | A Design Public Hearing will be held by MassDOT to discuss the proposed Safe Routes to School (F.L. Olmsted) project in Easton, MA. |
| Wales | 12/20/2011 | A Design Public Meeting will be held by MassDOT to discuss the proposed Route 19 - Pedestrian Access Improvements project in Wales, MA. |

Design Public Hearings Table

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| City/Town | Date | Description |
|-----------------|-----------|---|
| Jan-2012 | | |
| Charlemont | 1/24/2012 | A Design Public Hearing will be held by MassDOT to discuss the proposed Route 2 Culvert (C-5-25) over Hartwell Brook project in the Town of Charlemont, MA. |
| Springfield | 1/24/2012 | A Design Public Hearing will be held by MassDOT to discuss the proposed reconstruction project of Boston Road (Route 20), Pasco Street and Parker Street in Springfield and Wilbraham, MA. |
| Feb-2012 | | |
| East Weymouth | 2/9/2012 | A Design Public Hearing will be held by MassDOT to discuss the proposed Fore River Bridge Replacement Project in Weymouth and Quincy, MA. |
| Natick | 2/13/2012 | A Public Information Meeting will be held by MassDOT to discuss the proposed intersection improvements at Route 9 and Oak Street in Natick, MA. |
| Revere | 2/28/2012 | A Design Public Hearing will be held by MassDOT to discuss the proposed ST 145 Revere Beach Parkway Bridge over MBTA Blue line and State Road project in Revere, MA. |
| Mar-2012 | | |
| Boston | 3/1/2012 | A Public Hearing will be held by MassDOT-Highway Division to present the Environmental Assessment (EA)/Programmatic Section 4(f) Evaluation and seek public comments on the EA for the proposed Longfellow Bridge Rehabilitation Project in Boston and Cambridge, MA. |
| Taunton | 3/7/2012 | A Public Information Meeting will be held by MassDOT to discuss the alternatives that have been developed to improve the interchange of Route 24 and Route 140 in Taunton, MA. |
| Cambridge | 3/13/2012 | A Design Public Hearing will be held by MassDOT to discuss the proposed Rehabilitation of River St and Western Ave Bridges over the Charles River and Soldiers Field Rd in Boston-Cambridge, MA. |
| Allston | 3/15/2012 | A Design Public Hearing will be held by MassDOT to discuss the proposed Rehabilitation of River St and Western Ave Bridges over the Charles River and Soldiers Field Rd in Boston-Cambridge, MA. |
| Boston | 3/19/2012 | A Public Meeting will be held by MassDOT-Highway Division to present MassDOT's Snow and Ice Control Program's Draft Environmental Status and Planning Report (ESPR) and seek public comments on the ESPR. |
| Fairhaven | 3/22/2012 | A Design Public Hearing will be held by MassDOT - Highway Division to discuss the proposed Bridge Superstructure Reconstruction, Bridge No. F-01-014, I-195 over River Avenue project in Fairhaven MA. |

Design Public Hearings Table

| City/Town | Date | Description |
|------------------|-----------|--|
| Berkley | 3/26/2012 | A Design Public Hearing will be held by MassDOT to discuss the proposed bridge replacement, B-08-003, Padelford Street over State Route 24 project in Berkley, MA. |
| Boston | 3/28/2012 | A Design Public Hearing will be held by MassDOT to discuss the proposed Commonwealth Avenue Improvement Project - Phase 2A in Boston, MA. |
| West Springfield | 3/29/2012 | A Design Public Hearing will be held by MassDOT - Highway Division (Project No. 605459) to discuss the proposed bridge replacement at Westfield Street (Route 20) over the CSX Railroad in West Springfield, MA. |
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Appendix D: Drainage Tie-In SOP

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| Massachusetts Department of Transportation Highway Division Standard Operating Procedures | | S.O.P. No. HMD-02-02-2-000 Page: 1 of 9 | |
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PURPOSE:

To establish Standard Operating Procedures (SOP) for submission requirements, review process and approval of applications for Non-vehicular Access Permits for the purpose of connection or discharge to any MassDOT drainage system, in cases where it can be shown that no practicable alternative exists, and to ensure that the process will be predictable, timely, and applied in a uniform manner throughout MassDOT.

MassDOT is required to comply with state and federal statutes and regulations relating to storm water discharges including the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit. Consequently, MassDOT is precluded from accepting or continuing to accept drainage contributions to the MassDOT MS4, which cause or could cause violation of the permit conditions. Therefore, MassDOT must prohibit illicit and unauthorized connections and discharges to the MassDOT MS4 and require the removal of all such existing illicit and unauthorized connections, regardless of the duration that the connection has been in place.

AUTHORITY:

MassDOT is granted authority to issue state highway access permits by M.G.L. Chapter 81, Section 21, and its implementing regulations found at 720 CMR 13.00. These regulations provide the basis for the Standard Operating Procedures for Review of State Highway Access Permits (S.O.P. No. HMD-60-02-3-000). These regulations also provide the basis for this SOP, which provides guidance for the connection or discharge to any MassDOT drainage system through the Non-vehicular Access Permit process.

RESPONSIBILITY:

The District Highway Director (DHD) or designee, within whose District boundaries access is sought, in most cases, is directly responsible for issuance and/or denial of State Highway Permit Applications and, if requested by a prospective applicant, a determination of need for a Non-vehicular Access Permit.

NEED FOR A NON-VEHICULAR ACCESS PERMIT:

As defined in 720 CMR 13.00 and MassDOT's S.O.P. No. HMD-60-02-3-000, any connection to or discharge to any MassDOT drainage system (in cases where it can be shown that no practicable alternative exists), requires the issuance of a Non-vehicular Access Permit.

DEFINITIONS:

DRAINAGE CONNECTION: The permanent or temporary (including construction) connection of surface water flow via sheet flow, drainage swale, or pipe to the MassDOT drainage system.

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LAND USES WITH HIGHER POTENTIAL POLLUTANT LOADS: As defined by Massachusetts Stormwater Policy, land uses that generate higher concentrations of pollutants than found in typical runoff, based on existing data (e.g. auto salvage yards, auto fueling facilities, high intensity commercial parking lots, etc.).

ILLICIT DISCHARGE: Direct or indirect discharges to the MassDOT drainage system that are not composed entirely of storm water, except as exempted by this SOP. Illicit discharges include, without limitation, sewage, process wastewater, or wash water and any connections from indoor drains, sinks, or toilets, regardless of whether said connection was previously allowed, permitted, or approved before the effective date of this SOP.

ILLICIT DISCHARGE COMPLIANCE STATEMENT: Signed and completed statement as provided in Appendix "A" of this SOP.

MASSDEP: The Massachusetts Department of Environmental Protection.

MASSDOT DRAINAGE SYSTEM: The system of conveyances designed or used for collecting or conveying storm water, including any road with a drainage system, street gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural, man-made or altered drainage channel, reservoir, and other drainage structures. This includes all drainage systems or conveyances that are within MassDOT's State Highway Layout, any MassDOT easements, or any systems that are operated and maintained by the MassDOT Highway Division.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER DISCHARGE PERMIT: A permit jointly issued by the United States Environmental Protection Agency and MassDEP that authorizes the discharge of pollutants to waters of the United States.

NON-STORM WATER DISCHARGE: Discharge to the MassDOT drainage system not composed entirely of storm water.

OWNER/APPLICANT: The person, as defined in 720 CMR 13.02, owning the land from which access is being sought to a State Highway Layout, as that term is defined in 720 CMR 31.02.

PRACTICABLE ALTERNATIVE: Generally, an alternative is practicable if it can be implemented taking into consideration land area requirements, soils, applicable regulations and other site constraints. The Owner/Applicant shall have made all reasonable efforts to legally dispose of the discharge to a location, receiving water, or drainage system not included in the State Highway Layout. Evaluation of practicable alternatives for project designs, site layouts,



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existing technology and BMPs are examples of reasonable efforts. However, off-site alternatives also may be practicable. For example, pursuing an easement for locating storm water controls on an adjacent lot where adequate capacity exists, or can be provided, may be a practicable alternative. The scope and effort to be undertaken to meet the Non-vehicular Access Permit requirements should reflect the scale and impacts of the proposed drainage connection and the classification and sensitivity of the receiving waterbody. Whether an alternative is or is not practicable is a decision made by MassDOT.

UNAUTHORIZED CONNECTION OR DISCHARGE: Connection or discharge to the MassDOT MS4 drainage system that does not have a valid Access Permit for a drainage connection or discharge.

APPLICATION OF PROCEDURES:

All permit applications for a stormwater drainage connection or the permitting of an existing drainage connection, to the MassDOT drainage system, shall be submitted in writing to the District Highway Director and shall comply with the requirements of 720 CMR 13.00, and MassDOT's Standard Operating Procedures for Review of State Highway Access Permits (S.O.P. No. HMD-60-02-3-000). As provided in 720 CMR 13.01(2)(b), in cases where a particular Project or activity may seek both vehicular and non-vehicular access, separate and distinct permit applications should be filed.

In order to show that no practicable alternative exists, an Owner/Applicant must show that all reasonable solutions have been evaluated including but not limited to: (1) all possible infiltration methods; (2) the use of low impact development (LID) techniques; (3) the minimization of impervious surface areas; (4) the use of applicable stormwater best management practices (BMPs); (5) the connection to municipal or privately owned off-site drainage systems; and (6) the acquisition of additional property or land easements.

It is strongly recommended that an Owner/Applicant, considering submitting an application for a Non-Vehicular Access Permit for the purpose of connection to or discharge to any MassDOT drainage system, contact the MassDOT District Permits Engineer to discuss the project and the process. It is also recommended that an Owner/Applicant not file any plans or permit applications for approval with any local boards or commissions for the approval of projects that require a connection or discharge to MassDOT's drainage system until the Owner/Applicant has received written notification from MassDOT that, based on the information presented, there does not seem to be a practicable alternative to provide for on-site stormwater treatment and that MassDOT will continue to review the required information. Site plan approval by a local board or commission does not mean that an Owner/Applicant has met MassDOT's requirement that no practicable alternative exists.

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If MassDOT determines that no practicable alternative exists other than a connection or discharge to the MassDOT drainage system, the Owner/Applicant shall be required to infiltrate or contain as much runoff as the site conditions will allow. MassDOT will only accept the volume of runoff that cannot be infiltrated on-site.

MassDOT will not under any circumstances allow the connection or discharge of drainage from a non-MassDOT facility or property for the following types of connections:

- Any requests that do not fully comply with MassDOT's NPDES MS4 Permit and other environmental permits or state and federal regulations;
- Any requests that do not fully comply with MassDEP's Stormwater Management Standards;
- Any request for the connection of sump pump discharges;
- Any request for the connection of building floor drains;
- Any request for the connection of corrective or after-the-fact drainage connections to ameliorate problems (e.g., flooding) created by a lack of land use planning and/or site design. (An exception could be considered if the requested connection does not include any Illicit Discharge and mitigates or corrects an existing (i.e., prior to development) flooding or drainage issue within the State Highway Layout.);
- Any maintenance or continued use of an illicit connection or discharge to the MassDOT drainage system, regardless of whether the connection was permissible under applicable law, regulation or custom at the time of connection. When MassDOT staff is made aware of an illicit connection or discharge they will notify and work with MassDOT's Legal Department and MassDOT's Environmental Section to take the necessary steps to disconnect the illicit connection;
- Any maintenance or continued use of an unauthorized connection or discharge to the MassDOT drainage system, regardless of whether the connection was permissible under applicable law, regulation or custom at the time of connection. When MassDOT staff is made aware of an unauthorized connection or discharge they will immediately notify the property owner and make him/her aware of the necessary steps to correct the situation;
- Any discharges from dewatering activities or non-stormwater discharges including, discharges from private construction sites, and MassDOT construction and maintenance projects, unless the discharge is allowed under MassDOT's MS4 permit, or the applicant is in compliance with the conditions of a NPDES permit and the discharge is monitored, recorded, and reported to MassDOT by a Licensed Site Professional (LSP) for every 1,000 gallons of discharge or at least on a weekly basis; and
- Any request that in the opinion of MassDOT may have an adverse impact on the MassDOT drainage system in terms of pipe or conveyance capacity, the ability of existing MassDOT Best Management Practices (BMPs) to effectively treat the discharge/conveyance, or will require additional maintenance of MassDOT's drainage

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system. (An exception may be drainage system upgrades that will mitigate the impacts to the pipe system, and or the existing BMPs, or reduce MassDOT's required maintenance responsibilities.)

MassDOT may either require alteration or removal of an existing connection if it is deemed non-compliant with the MassDOT's NPDES MS4 permit or any of the prohibited connection types listed above.

The owner of land that connects to or discharges flow into MassDOT's drainage system may be liable to downstream abutter(s) that receive additional discharge water from the MassDOT drainage system as a result of any Non-vehicular Access Permit that may be issued.

SUBMISSION REQUIREMENTS:

Residential Access Permits for 5 Units or Less

The Owner/Applicant shall submit a sketch or site plan showing the drainage area of the site and all existing or proposed structures and driveways to MassDOT. The sketch/plan should show the proposed location of the requested connection or discharge to the MassDOT drainage system. The Owner/Applicant shall also submit a written description justifying the need for the connection, including why the storm water cannot be treated and or contained on-site and the steps or analysis the Owner/Applicant has performed to avoid requesting a connection. Additional information may need to be submitted based on the type of connection and the size of the drainage area.

Residential Access Permits, Greater than 5 Units, and Non-Residential Access Permits

The Owner/Applicant shall make the first submission (ordinarily the 25% Design) to MassDOT for review with a full set of plans and the following additional information:

Any design elements that are proposed in the State Highway Layout need to meet the requirements of MassDOT's *Project Development and Design Guide*, and the following:

- A report detailing the justification that no practicable alternative exists for on-site treatment, infiltration, or discharge to an adjacent parcel of land, private or municipal drainage system, or receiving water.
- A draft Stormwater Report that documents compliance with MassDEP's Stormwater Management Standards. The report shall be prepared and bear the stamp of a Professional Engineer registered in the Commonwealth of Massachusetts.
- A MassDEP Stormwater Report Checklist. The checklist shall be prepared and bear the stamp of a Professional Engineer registered in the Commonwealth of Massachusetts.
- A draft copy of each of the required local, state and federal environmental permit

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applications, including but not necessarily limited to, a NPDES Stormwater Permit, a Notice of Intent (NOI) or Request for Determination of Applicability (RDA) under the Wetlands Protection Act, a Chapter 91 Permit, a 404 Army Corps Permit, and a 401 Water Quality Certification.

- A draft copy of the site specific Stormwater Management Plan (SWMP).
- MassDOT's Early Environmental Coordination Checklist (EECC).
- MassDOT's Water Quality Data Form for the receiving water at the discharge/outlet location of the MassDOT drainage system(s) that the Owner/Applicant proposes to connect or discharge to.
- A Locus Map indicating:
 - The location of the site and the contributing watershed.
 - The location of the MassDOT drainage system, from the site location to the discharge/outlet location.
 - The MassDOT discharge/outlet location and the receiving water and watershed if different than the site location.
 - Habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Endangered, Threatened or of Special Concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species within five hundred (500) feet of any construction activity and the MassDOT discharge/outlet location.
 - Properties listed or eligible to be listed on the National Register of Historic Places that are within five hundred (500) feet of any construction activity and the MassDOT discharge/outlet location. It may be necessary to submit a list of properties with address to better define their locations.
- A hydraulic analysis of the existing and proposed capacity of the MassDOT drainage system into which the Owner/Applicant proposes to connect. The analysis shall include identification of all current connections to the system from MassDOT and non-MassDOT uses. The evaluation shall be for the entire stormwater drainage system that the Owner/Applicant proposes connection to and not just the area downstream of the proposed connection.
- If necessary, proposed improvements to the existing MassDOT drainage system to support, at a minimum, the existing and proposed additional drainage flow and conveyance, including but not limited to cleaning and or repairs to the existing system, from the point of connection to the system outlet. Video inspection, by the Owner/Applicant, may also be required to evaluate the condition of the existing system.
- Engineering Plans bearing the stamp of a Professional Engineer registered in the Commonwealth of Massachusetts, including plans and details describing the proposed changes to the site and the MassDOT drainage system. The plans shall meet the requirements of MassDOT's *Project Development and Design Guide* and the following:
 - Complete plan and profile of the MassDOT drainage system that the

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Owner/Applicant proposes to connect into from the point of connection to the system outlet, including:

- ✓ Pipe sizes and materials;
 - ✓ Invert elevations;
 - ✓ Hydraulic coefficients;
 - ✓ Flow capacities;
 - ✓ Flows and hydraulic grade lines based on the appropriate storm frequency as stated in the most current version of MassDOT's *Project Development and Design Guide*; and
 - ✓ Existing drainage easements.
- Complete plan and profile of the Owner/Applicant's existing and proposed drainage systems including:
 - ✓ Pipe sizes and materials;
 - ✓ Invert elevations;
 - ✓ Hydraulic coefficients;
 - ✓ Flow capacities; and
 - ✓ Existing flows and discharge velocities based on the appropriate storm frequency as stated in the most current version of MassDOT's *Project Development and Design Guide*.
 - Complete set of the Owner/Applicant's site plans including:
 - ✓ Existing grades at contour intervals of 2-feet (maximum) contours, supplemented by spot grades sufficient to characterize drainage patterns of the entire site.
 - ✓ Location of wastewater and groundwater conveyance systems and all other underground and overhead utilities.
 - ✓ The location of all existing and proposed buildings and structures, as well as their use.
 - ✓ The location and dimensions of all existing property easements and their designated use.
 - ✓ Watercourses and water bodies, wetland resource areas, floodplain information, and all relevant buffer zones.
 - Additional submittal requirements for Land Uses with Higher Potential Pollutant Loads (LUHPPL):
 - A copy draft source control and pollution prevention plan.
 - Indicate the location and sizing method for all proposed BMPs that are required for LUHPPL.

If the Owner/Applicant receives written notification from MassDOT that, based on the information provided by the Owner/Applicant, there does not seem to be a practicable alternative to provide for on-site stormwater treatment and that MassDOT will continue to review the

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required information, the second submission (ordinarily the 75%/100% Design) may be submitted to the District Highway Director for review. The second submission shall include the following project design documents:

- 75%/100% Design Plans, the previous requirements for the 25% Design Plans as listed above, and revisions or additional information that address the 25% comments. Any design elements that are proposed in the State Highway Layout need to meet the requirements of MassDOT's *Project Development and Design Guide*.
- Written responses to the 25% design comments.
- Specifications and Cost Estimate for all work that may occur within the State Highway Layout.
- The revised Stormwater Report that documents compliance with MassDEP's Stormwater Management Standards. The report shall be prepared and bear the stamp of a Professional Engineer registered in the Commonwealth of Massachusetts.
- A MassDEP Stormwater Report Checklist. The checklist shall be prepared and bear the stamp of a Professional Engineer registered in the Commonwealth of Massachusetts.
- A copy of the submitted or approved documents for each of the required local, state and federal environmental permits or applications.
- A revised copy of the site specific Stormwater Management Plan (SWMP).

Upon approval of the 75%/100% Design Plans by the District Highway Director or designee, the third submission (ordinarily the PS&E submission) may be submitted to the District Highway Director for review. The third submission shall include the following project design documents:

- PS&E Design Plans, the previous requirements for the 25% Design Plans as listed above, and revisions or additional information that address the 75%/100% comments. Any design elements that are proposed in the State Highway Layout need to meet the requirements of MassDOT's *Project Development and Design Guide*.
- Written responses to the 75%/100% design comments.
- Final Specifications and Cost Estimate for all work that may occur within the State Highway Layout.
- The final Stormwater Report that documents compliance with MassDEP's Stormwater Management Standards. The report shall be prepared by and bear the stamp of a Professional Engineer registered in the Commonwealth of Massachusetts.
- A MassDEP Stormwater Report Checklist. The checklist shall be prepared by and bear the stamp of a Professional Engineer registered in the Commonwealth of Massachusetts.
- A copy of the approved documents for each of the required local, state and federal environmental permits or applications.
- A final copy of the site specific Stormwater Management Plan (SWMP).

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- Signed and completed Illicit Discharge Compliance Statement Form Appendix "A".
- Maintenance and Cleaning Record Schedule.

Upon approval of the PS&E submission and all required documents, the Non-vehicular Access Permit for the connection or discharge to a MassDOT drainage system may be issued. Upon issuance of the Permit, and prior to the start of work, the Applicant/Owner is required to record the Non-vehicular Access Permit and plans, the Illicit Discharge Compliance Statement Form, and a Maintenance and Cleaning Record Schedule at the appropriate Registry of Deeds. The Permit will not be effective until the required documents are recorded and a notice of recording is submitted to the District Highway Director. Prior to the start of work, a Storm Water Pollution Prevention Plan (SWPPP), if required based on the thresholds set by the Environmental Protection Agency (EPA), must be submitted to the District Highway Director for review.

Additional Information

The Owner/Applicant shall submit any additional information requested by MassDOT as part of reviewing the permit application.

SOP Appendix:
Illicit Discharge Compliance Statement Appendix "A"
Drainage Connection Policy, P-06-002

Appendix A
MassDOT Highway Division
Illicit Discharge Compliance Statement

(MassDOT Permit Number)

I, as Owner/Applicant, certify, that; (1) the property located at:

(Street name, route number and station location of proposed stormwater drainage connection)

in, _____, Massachusetts;
(City/Town)

(2) the property does not have any illicit* or unauthorized drainage connections or discharges including, but not limited to, non-stormwater discharges occurring due to spills, dumping and improper connections to the MassDOT drainage system from residential, industrial, commercial or institutional establishments.

(3) that the attached plan/map clearly identifies the following:

- The location of all on-site systems for conveying wastewater, stormwater and/or groundwater.
- The location of any measures taken to prevent the entry of illicit discharges into the MassDOT storm drain system.
- That there are no connections between the wastewater management system and the MassDOT storm drain system; and

(4) that the following actions have been taken to identify and remove illicit discharges for existing and redevelopment projects:

- Visual screening/inspection
- Dye or smoke testing
- Water quality sampling
- Removal of illicit discharges (List type and location): _____
- Other method of illicit detection (List method): _____

Property Owner:

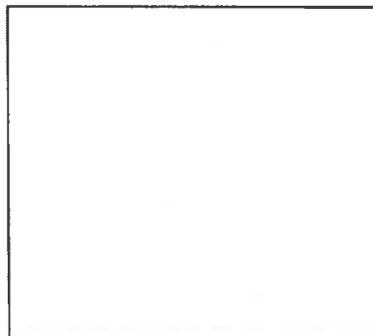
Name: _____

Address: _____

City/Town: _____

Signature: _____

Registered Professional Engineer:



*An illicit discharge includes direct or indirect discharges to the MassDOT storm drain system that are not composed entirely of storm water, except as exempted in MassDOT's Drainage and Connection Policy, P-06-002, dated, 6/26/2006. Illicit discharges include, without limitation, sewage, process wastewater, or wash water and any connections from indoor drains, sinks, or toilets, regardless of whether said connection was previously allowed, permitted, or approved.



POLICY DIRECTIVE

Luisa Paiewonsky (signature on original)

COMMISSIONER

**Massachusetts Highway Department
Drainage Connection Policy**

The purpose of this policy is to comply with state and federal statutes and regulations relating to storm water discharges including the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) General Permit. Therefore, effective immediately, MassHighway prohibits the connection of unauthorized and/or illicit discharges to the State highway drainage system and requires the disconnection, or permitting, of all such existing connections. The NPDES MS4 General Permit requires the permittee to “develop, implement, and enforce a program to detect and eliminate illicit discharges.”

Unauthorized discharges to MassHighway’s storm drain system include any discharges or tie-ins that have not been issued a drainage access tie-in permit.

An illicit connection is a “direct or indirect discharge to the [MassHighway] storm drain system that is not composed entirely of storm water. Illicit discharges include, without limitation, sewage, process wastewater, or wash water and any connections from indoor drains, sinks, or toilets, regardless of whether said connection was previously authorized, permitted, or approved before the effective date of the NPDES Phase II program (May 1, 2003). The term does not include a discharge in compliance with an NPDES Storm Water Discharge Permit (municipal general permit for MS4 or discharge of only storm water from industrial activity covered under 40 CFR 122.26(b)(14)(i)-(xi)), or a Surface Water Discharge Permit (discharge of treated effluent water from industrial activity) or resulting from fire fighting activities.” It shall be the property owner’s responsibility to prove that any existing or proposed tie-in is in compliance with NPDES.

All drainage connections require a MassHighway drainage tie-in permit, except for the discharges listed at the end of this policy. If an illicit or unauthorized connection is identified, then the District Highway Director shall notify the landowner in writing that they are in violation of Chapter 81, Section 21 of Massachusetts General Laws and may be in possible noncompliance with NPDES requirements. A copy of the letter shall be forwarded to MassHighway’s Environmental Section and the Executive Office of Transportation’s Office of the General Counsel. It shall be the responsibility of the landowner to apply for a MassHighway tie-in permit, or propose a schedule for the removal of the discharge. If the landowner does not act within 90 days of the date of notification, or sooner if the discharge poses an imminent health threat, then MassHighway will pursue legal action with the Attorney General’s office. MassHighway also may construe the connection as a form of trespass and consequently remove the connection.

Distribution: _____ **Please Post:** _____ **Do Not Post:** X

Non storm water discharges that are not regulated under NPDES MS4 General Permit, and do not require a MassHighway drainage tie-in permit, include the following, provided that the source is not a significant contributor of pollutants as determined by the District Highway Director:

- Discharge or flow resulting from fire fighting activities;
- Springs;
- Natural flow from riparian habitats and wetlands; or
- Application of water for street sweeping or construction-related dust control



Appendix E: Status of Potential Illicit Connections



Status of Permits Issued or Still In-Process During Permit Year 9

| District | Permit # | Town | Road | Issue | Status | Nature of the Discharge | Follow Up Required? |
|----------|---|------------|---|--|---|---------------------------|---------------------|
| 1 | Letter Sent | Conway | 98 S. Deerfield Rd. (Route 116) | Two Drainage Pipes Discharging onto the Highway | <p>A letter was sent to the location on 8/11/2011. After 60 days it was noted that the property owner did not contact MassDOT. A site visit revealed no changes to the situation. This information was reported to our Legal Section and a meeting occurred to discuss the situation.</p> <p>During the meeting between MassDOT's Environmental and Legal Sections, a plan was formulated to work with the property owner on a one-on-one basis. This plan will be implemented as part of next year's permit activities and the results will be documented in the Annual Report for Permit Year 10.</p> | Unknown | Yes |
| 2 | Letter Sent | Orange | 338 S. Main St. (Route 122) | Direct Discharge from 4" Pipe into Drain Inlet | <p>A letter was sent to the location on 12/12/2011. After 60 days it was noted that the property owner did not contact MassDOT. A site visit revealed no changes to the situation. This information was reported to our Legal Section and a meeting occurred to discuss the situation.</p> <p>During the meeting between MassDOT's Environmental and Legal Sections, a plan was formulated to work with the property owner on a one-on-one basis. This plan will be implemented as part of next year's permit activities and the results will be documented in the Annual Report for Permit Year 10.</p> | Unknown | Yes |
| 3 | 3-2012-0052 | Leominster | Hess Gas Station #21508 Main St. (Route 13) | Request to Pump Treated Groundwater to MassDOT Catch Basin | <p>A temporary access permit was needed in order to pump treated groundwater into a MassDOT catch basin during an upgrade to the company's UST. The permit has been authorized and no further action is required.</p> | Treated Groundwater | No |
| 4 | Permit Application Submitted on 1/20/2010 | Revere | Rent-A-Tool 777 North Shore Road (Route 1A) | Multiple Tie-Ins to MassDOT Catch Basin | <p>A permit application was submitted by Rent-A-Tool on 1/20/2010. The Permit Engineer requested additional information, which was never submitted. Another site visit on 9/15/2011 revealed the presence of one more connection originating from the property. A letter was sent to the property owner on 9/16/2011 requesting the additional information again.</p> <p>If the additional information is not received and another site visit reveals no changes to the situation, then an attempt will be made to work with the property owner on a one-on-one basis. This approach will be implemented as part of next year's permit activities and the results will be documented in the Annual Report for Permit Year 10.</p> | Unknown Pipe Discharge | Yes |



| District | Permit # | Town | Road | Issue | Status | Nature of the Discharge | Follow Up Required? |
|----------|--------------------------|-----------|---|--|---|-------------------------|---------------------|
| 4 | Letter Sent | Haverhill | 205 Amesbury Rd. | Dry Weather Flow Discharging from Homeowner's Property to SHLO Via 4" White PVC Pipe | <p>A letter was sent to the property owner on 10/7/2011. It came back to District 2 with a status of "Address Unknown". The actual address was recently determined to be 205 (not 203). Another letter was sent to the property owner on 11/10/2011. That letter also came back to District 2 with a status of "Address Unknown".</p> <p>205 Amesbury Road does appear to be the correct address as the 4' pipe connected to MassDOT's catch basin was, again, verified with another site visit. The property did not appear to be abandoned either. This issue will be resolved through coordination with other public entities during Permit Year 10. Appropriate action will then follow to have the illicit connection removed.</p> | Unknown | Yes |
| 4 | Letter Sent | Woburn | 888 Main St. (Route 38) | A 4" Pipe Connected to a MassDOT Catch Basin | <p>An illicit connection was found in the summer of 2011 by highway personnel during routine maintenance operations. The tie-in is connected to a catch basin on MassDOT property and appears to be coming from the adjacent property, Dunkin Donuts.</p> <p>A letter was sent to the location on 10/7/2011. After 60 days it was noted that the property owner did not contact MassDOT. A site visit revealed no changes to the situation. This information was reported to our Legal Section and a meeting occurred to discuss the situation.</p> <p>During the meeting between MassDOT's Environmental and Legal Sections, a plan was formulated to work with the property owner on a one-on-one basis. This plan will be implemented as part of next year's permit activities and the results will be documented in the Annual Report for Permit Year 10.</p> | Unknown | Yes |
| 5 | NA | Norton | Norton Estates 250 Mansfield Avenue (Route 140) | One Tie-In to a MassDOT Catch Basin and a Second Tie-In to a Drainage Ditch | <p>Stormwater runoff via sheet flow also occurs in both locations, which was determined by a site visit from District 5 engineers. Traces of oil and rust have been found in the drainage ditch.</p> <p>A letter will be drafted and sent to the location. If no contact from the property owner occurs and another site visit reveals no changes to the situation, then an attempt will be made to work with the property owner on a one-on-one basis. This approach will be implemented as part of next year's permit activities and the results will be documented in the Annual Report for Permit Year 10.</p> | Unknown | Yes |
| 5 | 5-2007-0591 (Unofficial) | Taunton | Route 140 | | <p>The permit was never issued. The City of Taunton never responded to the original letter (dated 11/16/2007) that requested more information</p> | Stormwater | Yes |



| District | Permit # | Town | Road | Issue | Status | Nature of the Discharge | Follow Up Required? |
|----------|---|------------|---|--|---|-------------------------|---------------------|
| 5 | 5-0043-2007 (Unofficial) | Stoughton | Route 138 | | The permit was never issued. A letter dated 3/5/2007 was sent to Stephen Farr of VHB. No Response was received | Stormwater | Yes |
| 5 | 5-2009-0395 | Holbrook | Highland Plaza North Franklin St. (Route 37) | Direct | An access permit was authorized by District 5 for work that will improve stormwater runoff conditions. Additionally, an access permit was authorized by the Town of Holbrook so that the plaza can direct a portion of its closed drainage into their system. No further action is required. | Stormwater | No |
| 5 | 5-2011-0508 | Marshfield | Hess Gas Station #21324 Main St. (Route 139) | Request to Pump Treated Groundwater to MassDOT Catch Basin | A temporary access permit was needed in order to pump treated groundwater into a MassDOT catch basin during an upgrade to the company's UST. The permit has been authorized and no further action is required. | Treated Groundwater | No |
| 5 | Permit Application Sent on 12/12/2011 | Falmouth | Cumberland Farms 400 E. Falmouth Highway (Route 28) | Tie-In to MassDOT Catch Basin | <p>6/28/2011 – Letter Sent to the Property Owner Requesting Removal of the Tie-In.</p> <p>8/1/2011 – Response Letter Requesting Additional Time to Perform the Removal</p> <p>10/28/2011 – Another Letter Sent to the Property Owner Requesting Removal in a Timely Fashion</p> <p>11/17/2011 – Response Letter Stating Intent to Remove Tie-In and Construct Subsurface Dry Well</p> <p>12/12/2011 – Letter Sent to the Property Owner with Permit Application for Proposed Work. If the permit application is not received and another site visit reveals no changes to the situation, then an attempt will be made to work with the property owner on a one-on-one basis. This approach will be implemented as part of next year's permit activities and the results will be documented in the Annual Report for Permit Year 10.</p> | Stormwater | Yes |



| District | Permit # | Town | Road | Issue | Status | Nature of the Discharge | Follow Up Required? |
|----------|-------------|---------------|---|--|--|-------------------------|---------------------|
| 5 | Letter Sent | Norton | 283 West Main St. (Route 123) | A Drain Connection Extending to an Inlet Drain on MassDOT Property | <p>A letter was sent to the location on 9/19/2011. After 60 days it was noted that the property owner did not contact MassDOT. A site visit revealed no changes to the situation. This information was reported to our Legal Section and a meeting occurred to discuss the situation.</p> <p>During the meeting between MassDOT's Environmental and Legal Sections, a plan was formulated to work with the property owner on a one-on-one basis. This plan will be implemented as part of next year's permit activities and the results will be documented in the Annual Report for Permit Year 10.</p> | Unknown | Yes |
| 5 | Letter Sent | Middleborough | 161 and 167 South Main St. (Route 105) | Illicit Drainage Tie-In from the Former McGee Chevrolet | <p>A letter was sent on 9/2/2010 requesting removal of the tie-in or permit approval.</p> <p>During this permit year, it was determined through additional field investigations that the tie-in was actually discharging to the Town's property, not state highway property. No further action is required.</p> | Unknown | No |
| 5 | Letter Sent | Middleborough | 135 South Main St. (Route 105) | Illicit Drainage Tie-In from Rockland Trust Bank | <p>A letter was sent on 9/2/2010 requesting removal of the tie-in or permit approval. The property owner is taking measures to eliminate the connection.</p> <p>The connection was sealed by highway maintenance personnel at the property owner's request. No further action is required.</p> | Unknown | No |
| 6 | NA | Somerville | Near Shore Drive at Blessing of the Bay Boathouse Along The Mystic River (Route 93) | Elevated levels of E. coli were found in river samples. | <p>This site was visited on Aug 16th, 2010. A 48" outfall pipe was found to be discharging into the Mystic River. The next upstream feature had standing water but no flow was apparent. The next upstream feature was not identified. It is suspected that it is on Mystic Ave. MassDOT was not prepared to set up on Mystic Ave. A manhole on Shore drive was found to have flow, but the exit pipe is not directed toward the 48" pipe, although they may be connected underground. A follow up visit with a DOT crew with knowledge of the system and a full safety set-up is needed. Flow not tested due to 0.16" rainfall in last 24 hour period.</p> <p>MassDOT and AECOM will plan another visit with proper safety detail during dry weather.</p> | Unknown | Yes |

Additionally, three more potential illicit connections were re-inspected in Permit Year 9. The three connections are shown in the figures below.

Summary for Features 17541.1 and 17583.1

**Route 3
Billerica, MA**

Original Inspection Dates: Oct. 19 and 20, 2010

Follow Up Date: Oct 12, 2011

Dry weather flow was previously observed on 10/19/2010 and 10/20/2010 in manholes 17541.1 and 17583.1 on Route 3 in Billerica. The manholes were reinvestigated on 10/12/2011 to further investigate the source of the flow. Field teams observed a trickling flow entering manhole 17541.1 as well as 17583.1. A manhole in the median connects two catch basins that flow to features 17541.1 and 17583.1. Stagnant water was observed in both catch basins, however flow was only observed leaving catch basin 20090.1.

Potential Source:

- Stagnant water in clogged catch basin
- Washwater contamination

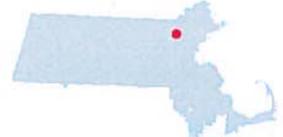
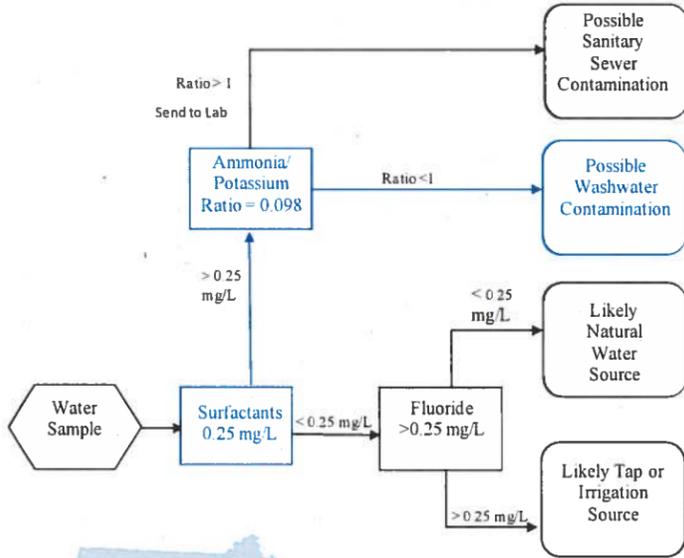
Recommended Actions:

- Clogged catch basins should be cleaned
- Resample location after cleaning

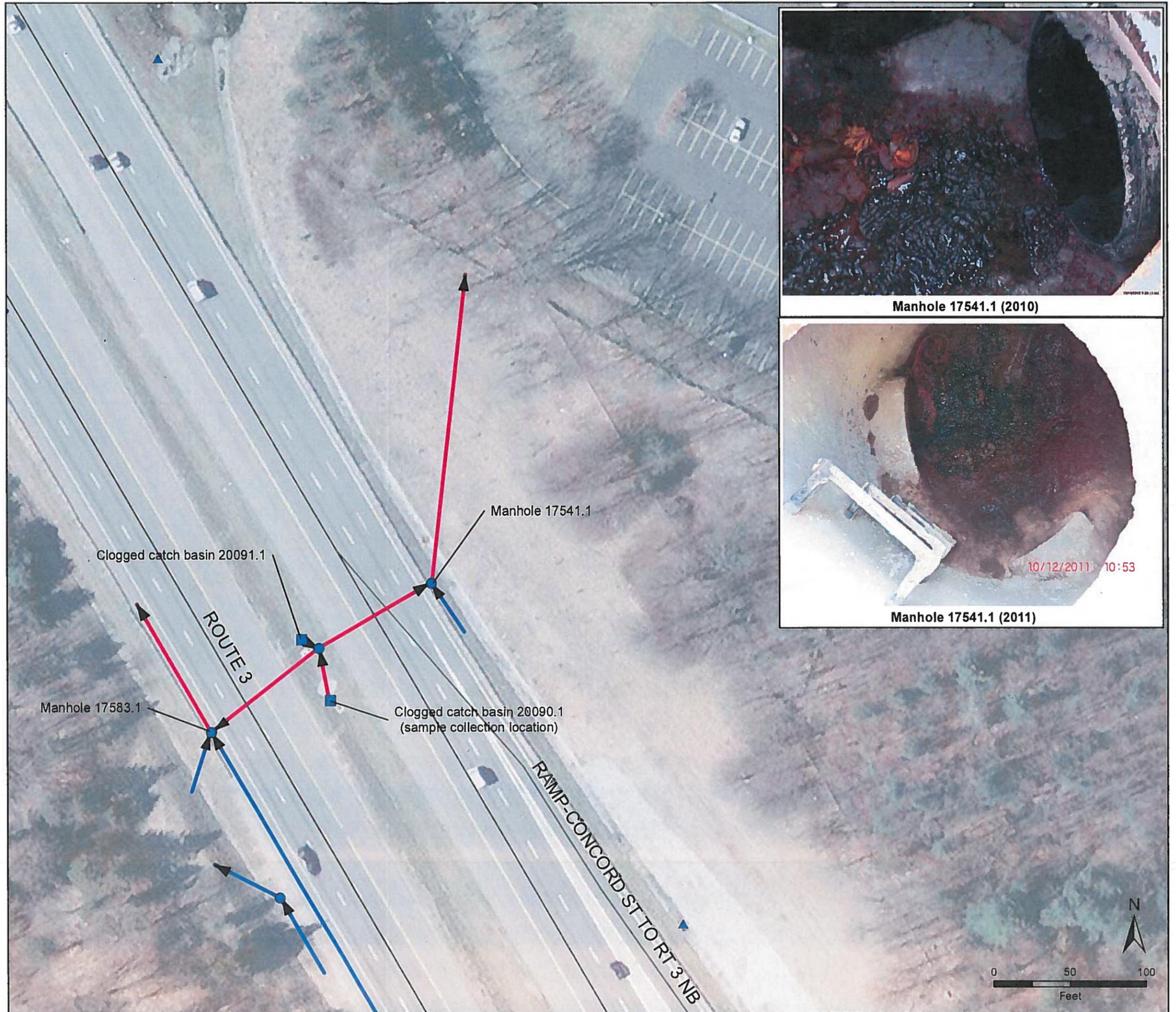
Days since last rain event: 8, (1.09")

Temperature: 64.4

pH: 6.97



- Catchbasin
- Manhole
- ▲ Inlet/Outlet
- Other
- ➔ Pipe
- ➔ Pipe with Flow



Manhole 17541.1 (2010)



Manhole 17541.1 (2011)

Summary for Feature 17585.1/20086.1
Route 3
Billerica, MA
Original Inspection Date: Oct. 20, 2010
Follow Up Date: Oct. 12, 2011

Dry weather flow was previously observed on 10/20/2010 in Manhole 17585.1 on Route 3 in Billerica. The flow originated from an unknown source off of DOT property.

On 10/12/2011 Manhole 17585.1 was reinvestigated to determine the source of the previously identified illicit flow. The original pipe with flow was found to be dry and possibly receives intermittent flow. The main trunkline entering manhole 17585.1 was found with flow during the follow up investigation. The field team traced the flow upstream entering manhole 20086.1. The pipe with flow entering manhole 20086.1 originates off of DOT property in proximity to the nearby apartment complex.

Potential Source:

- Washwater contamination

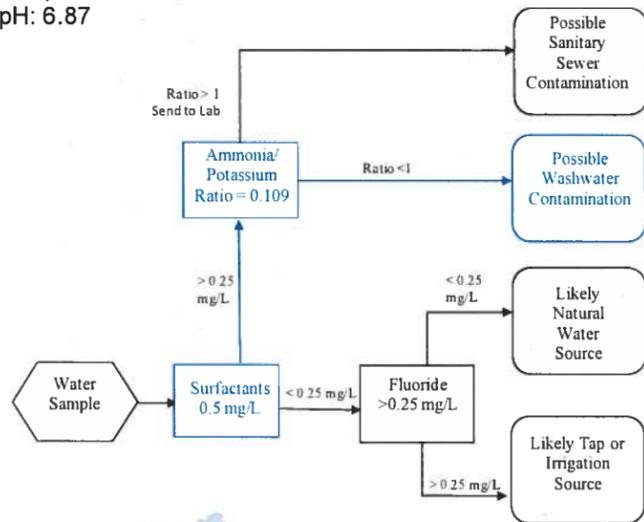
Recommended Actions:

- Notify the town of Billerica and suggest that they conduct a follow-up investigation with the apartment complex.

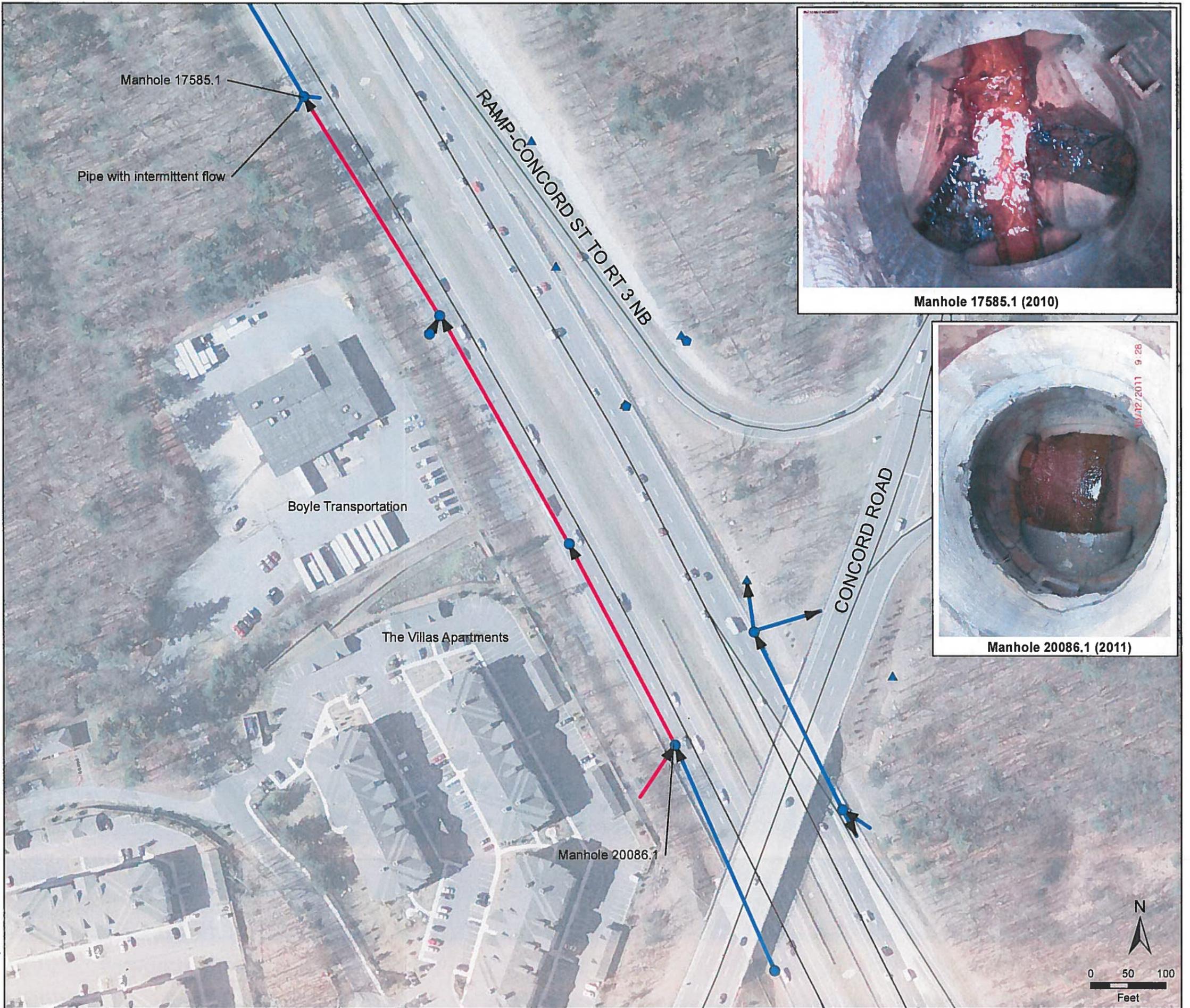
Days since last rain event: 8, (1.09")

Temperature: 60.26

pH: 6.87



- Catchbasin
- Manhole
- ▲ Inlet/Outlet
- ◆ Other
- Pipe
- Pipe with Flow



Summary for Feature 20163

**Mystic Avenue
Somerville, MA**

Original Inspection Date: Sept. 22, 2010

Follow Up Date: Oct. 12, 2011

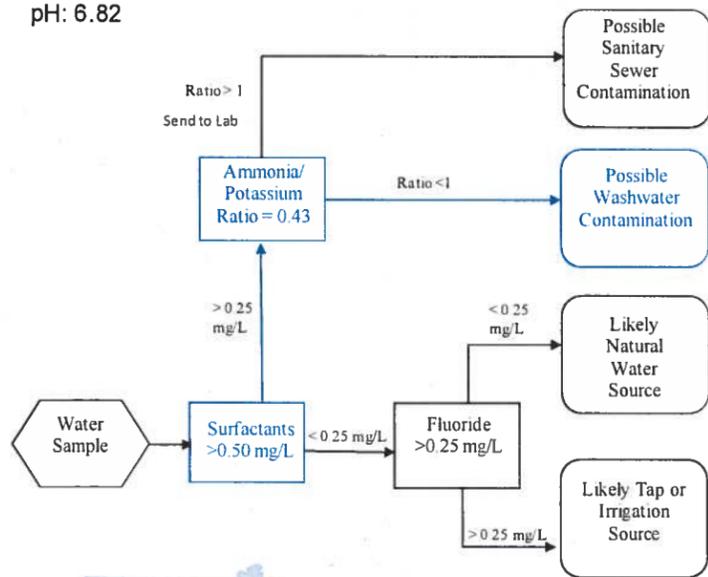
Dry weather flow was previously observed on 9/22/2010 at outfall 15022 discharging into the Mystic River. Initial field testing of the flow was indicated of sanitary sewer contamination.

On 10/12/2011 outfall 15022 was reinvestigated to determine the source of the previously identified illicit flow. The outfall was flowing during the follow up visit. The field team followed the flow upstream to manhole 20163. Field test results suggest washwater contamination as the potential source.

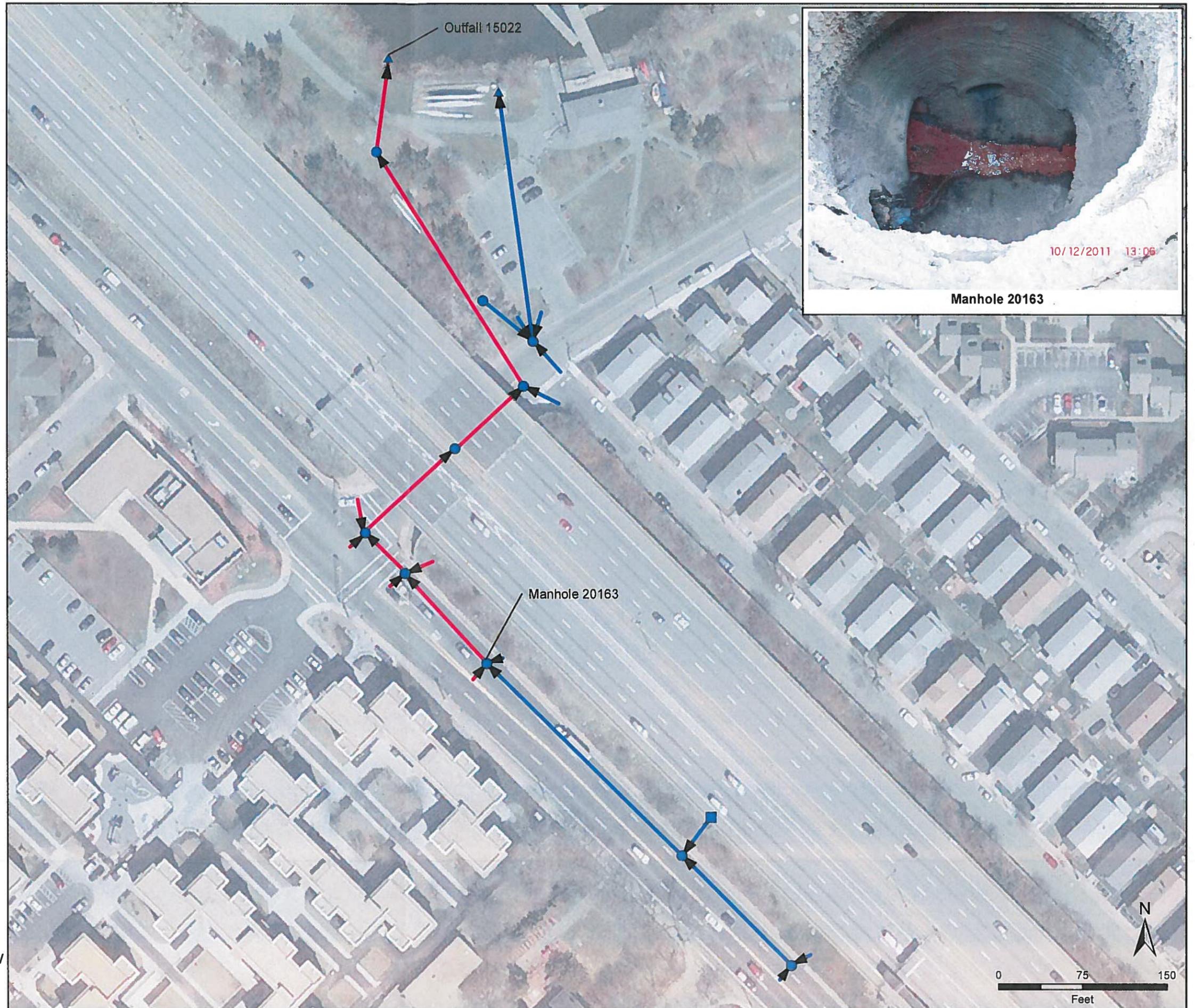
Potential Source:
- Washwater contamination

Recommended Actions:
- Notify the town of Somerville to determine the source

Days since last rain event: 8, (1.09")
Temperature: 65.5
pH: 6.82



- Catchbasin
- Manhole
- ▲ Inlet/Outlet
- ◆ Other
- Pipe
- Pipe with Flow





Appendix F: Summary Report of the 2011 IDDE Program



AECOM
250 Apollo Drive
Chelmsford, MA 01824

Memorandum

| | | | |
|---------|--|-------|---|
| To | Henry Barbaro | Pages | 2 |
| CC | Caroline Hampton | | |
| Subject | 2011 Impaired Assessment IDDE Survey Results | | |
| From | Kaitlin Sylvester | | |
| Date | April 4, 2012 | | |

This memo presents the findings of the 2011 Illicit Discharge Detection and Elimination (IDDE) surveys conducted on stormwater outfalls discharging to pathogen impaired waterbodies from the Massachusetts Department of Transportation's (MassDOT's) roadways in urbanized areas.

AECOM developed an inspection schedule to investigate roadways associated with pathogen impaired waterbodies identified in MassDOT's FY2011 quarterly reports to the Environmental Protection Agency (EPA) (*NPDES MS4 General Permit Compliance Water Quality Impaired Waters Assessments and Mitigation Plan*). Through the impaired waters assessment program, AECOM identified 13 miles of MassDOT roadways discharging to six pathogen impaired waterbodies for the 2011 IDDE survey (Figure 1).

AECOM's small business partner, Comprehensive Environmental Inc (CEI) conducted IDDE surveys in November and December of 2011. Survey work was conducted in accordance with MassDOT's previously established IDDE protocol. Outfalls and junction manholes were inspected for dry weather flow, odors, and other visible indicators of non-stormwater flow. CEI scheduled field surveys during periods of dry weather, classified as less than 0.1 inch of rainfall in the 24 hours prior to the field inspection.

CEI surveyed approximately 13 miles of Mass DOT roadways, within five towns, draining to six pathogen impaired waterbodies (Table 1). During the 2011 survey CEI identified eight suspect flows. Each flow was field tested in accordance with the previously established IDDE testing protocol. Field testing results suggested that all eight flows were the result of natural water sources and are not likely illicit connections (Figure 2). Based on these results AECOM concludes that no further action is necessary on any of the 2011 dry weather flows.

Sincerely,

Kaitlin Sylvester
Kaitlin.sylvester@aecom.com

Attachment

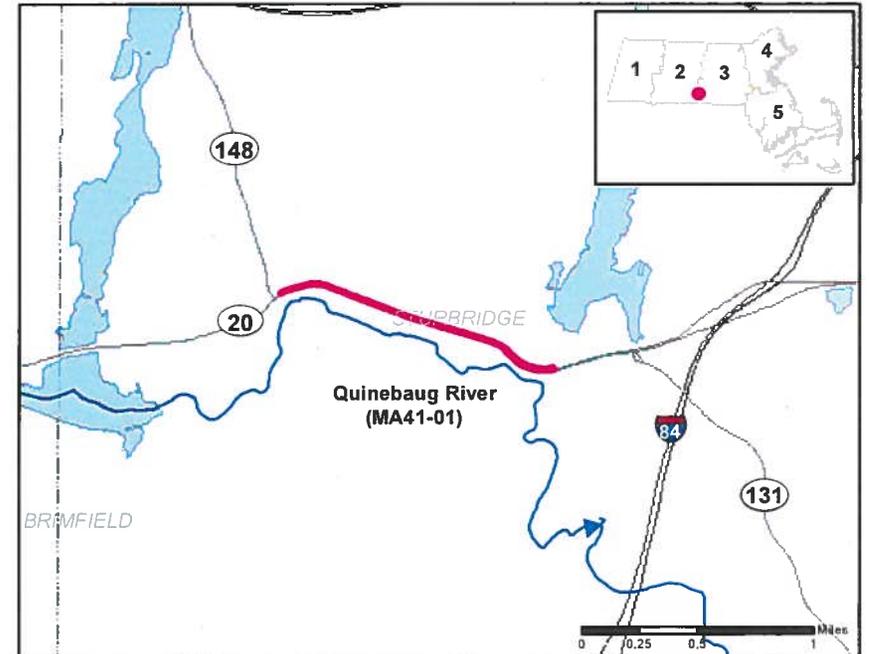
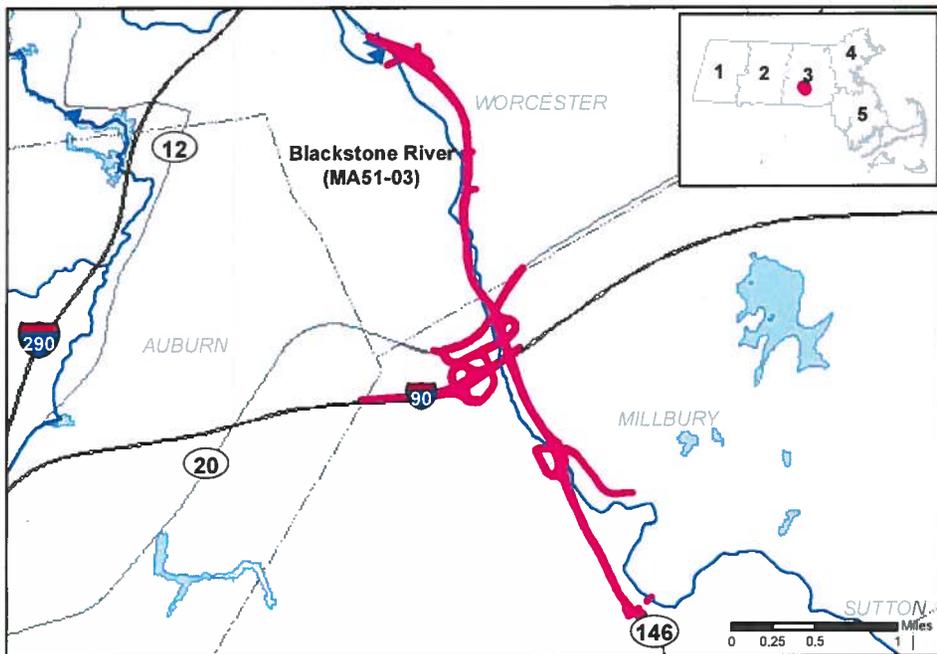
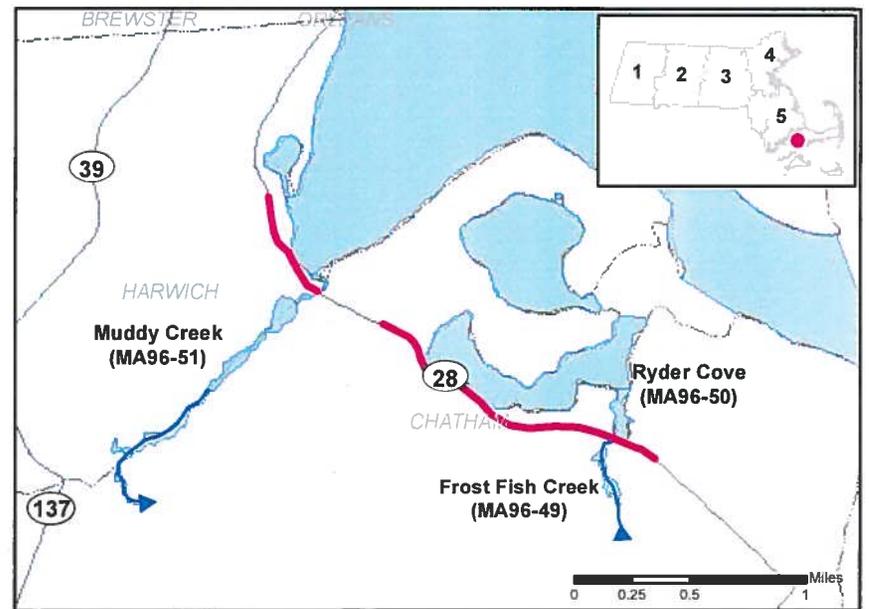
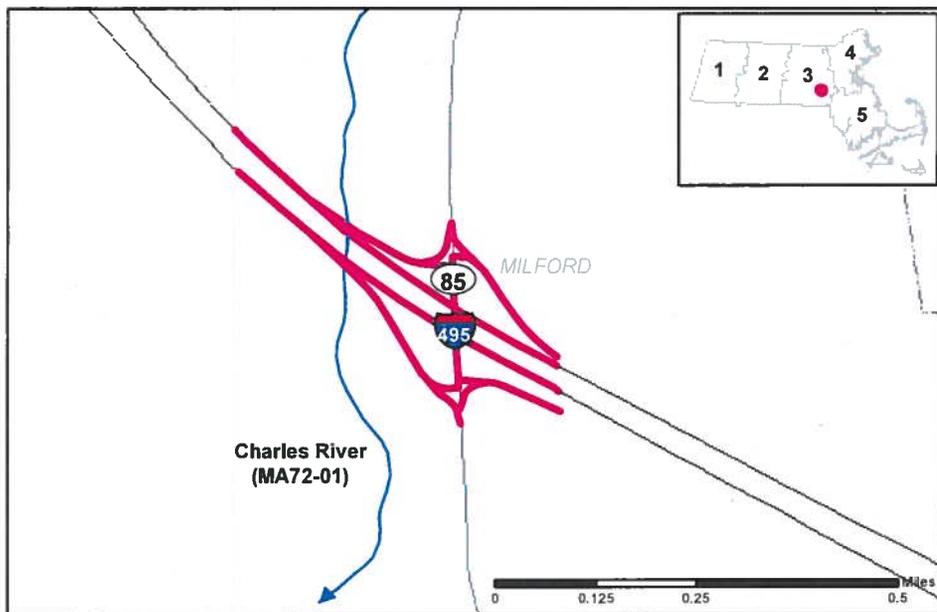


Figure 1
 MassDOT
 Impaired Assessments
 Illicit Discharge Detection and Elimination
 2011 Survey Areas



Table 1 – 2011 IDDE Survey Results

| Town | MassDOT Road | Road Miles Surveyed (Approximate) | Pathogen Impaired Waterbody | Features with Flow | Justification | Results |
|------------------------|---|--|------------------------------------|---------------------------|---------------------------------|-------------------------|
| Worcester/ Millbury | Route 146/ Route 20/ Ramp to I-90 | 8.0 | Blackstone River (MA51-03) | 5 | Low surfactants/Low Fluoride | Natural water source |
| Milford | I-495 and Route 85 ramp | 2.0 | Charles River (MA72-01) | 2 | Low surfactants/Low Fluoride | Natural water source |
| Sturbridge | Route 20 (Main Street) | 1.0 | Quinebaug River (MA41-01) | 1 | Low surfactants/Low Fluoride | Natural water source |
| | | | Frost Fish Creek (MA96-49) | 0 | -- | -- |
| Chatham | Route 28 | 2.0 | Muddy Creek (MA96-51) | 0 | -- | -- |
| | | | Ryder Cove (MA96-50) | 0 | -- | -- |

Figure 2
Illicit Discharge Flow Diagram

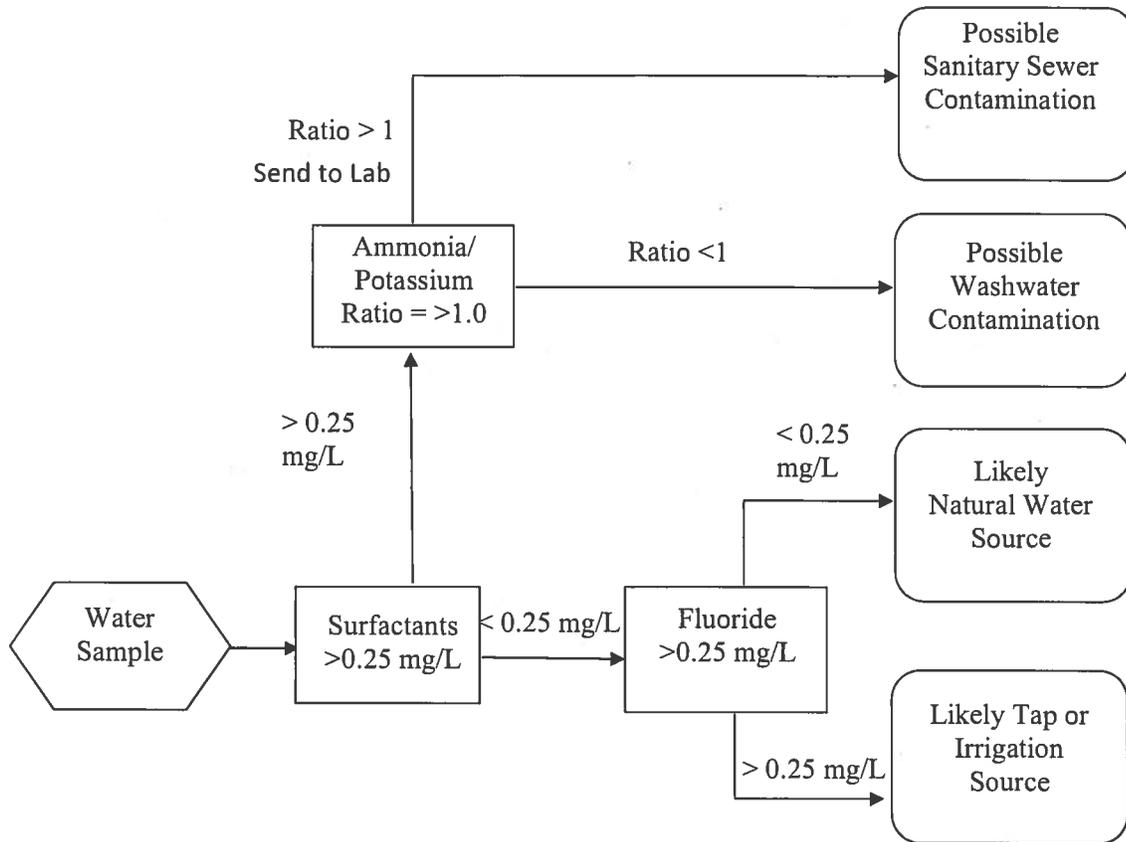


Table 1: Comparative "Fingerprint" (Mean Values) of Flow Types

| Flow Type | NH3 (mg/L) | Potassium (mg/L) | Fluoride (mg/L) |
|-----------------------------|------------|------------------|-----------------|
| Sewage | 25.0 | 12.0 | 0.7 |
| Septage | 87.0 | 19.0 | 0.9 |
| Laundry Washwater | 3.2 | 6.5 | 0.9 |
| Car Washwater | 0.9 | 3.6 | 1.2 |
| Plating Bath (Industrial) | 66.0 | 1009.0 | 5.1 |
| Radiator Flush (Industrial) | 26.0 | 281.0 | 149.0 |
| Tap Water | <0.06 | 1.3 | 0.9 |
| Groundwater | 0.1 | 3.1 | 0.1 |
| Landscape Irrigation | 1.3 | 5.6 | 0.6 |



Appendix G: Active MassDOT Construction NOIs in Permit Year 9

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|-----------------------------------|---------------------|
| <u>MAR10BB23</u> | October 14, 2003 | October 21, 2003 | RT 3 NORTH TRANSP IMPROV PROJ | WESTFORD |
| <u>MAR10B869</u> | February 23, 2004 | March 01, 2004 | CAMBRIDGEPORT ROADWAYS IMPROVE | CAMBRIDGE |
| <u>MAR10BC51</u> | March 15, 2004 | March 22, 2004 | ROADWAY INTERCHANGE IMPROVE | LANCASTER |
| <u>MAR10BC66</u> | March 18, 2004 | March 25, 2004 | RTE 146/HURLEY SQUARE IMPROVE. | WORCESTER |
| <u>MAR10BC68</u> | March 19, 2004 | March 26, 2004 | RTE 146/RTE 20 IMPROVEMENTS | MILLBURY |
| <u>MAR10BE89</u> | June 11, 2004 | June 18, 2004 | RTE 2A RECONSTRUCTION | ARLINGTON |
| <u>MAR10BF22</u> | June 16, 2004 | June 23, 2004 | RECONSTRUCTION OF ROUTE 62 | NORTH READING |
| <u>MAR10BF59</u> | August 04, 2004 | August 11, 2004 | BRIDGE STREET OVER B&M RAILROA | TEMPLETON |
| <u>MAR10BJ51</u> | October 15, 2003 | October 22, 2003 | ROUTE 140 RELOCATION | FRANKLIN |
| <u>MAR10BN00</u> | October 22, 2004 | October 29, 2004 | PARK & RIDE / MAINT DEPOT | BOURNE |
| <u>MAR10BN50</u> | November 08, 2004 | November 15, 2004 | BOURNE FIRE STATION NO.3 | BOURNE |
| <u>MAR10BN72</u> | November 17, 2004 | November 24, 2004 | SAGAMORE ROTARY GRADE SEPARATE | BOURNE |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|------------------------------------|---------------------|
| <u>MAR10BO33</u> | December 17, 2004 | December 24, 2004 | INTERSECTION RECONSTRUCTION | GROTON |
| <u>MAR10BO82</u> | January 04, 2005 | January 11, 2005 | THATCHER ST BRIDGE REPLACEMENT | ATTLEBORO |
| <u>MAR10BP76</u> | February 10, 2005 | February 18, 2005 | INTERCHANGE CONST- BROSNIHAN SQ | WORCESTER |
| <u>MAR10BQ83</u> | March 15, 2005 | March 22, 2005 | SEASIDE RAIL BIKE TRAIL | PLYMOUTH |
| <u>MAR10BR72</u> | April 07, 2005 | April 14, 2005 | MHD BENEDICT ROAD 38030 | PITTSFIELD |
| <u>MAR10BT52</u> | May 26, 2005 | June 02, 2005 | ROUTE 116 RESURFACING | ASHFIELD |
| <u>MAR10BU68</u> | July 08, 2005 | July 29, 2005 | UXBRIDGE-ROUTE 16 | UXBRIDGE |
| <u>MAR10BW71</u> | September 01, 2005 | September 08, 2005 | ROADWAY RECONSTRUCTION | WILMINGTON |
| <u>MAR10BW86</u> | September 07, 2005 | September 14, 2005 | AIRPORT DRIVE RECONSTRUCTION | WORCESTER |
| <u>MAR10BX31</u> | September 23, 2005 | September 30, 2005 | UNION STREET RECONSTRUCTION | FRANKLIN |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|----------------------------------|------------------------|
| <u>MAR10C072</u> | January 26, 2006 | February 02, 2006 | BRIDGE ST BYPASS CONSTRUCTION | SALEM |
| <u>MAR10C315</u> | April 24, 2006 | May 01, 2006 | CONCORD ROAD | BILLERICA |
| <u>MAR10C398</u> | May 15, 2006 | May 22, 2006 | CANTON ROADWAY RECONSTRUCTION | CANTON |
| <u>MAR10C428</u> | May 25, 2006 | June 01, 2006 | ROUTE I-195 RESURFACING | FALL RIVER, WESTPORT |
| <u>MAR10C560</u> | July 06, 2006 | July 13, 2006 | OLD CENTER/COMMON AREA | NORTH ANDOVER |
| <u>MAR10C734</u> | August 29, 2006 | September 05, 2006 | MHD ROUTE 3 IMPROVEMENT PROJ | DUXBURY AND MARSHFIELD |
| <u>MAR10C735</u> | August 29, 2006 | September 05, 2006 | MEDWAY - ROAD RECONSTRUCTION | MEDWAY |
| <u>MAR10C736</u> | August 29, 2006 | September 05, 2006 | ROADWAY RECONSTRUCTION | WORCESTER |
| <u>MAR10C738</u> | August 29, 2006 | September 05, 2006 | ROADWAY IMPROVEMENT PROJECT | HANOVER |
| <u>MAR10C739</u> | August 29, 2006 | September 05, 2006 | ROADWAY RECONSTRUCTION PROJ | RAYNHAM |
| <u>MAR10C867</u> | October 12, 2006 | October 19, 2006 | ROUTE 3 BRIDGE RECONSTRUCTION | ROCKLAND |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|-------------------------------------|---------------------|
| <u>MAR10C881</u> | October 16, 2006 | October 23, 2006 | REPLACEMENT OF TWO BRIDGES | ATTLEBORO |
| <u>MAR10C945</u> | November 07, 2006 | November 14, 2006 | ROADWAY RECONSTRUCTION | DEDHAM / WESTWOOD |
| <u>MAR10CB02</u> | January 10, 2007 | January 17, 2007 | BOSTON ST BRIDGE REPLACEMENT | LYNN-SAUGUS |
| <u>MAR10CB27</u> | January 24, 2007 | January 31, 2007 | RECONSTRUCTION ROUTE 18 | WEYMOUTH |
| <u>MAR10CB69</u> | February 21, 2007 | February 28, 2007 | BRIDGE REPLACEMENT OVER PARKER | NEWBURY |
| <u>MAR10CC46</u> | March 19, 2007 | March 26, 2007 | LYNNFIELD-PEABODY NOISE BARRIE | LYNNFIELD PEABODY |
| <u>MAR10CC68</u> | March 27, 2007 | April 03, 2007 | TURNPIKE MEDIAN BARRIER/RESURFACING | WESTBOROUGH |
| <u>MAR10CD49</u> | April 26, 2007 | May 03, 2007 | CONSTRUCTION OF COMMERCE WAY | ATTLEBORO |
| <u>MAR10CD52</u> | April 27, 2007 | May 04, 2007 | ROTARY RECONSTRUCTION PROJECT | WORCESTER |
| <u>MAR10CD53</u> | April 27, 2007 | May 04, 2007 | BOSTON STREET BRIDGE | LYNN-SAUGUS |
| <u>MAR10CD54</u> | April 30, 2007 | May 07, 2007 | ROUTE 132 IMPROVEMENT PROJECT | BARNSTABLE |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|-------------------------------|-------------------------|
| <u>MAR10CE99</u> | June 12, 2007 | June 19, 2007 | BRIGHTMAN ST BRIDGE REPLACE. | FALL RIVER AND SOMERSET |
| <u>MAR10CH18</u> | August 30, 2007 | September 06, 2007 | BRUCE FREEMAN BIKE PATH | CHELMSFORDLOWELLWESTFOR |
| <u>MAR10CK34</u> | January 08, 2008 | January 15, 2008 | PEABODY BIKE PATH | PEABODY |
| <u>MAR10CM26</u> | March 26, 2008 | April 02, 2008 | Rte 125 Reconstruction | North Andover |
| <u>MAR10CM70</u> | April 11, 2008 | April 18, 2008 | Meridian St Reconstruction | Fall River |
| <u>MAR10CM74</u> | April 22, 2008 | April 29, 2008 | Interstate 495 Reconstruction | Raynham-Middleboro |
| <u>MAR10CM92</u> | April 22, 2008 | April 29, 2008 | Intersection Reconstruction | Orleans |
| <u>MAR10CN44</u> | May 08, 2008 | May 15, 2008 | I-95 Roadway Reconstruction | Weston/Newton/Wellesley |
| <u>MAR10CN55</u> | May 12, 2008 | May 19, 2008 | Interstate 495 Southbound | Milford |
| <u>MAR10CN87</u> | May 22, 2008 | May 29, 2008 | I-495 | Worcester |
| <u>MAR10CO39</u> | June 16, 2008 | June 23, 2008 | Mattapoisett Bikepath Ph 1A | Mattapoisett |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|------------------------------------|---------------------|
| <u>MAR10CO40</u> | June 16, 2008 | June 23, 2008 | Swan River Rd Reconstruction | Dennis |
| <u>MAR10CO41</u> | June 16, 2008 | June 23, 2008 | Route 27 Reconstruction | Kingston |
| <u>MAR10CP11</u> | July 15, 2008 | July 22, 2008 | Route 12 | Auburn |
| <u>MAR10CQ67</u> | August 01, 2008 | August 08, 2008 | Route 68 | Rutland |
| <u>MAR10CQ84</u> | August 11, 2008 | August 18, 2008 | Rte 125 Signal/Intersction Project | Andover |
| <u>MAR10CR26</u> | August 27, 2008 | September 03, 2008 | Franklin Street | Framingham |
| <u>MAR10CR40</u> | September 04, 2008 | September 11, 2008 | Route 28 Bridge Replacement | Methuen |
| <u>MAR10CR61</u> | September 11, 2008 | September 18, 2008 | Woburn I-95 Resurfacing | Woburn |
| <u>MAR10CR97</u> | September 22, 2008 | September 29, 2008 | Newport Ave Bridge | Attleboro |
| <u>MAR10CS07</u> | September 23, 2008 | September 30, 2008 | GULF ROAD BRIDGE | DARTMOUTH |
| <u>MAR10CS12</u> | September 23, 2008 | September 30, 2008 | EDGEHILL RD RECONSTRUCTION | BOURNE |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|--|----------------------|
| <u>MAR10CS39</u> | September 30, 2008 | October 07, 2008 | INTERSTATE 195 RESURFACING | SOMERSET |
| <u>MAR10CS47</u> | October 01, 2008 | October 08, 2008 | NEW BEDFORD BRIDGE REPLACEMENT | NEW BEDFORD |
| <u>MAR10CS77</u> | October 17, 2008 | October 24, 2008 | I-95 Add-A-Lane Project | Randolph to Westwood |
| <u>MAR10CT22</u> | October 22, 2008 | October 29, 2008 | Clipper Ship Rail Trail | Newburyport |
| <u>MAR10D074</u> | January 13, 2009 | January 20, 2009 | I-495 NB | Worcester |
| <u>MAR10D410</u> | May 05, 2009 | May 12, 2009 | ROADWAY RECONSTRUCTION ON FRONT STREET | CHICOPEE |
| <u>MAR10D416</u> | March 30, 2009 | April 06, 2009 | Route 1 Roadway Reconstruction | Topsfield |
| <u>MAR10D430</u> | April 02, 2009 | April 09, 2009 | Pepperell Bridge (P-06-004) | Pepperell |
| <u>MAR10D472</u> | April 10, 2009 | April 17, 2009 | Salisbury Rail Trail Bike Path | Salisbury |
| <u>MAR10D484</u> | April 14, 2009 | April 21, 2009 | Route 31 | Dudley |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|---------------------------------|------------------------|
| <u>MAR10D513</u> | April 21, 2009 | April 28, 2009 | Salem St. Reconstruction | Wakfield |
| <u>MAR10D580</u> | May 04, 2009 | May 11, 2009 | I-495 | Bolton,Harvard,Boxboro |
| <u>MAR10D653</u> | May 18, 2009 | May 25, 2009 | Roadway Recon and Related Work | Newton/Watertown |
| <u>MAR10D697</u> | May 28, 2009 | June 04, 2009 | SOUTH HADLEY, 2 BRIDGE REHABILI | SOUTH HADLEY |
| <u>MAR10D699</u> | May 28, 2009 | June 04, 2009 | Route 140 | Shrewsbury |
| <u>MAR10D760</u> | June 15, 2009 | June 22, 2009 | Blackstone River Road | Worcester |
| <u>MAR10D918</u> | July 26, 2009 | August 02, 2009 | INTERSTATE I-91 NB AND SB | SPRINGFIELD CHICOPEE |
| <u>MAR10D981</u> | August 12, 2009 | August 19, 2009 | Goldsmith Street | Littleton |
| <u>MAR10DA11</u> | August 19, 2009 | August 26, 2009 | Roadway Recon and Related Work | Newton |
| <u>MAR10DA19</u> | August 20, 2009 | August 27, 2009 | Roadway Recon and Related Work | Dedham |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|--|---------------------|
| <u>MAR10DA73</u> | September 11, 2009 | September 18, 2009 | Route 62 | Hubbardston |
| <u>MAR10DA85</u> | September 16, 2009 | September 23, 2009 | King St. and Upper Union St. I-495 | Franklin |
| <u>MAR10DE70</u> | January 21, 2010 | January 28, 2010 | MassDOT | Southbridge |
| <u>MAR10DF09</u> | February 09, 2010 | February 16, 2010 | Charles River/Alewife Connector Multi-Use Path - Phase I | Watertown |
| <u>MAR10DG67</u> | March 25, 2010 | April 01, 2010 | Route 140 | Gardner |
| <u>MAR10DG82</u> | March 30, 2010 | April 06, 2010 | Roadway Intersection | Fitchburg |
| <u>MAR10DH05</u> | April 02, 2010 | April 09, 2010 | Charles River Alewife Connector | Watertown |
| <u>MAR10DH12</u> | April 06, 2010 | April 13, 2010 | Pulaski Boulevard | Bellingham |
| <u>MAR10DH43</u> | April 13, 2010 | April 20, 2010 | Routes 12/16/193 | Webster |
| <u>MAR10DI11</u> | May 03, 2010 | May 10, 2010 | Rte. 128 Danvers Reconstruction | Danvers |
| <u>MAR10DI94</u> | May 27, 2010 | June 03, 2010 | MAIN AND BROAD STREET | WESTFIELD |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|---|-------------------------|
| <u>MAR10DJ27</u> | June 04, 2010 | June 11, 2010 | Route 131 | Southbridge/Sturbridge |
| <u>MAR10DJ48</u> | June 09, 2010 | June 16, 2010 | ROADWAY RECON RELATED WORK RT20 AND 10/202 | WESTFIELD |
| <u>MAR10DJ80</u> | June 16, 2010 | June 23, 2010 | Route 1 Bridge over Center Street | Danvers |
| <u>MAR10DK42</u> | July 01, 2010 | July 08, 2010 | Clippership Drive | Medford |
| <u>MAR10DK44</u> | July 02, 2010 | July 09, 2010 | Route 70/Lincoln St. | Worcester |
| <u>MAR10DK48</u> | July 02, 2010 | July 09, 2010 | Route 2 Bridge over West Main St. | Westminster |
| <u>MAR10DK64</u> | July 08, 2010 | July 15, 2010 | Walnut Street at Salem Street | Lynnfield |
| <u>MAR10DK65</u> | July 08, 2010 | July 15, 2010 | Audubon Road | Wakefield |
| <u>MAR10DK92</u> | July 13, 2010 | July 20, 2010 | HALL OF FAME STREETSCAPE | SPRINGFIELD |
| <u>MAR10DL24</u> | July 20, 2010 | July 27, 2010 | Bates Bridge Replacement Approach Reconstruction | Groveland and Haverhill |
| <u>MAR10DM79</u> | October 08, 2010 | October 15, 2010 | BRIDGE REPLACEMENT, P- 09-004 | PHILLIPSTON |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|---|---------------------|
| <u>MAR10DO01</u> | October 01, 2010 | October 08, 2010 | Phase II - Middlesex Turnpike Extension | Burlington |
| <u>MAR10DO24</u> | October 05, 2010 | October 12, 2010 | ROADWAY CONSTRUCTION | LENOX |
| <u>MAR10DP35</u> | October 29, 2010 | November 05, 2010 | Hamilton Canal Walkway and Bridge Rehabilitation | Lowell |
| <u>MAR10DQ75</u> | December 14, 2010 | December 21, 2010 | Millbury Street | Auburn |
| <u>MAR10DS45</u> | March 09, 2011 | March 16, 2011 | I-93 Superstructure Replacement | Medford |
| <u>MAR10DS09</u> | March 16, 2011 | March 23, 2011 | STREETSCAPE IMPROVEMENTS | PITTSFIELD |
| <u>MAR10DS69</u> | March 17, 2011 | March 24, 2011 | ROADWAY RECONSTRUCTION | PERU |
| <u>MAR10DT13</u> | March 31, 2011 | April 07, 2011 | ROADWAY RECONSTRUCTION | BUCKLAND |
| <u>MAR10DT21</u> | April 01, 2011 | April 08, 2011 | KINGS BRIDGE RD BRIDGE REP | BRIMFIELD/PALMER |
| <u>MAR10DT22</u> | April 01, 2011 | April 08, 2011 | ROUTE 116 - ROADWAY RECON. | AMHERST |
| <u>MAR10DT34</u> | April 06, 2011 | April 13, 2011 | Roadway Reconstruction Macy Street and Elm Street Route 110 | Amesbury |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|-----------------------------------|---------------------|
| <u>MAR10DU32</u> | April 29, 2011 | May 06, 2011 | Route 146 NB | Sutton-Uxbridge |
| <u>MAR10DT45</u> | May 03, 2011 | May 10, 2011 | ROUTE 5- RIVERDALE STREET | Hampden |
| <u>MAR10DU01</u> | May 04, 2011 | May 11, 2011 | Union Street Improvements | Norfolk |
| <u>MAR10DU78</u> | May 09, 2011 | May 16, 2011 | MANHAN RAIL TRAIL | Hampshire |
| <u>MAR10DU89</u> | May 12, 2011 | May 19, 2011 | Route 20 | Auburn |
| <u>MAR10DU99</u> | May 13, 2011 | May 20, 2011 | Roadway Reconstruction | Salem |
| <u>MAR10DU54</u> | May 16, 2011 | May 23, 2011 | Turnpike Street | Canton |
| <u>MAR10DV22</u> | May 19, 2011 | May 26, 2011 | MassDOT - Chelmsford-Salt Storage | Chelmsford |
| <u>MAR10DV50</u> | May 25, 2011 | June 01, 2011 | Forest Street | Arlington |
| <u>MAR10DV68</u> | May 31, 2011 | June 07, 2011 | Bridge Replacement | Lowell |
| <u>MAR10DV93</u> | June 03, 2011 | June 10, 2011 | Blackstone Canal District | Worcester |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|--|---------------------|
| <u>MAR10DW15</u> | June 09, 2011 | June 16, 2011 | Roadway Reconstruction | Chelmsford |
| <u>MAR10DW22</u> | June 10, 2011 | June 17, 2011 | MassDOT Contract No. 66937 Town | Tewksbury |
| <u>MAR10DW31</u> | June 13, 2011 | June 20, 2011 | MassDOT Highway Division Signal | Lexington |
| <u>MAR10DW50</u> | June 15, 2011 | June 22, 2011 | MANHAN RAIL TRAIL | Hampshire |
| <u>MAR10DW69</u> | June 23, 2011 | June 30, 2011 | ROUTE 20 ROUTE 67 BRIDGE | Hampden |
| <u>MAR10DW77</u> | June 24, 2011 | July 01, 2011 | Canal St over the Spickett River | Lawrence |
| <u>MAR10DX18</u> | July 05, 2011 | July 12, 2011 | Route 9 | Worcester |
| <u>MAR10DX21</u> | July 06, 2011 | July 13, 2011 | Roadway Reconstruction Rt 125 | Haverhill |
| <u>MAR10DX28</u> | July 11, 2011 | July 18, 2011 | Middle St. @Winter/Washington (Rt. 53) Streets ,Weymouth | Weymouth |
| <u>MAR10DX45</u> | July 12, 2011 | July 19, 2011 | Resurfacing and Related Work | Waltham |
| <u>MAR10DX48</u> | July 12, 2011 | July 19, 2011 | Route 122 Bridge over Blackstone River | Northbridge |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|---|-------------------------|
| <u>MAR10DX75</u> | July 20, 2011 | July 27, 2011 | Roadway Reconstruction Rte 113 | Tyngsborough |
| <u>MAR10DY11</u> | July 28, 2011 | August 04, 2011 | SPRINGFIELD: MAIN STREET | Hampden |
| <u>MAR10DX72</u> | August 08, 2011 | August 15, 2011 | Alford Street Drawbridge, Boston | Boston |
| <u>MAR10DY95</u> | August 16, 2011 | August 23, 2011 | ROUTE 10/202 (COLLEGE HIGHWAY) | Hampden |
| <u>MAR10DZ34</u> | August 23, 2011 | August 30, 2011 | H-12-005 Ferry Road over the BM and MBTA railroads - Bridge | Haverhill |
| <u>MAR10E025</u> | September 19, 2011 | September 26, 2011 | University Ave Bridge Re-Alignment | Lowell |
| <u>MAR10E106</u> | October 12, 2011 | October 19, 2011 | Intersection Improvements East St Livingston St | Tewksbury |
| <u>MAR10E001</u> | October 21, 2011 | October 28, 2011 | INTERSTATE 91 | Hampden |
| <u>MAR10E202</u> | November 09, 2011 | November 16, 2011 | Belmont to Somerville Bike Path | Belmont |
| <u>MAR10E292</u> | December 20, 2011 | December 27, 2011 | I-395 | Oxford |
| <u>MAR10E324</u> | January 04, 2012 | January 11, 2012 | Route 20 | Northborough-Shrewsbury |

Active MassDOT Construction NOIs – Permit Year 9

| <u>Tracking Number</u> | <u>NOI Submitted Date</u> | <u>Date of Coverage</u> | <u>Project/ Site Name</u> | <u>Project City</u> |
|------------------------|---------------------------|-------------------------|---------------------------|---------------------|
| <u>MAR10E434</u> | February 06, 2012 | February 13, 2012 | W. Dudley Road Bridge | Dudley |
| <u>MAR10E513</u> | March 08, 2012 | March 15, 2012 | Route 9 | Worcester |



Appendix H: Construction Related Runoff Problems

Status of Sediment Issues as of Permit Year 9

| District | Town | Reason for Suspect | Identification Source | Location | MassDOT owns discharge? | Notes Regarding Review of IDDE |
|----------|---------|--|-----------------------|---|-------------------------|--|
| 2 | Holyoke | Sediment from Steep Driveway Clogging Catchbasin | District 2 | 615 Northampton Street (Route 5) Holyoke, MA | Yes | <p>A letter was sent to the location on 12/12/2011. After 60 days it was noted that the property owner did not contact MassDOT. A site visit revealed no changes to the situation. This information was reported to our Legal Section and a meeting occurred to discuss the situation.</p> <p>During the meeting between MassDOT's Environmental and Legal Sections, a plan was formulated to work with the property owner on a one-on-one basis. This plan will be implemented as part of next year's permit activities and the results will be documented in the Annual Report for Permit Year 10.</p> |
| 2 | Palmer | Flow and Sediment from Driveway Clogging MassDOT Drain Inlet | District 2 | 571 Old Warren Road Driveway on Rt. 67 Palmer, MA | Yes | <p>The access permit has expired and the construction is deficient. Clogging of the catch basin was still occurring. A letter was sent to the location on 12/12/2011. After 60 days it was noted that the property owner did not contact MassDOT. A site visit was performed; it revealed no changes to the situation. This information was reported to our Legal Section and a meeting occurred to discuss the situation.</p> <p>During the meeting between MassDOT's Environmental and Legal Sections, a plan was formulated to work with the property owner on a one-on-one basis. This plan will be implemented as part of next year's permit activities and the results will be documented in the Annual Report for Permit Year 10.</p> |



| District | Town | Reason for Suspect | Identification Source | Location | MassDOT owns discharge? | Notes Regarding Review of IDDE |
|----------|------|---|-----------------------|---|-------------------------|---|
| 2 | Ware | Flow and Sediment Obstructing MassDOT Drainage System | District 2 | 439 Belchertown Road (Route 9) Ware, MA | Yes | <p>The access permit has expired and the construction is incomplete. Also, a few drainage violations still exist. A letter was sent to the location on 12/12/2011. After 60 days it was noted that the property owner did not contact MassDOT. A site visit revealed no changes to the situation. This information was reported to our Legal Section and a meeting occurred to discuss the situation.</p> <p>During the meeting between MassDOT's Environmental and Legal Sections, a plan was formulated to work with the property owner on a one-on-one basis. This plan will be implemented as part of next year's permit activities and the results will be documented in the Annual Report for Permit Year 10.</p> |



Appendix I: BMP Maintenance Schedule Summary

Summary of Compliance with Maintenance Matrix - Statewide Permit Year 9

| Drainage Asset | Area/ Note | Activity Schedule | | | | | Permit Year 9 Statewide | |
|--|--|-------------------|----------|----------------------------|----------|--------|-------------------------|---|
| | | Mow | Sweep | Inspect | Clean | Repair | Was Schedule Met? | Comments |
| | Maintenance Facilities/ Material Storage Yards | Annually | ANI | Annually | -- | ANI | Yes | Some districts have the HazMat coordinator inspect monthly. |
| Roads | Roads/ Weigh Stations/ Rest Areas | Annually | Annually | Annually | -- | ANI | Yes | Some districts perform maintenance on an as needed basis. |
| STORMWATER BMPs | | | | | | | | |
| | Maintenance Facilities/ Material Storage Yards | -- | -- | Annually (after snow melt) | ANI | ANI | Yes | Cleaned more often if needed based on inspections. Ongoing in District 6. |
| Catch Basins | Roads/ Weigh Stations/ Rest Areas | -- | -- | Annually | ANI | ANI | Yes | Contract to clean all ~13,000 catch basins in District 2. |
| | Maintenance Facilities/ Material Storage Yards | Annually | -- | Annually (after snow melt) | ANI | ANI | Yes | Not applicable to all Districts (none found). |
| Extended Detention Basins | Roads/ Weigh Stations/ Rest Areas | Annually | -- | Annually | ANI | ANI | Yes | In one district, schedule met for roads only. |
| | Maintenance Facilities/ Material Storage Yards | -- | -- | Annually (after snow melt) | ANI | ANI | Yes | In one district, maintenance and repairs done on an as needed basis. |
| Water Quality Swales (including dry swales, bio-filter swales, and wet swales) | Roads/ Weigh Stations/ Rest Areas | -- | -- | Annually | ANI | ANI | Yes | In one district, not every waterway had been inspected at the time of reporting. |
| | Maintenance Facilities/ Material Storage Yards | -- | -- | Annually (after snow melt) | ANI | ANI | Yes | |
| Sediment Forebays | Roads/ Weigh Stations/ Rest Areas | Twice per year | -- | Annually | ANI | ANI | Yes | In one district, schedule met for roads only. |
| Channel Systems | | Annually | -- | -- | Annually | ANI | Yes | In one district, not every channel had been inspected at the time of reporting. |
| Outlet Sediment Traps | | -- | -- | Annually | ANI | -- | Yes | In one district inspected as needed if issue reported. |
| Vegetated Filters Strip | | Annually | -- | Annually | ANI | ANI | Yes | |
| Wet Pond | | Annually | -- | Annually | ANI | ANI | Yes | |
| Enhanced Wet Pond | | Annually | -- | Annually | ANI | ANI | Yes | |
| Constructed Storm Water Wetlands | | Annually | -- | Annually | ANI | ANI | Yes | |
| Recharge Basin | | Annually | -- | Twice per year | ANI | ANI | Yes | In one district, maintenance and repairs done on an as needed basis. |
| Leaching Catch Basins | | -- | -- | Annually | ANI | ANI | Yes | Route 119 Townsend Nov-Dec 2010, leaching catch basins were connected to an existing drainage system. |
| Subsurface Recharge Systems | | -- | -- | Twice annually | ANI | ANI | N/A | None known |
| Recharge Trenches and Beds | | -- | -- | Annually | ANI | ANI | N/A | None known |
| Recharge Dry Wells and Galleys | | -- | -- | Annually | ANI | ANI | N/A | None known |
| Filter Systems | | Regular Raking | -- | Annually | Annually | ANI | N/A | None known |
| Sand Filters | | -- | -- | Annually | ANI | ANI | N/A | None known |
| Organic Filters | | -- | -- | Annually | ANI | ANI | N/A | None known |
| Water Quality Inlet | | -- | -- | Annually | Annually | ANI | Yes | |
| Flow Splitters | | -- | -- | Annually | ANI | ANI | N/A | None known |
| Impoundment Structures | | -- | -- | Annually | ANI | ANI | N/A | None known |
| Check Dams | | -- | -- | Annually | ANI | ANI | No | Not inspected; Repaired and cleaned as needed in one district. |

Summary of Compliance with Maintenance Matrix - Statewide Permit Year 9

| Drainage Asset | Area/ Note | Activity Schedule | | | | | Permit Year 9 Statewide | |
|--|---|-------------------|----------|--------------------------------------|-------|--------|-------------------------|---|
| | | Mow | Sweep | Inspect | Clean | Repair | Was Schedule Met? | Comments |
| OTHER | | | | | | | | |
| Oil/ Water Separators | Self-test alarm, if so equipped | -- | -- | Weekly | -- | -- | Yes | |
| Holding Tanks - UST | Gauge tank to determine if greater than 75% full. | -- | -- | Weekly | -- | -- | Yes | Some districts perform repairs/maintenance as needed or quarterly instead of weekly inspections (based on historic review and usage). |
| Holding Tanks - AST | Gauge tank to determine if greater than 75% full. | -- | -- | Monitor and set appropriate schedule | -- | -- | Yes | |
| Septic System | Record water meter readings and report to DHC. | -- | -- | Quarterly | -- | -- | Yes | In one District cleaned annually. |
| NPDES Construction Site - Site Inspections | | -- | -- | Weekly | -- | -- | Yes | |
| NPDES Construction Site - Repair of erosion controls | | -- | -- | Weekly | ANI | -- | Yes | |
| NPDES Construction Site - Cleaning of storm water structures | | -- | -- | Weekly | ANI | -- | Yes | |
| District 3 Specific Maintenance Requirements | | | | | | | | |
| Roads | Quinsigamond and Flint Pond Watershed Leesville Pond in Kettle Brook Sub-basin; Mill Brook Tributary Basin; and Monoosnoc Basin | Annually | Annually | Annually | -- | ANI | Yes | |
| | Salisbury Pond Watershed | Annually | Annually | Annually | -- | ANI | Yes | |
| Catch Basins | Roads within Quinsigamond and Flint Pond Sub-basin; Leesville Pond in Kettle Brook Sub-basin; Mill Brook Tributary Basin; and Monoosnoc Basin | -- | -- | 6 months | ANI | ANI | Yes | |
| | Roads within Salisbury Pond Watershed | -- | -- | 6 months | ANI | ANI | Yes | |
| Extended Detention Basins | Roads within Quinsigamond and Flint Pond Sub-basin; Leesville Pond in Kettle Brook Sub-basin; Mill Brook Tributary Basin; and Monoosnoc Basin | Annually | -- | 6 months | ANI | ANI | Yes | |
| | Roads within Salisbury Pond Watershed | Annually | -- | 6 months | ANI | ANI | Yes | |
| Water Quality Swales (including dry swales, bio-filter swales, and wet swales) | Roads within Quinsigamond and Flint Pond Sub-basin; Leesville Pond in Kettle Brook Sub-basin; Mill Brook Tributary Basin; and Monoosnoc Basin | -- | -- | 6 months | ANI | ANI | Yes | |
| | Roads within Salisbury Pond Watershed | -- | -- | 6 months | ANI | ANI | Yes | |
| Sediment Forebays | Roads within Quinsigamond and Flint Pond Sub-basin; Leesville Pond in Kettle Brook Sub-basin; Mill Brook Tributary Basin; and Monoosnoc Basin | -- | -- | 6 months | ANI | ANI | Yes | |
| | Roads within Salisbury Pond Watershed | -- | -- | 6 months | ANI | ANI | Yes | |
| ANI - As Needed per Inspection | | | | | | | | |
| N/A - Not Applicable | | | | | | | | |



Appendix J: Public Well Supply Matrix and Salt Remediation Program

BMP 6G APPENDIX J

| <i>Property Owner</i> | <i>Owner/Town</i> | <i>Address</i> | <i>Date of Initial Complaint</i> | <i>Last Data Point (mg/l)</i> | <i>General Comment Section</i> |
|-----------------------|---------------------|---|--|--|--|
| Andover | Andover | Chris Cronin, Acting Director Department of Public Works 397 Lowell Street Andover, Ma 01810-4416 Telephone (978) 623-8350 | 2/22/2000 | 2010 PWS, Na = 67.8 | Poly style storage was constructed in 2001 where there previously was no outside storage from 1998 through 2001. Based on monthly sampling, Town requested a reduced salt zone along I-93 and I-495 and relocation of the salt storage shed via July 2004 correspondence. Section of I-495 and 93 has been designated as a reduced salt zone. Reduced salt zone first implemented in 2005-2006 winter season. Proposed construction of new salt shed at Andover River Road/93 to be constructed in fall 2012. |
| Cambridge | Cambridge Reservoir | Chip Norton, Watershed Mgr Cambridge Water Dept. 250 Fresh Pond Parkway Cambridge, MA 02138 (671) 349-4781 | Regular monitoring began 1987 | March 2012 Hobbs Brook (at intake), Na=108, Cl=179 Stoney Brook (at intake) Na=67, Cl= 179 Fresh Pond(at intake) Na=62, Cl=125 | Reservoir is adjacent to 128 in Towns of Lexington, Lincoln, Waltham, and Weston. There is a designated reduced salt zone for this area covering 24.6 linear miles and 177.8 lane miles in the vicinity covering sections of Route 2, 2A and 128. |
| Dedham/ Westwood | Dedham/ Westwood | Eileen Commene Executive Director Dedham-Westwood Water Dept. 50 Elm Street, Dedham, MA 02027-9137 Telephone (781) 329-7090 | File alluded to 3/7/88 correspondence from DWWD requesting MHD refrain from using salt along sections of Rt 128. 12/19/97 telecon b/w Sam Pollock and Mark Hollowell of Anderson- Nichols regarding DEP req'd monthly monitoring and concerns for White Lodge Well #5 | 2/2011 Well #5, Na = 89 Cl = 195 | Concern is over municipal well located to the North of I-95/128 near University Avenue. The well is located in Fowl Meadow Aquifer that recharges White Lodge Well No. 5. Correspondence written in March 2004 indicating that we would monitor salt application. MassDOT with UMass has installed monitoring wells and stormwater outfall monitors to evaluate NaCl sources to Fowl Meadow. MassDOT and UMass have been conducting monthly sampling of well network. The town contacted MassDOT following completion of the study in 2010 to request a RSZ. The results of a mass- balance study indicate that MassDOT's contribution of NaCl is 78%. On Dec 17, 2011 we held tailgate training at the Dedham depot, we identified an overlap, and have committed equipment with closed-loop controllers to this section of I-95. Additionally, MassDOT |

BMP 6G APPENDIX J

| <i>Property Owner</i> | <i>Owner/Town</i> | <i>Address</i> | <i>Date of Initial Complaint</i> | <i>Last Data Point (mg/l)</i> | <i>General Comment Section</i> |
|--|-------------------|--|--|--|---|
| | | | | | met with DWWD in November 2011 and explained that with improved BMP's, new technology and operational improvements, we should see a significant reduction in NaCl without designating a RSZ, however it may take a few years to validate. The DWWD sent us a letter in February 2012 stating that although they appreciate the changes we've made, they are still requesting a RSZ. |
| North Chelmsford | North Chelmsford | Bruce J. Harper Superintendent North Chelmsford Water District 64 Washington Street PO Box 655 North Chelmsford, MA 01863-0655 Telephone (978) 251-3931 | mid 1980s | 3/2/2012 # 1 Na = 168 # 2 Na = 61.4 # 3 Na = 112 # 4 Na = 136 | There is a reduced salt zone in East and North Chelmsford for 153 lane miles consisting of section of Route 3, 3A, 4 and Lowell Connector. High arch gambrel salt shed constructed in fall 2011. |
| Rousselot, Peabody Inc. Formerly Eastman Gelatin | Peabody | Eileen Watkins, Env. Mgr. 227 Washington St. Peabody, MA 01960 (978) 573-3757 | ~1965 | 2/2012 Pumphouse 2A, Cl=107 Pumphouse 3A, Cl=190 Pumphouse 4A, Cl=134 Pumphouse 5A, Cl=132 Pumphouse 6, Cl=268 Pumphouse 11, Cl=208 Pumphouse 11A, Cl=188 | Rousselot industrial wells in close proximity to I-95. This area is within a reduced salt zone. Monthly data is collected by Rousselot. 2011-2012 winter season MassDOT began pre-treating this section of I-95 with liquid magnesium chloride. |
| Hanover | Hanover | Douglas Billings, Water Supervisor Hanover Water Dept. 40 Pond Street Hanover, MA 02339 826-3189 (781) | Being sampled for baseline data due to roadway project | 2/19/2012 Inlet (raw): Na=50, Cl=95 Outlet: Na=49, Cl=98 Sta. 2(raw): Na=51, Cl=100 Sta. 3(raw): Na=50, Cl=95 Stream: Na=38, Cl=70 | MassDOT continues to analyze sodium and chloride data to evaluate impacts to the public water supply following the construction of additional travel lanes along Route 53. |
| Middleboro | Middleboro | Joseph Silva, Water Superintendent Dept. of Public Works 48 Wareham Street Middleboro, MA | 8/15/1989 & 2/91 | 3/7/2012 Miller Na = 36.5 Cl = 58.9 Rock 1 Na = 47.2 Cl = 81.8 Rock 2 Na =74.8, Cl=140 Tispaquin Na=90.1, Cl=172 | 3/20/06 mtg between District 5 and Env. Personnel to discuss town wells and operational improvements. 3/29/06 letter forwarded to water district. MassDOT continues to implement reduced |

BMP 6G APPENDIX J

| <i>Property Owner</i> | <i>Owner/Town</i> | <i>Address</i> | <i>Date of Initial Complaint</i> | <i>Last Data Point (mg/l)</i> | <i>General Comment Section</i> |
|-----------------------|-------------------|---|----------------------------------|---|--|
| | | (508) 946-2482 | | East Grove Na=67, Cl=122 | salt zone in the area for 40 lane miles of Route 28 and 495. |
| Wilmington | Wilmington | Shelly Newhouse, R.S. Director of Public Health 12 Glen Road, Wilmington, MA 01887 (978) 658-4298 | 4/29/2005 & 10/19/2011 | Browns Crossing (raw) 11G Na=120, Cl=220 Barrows (raw) 02G Na=130, Cl= 210 | Applied for RSZ in 2005 but it was noted that MassDOT wasn't the primary source. The Town reached out to MassDOT again in 2011 with concerns regarding elevated sodium in their PWS. MassDOT sent a letter to Wilmington in December 2011 and explained that with improved BMP's, new technology and operational improvements, we should see a significant reduced use of NaCl without designating a RSZ, however the town has not accepted that as a solution. Due to the highly developed area we have expressed to Wilmington that they should also explore BMPs to address NaCl concentrations. We held a tailgate training in January to discuss the BMP's. On March 15, 2012 a meeting was held with the BOH, MassDOT, and MassDEP to discuss their concerns, and MassDOT agreed to improved BMP's, and a follow up meeting in the fall. MassDEP has also expressed that BMP's seem appropriate and should be given an opportunity to work. However, despite our efforts they submitted another request for a reduced salt zone. |



Appendix K: TMDL Review Table

TMDL Review Table

| GENERAL TMDL INFORMATION | | | | | | | WATERBODY SPECIFIC TMDL INFORMATION | |
|--|----------------------|---------------|---|--|---|--|---|-----------------------------|
| Basin/TMDL Name | Pollutant of Concern | WLA Included? | Are BMP recommendations re: MassDOT Included? | If yes, what are the recommendations? | Is MassDOT meeting these recommendations through existing or proposed programs? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? | Specific Impaired Waterbodies included in TMDL (bold identified as storm water impaired) | WLA Applicable to MassDOT?* |
| Multi-State /Final Bacteria and Total Phosphorus TMDL Report for the Kickemut River (Rhode Island-Massachusetts) | Bacteria, Phosphorus | Yes | Yes | MassDOT will need to comply with MS4 regulations Phase II Stormwater Management Plans submitted and general permits as required which include six minimum measures and prioritization of outfalls for BMP construction. MassDOT needs educational programs on pollution prevention and good housekeeping practices. | Yes | MassDOT has received full authorization to discharge under the general permit. The NOI submitted with the application for coverage includes many educational programs on pollution prevention and good housekeeping practices. MassDOT and EPA continue to work together to finalize the programs included in the Storm Water Management Plan. | Kickemut Reservoir Upper Kickemut River Kickemut River | |
| Multi-State/ Northeast Regional Mercury Total Maximum Daily Load | Mercury | Yes | No | None | - | - | For fresh waters in CT, MA, ME, NH, NY, RI, VT | No |
| Blackstone River/Final TMDLs of Phosphorus for Indian Lake (BMP 7K) | Phosphorus | Yes | Yes | TMDL suggests that MassDOT do the following: 1. Reduce impervious surfaces, institute increased street sweeping and catch basin cleaning; install detention basins, etc. 2. 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 MassDOT 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 catch basin cleaning. | No | MassDOT's Impaired Waters Program will include the review of the need for BMPs to address the TMDL. MassDOT has received authorization from EPA to discharge storm water under the general permit for discharges in this watershed. A parcel containing four acres of land adjacent to Indian Lake was retained for future installation of stormwater BMPs. | Indian Lake, Worcester | |
| Blackstone River/ Final TMDLs of Phosphorus for Lake Quinsigamond and Flint Pond (BMP 7P) | Phosphorus | Yes | Yes | 1. MassDOT should begin the Storm Water Management Plans required under Phase II to reduce discharge of pollutants to the "maximum extent practicable." 2. MassDOT will also be required to apply for the EPA Phase II General Stormwater NPDES Permit by March 10 of 2003. 3. The regional office of MassDOT has offered to target high priority watersheds in the region of higher frequency of BMPs and maintenance. 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. 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. 6. Inspect and maintain all structural components of stormwater system on a yearly basis. | Yes | MassDOT has received authorization from EPA to discharge storm water under the general permit for discharges in this watershed. MassDOT's Impaired Waters Program will include the review of the need for BMPs to address the TMDL. District 3 has agreed to increased maintenance schedule within this watershed. In a letter written to DEP and dated June 19, 2002, District 3 committed to an increased schedule of inspection of catch basins every six months, with cleaning as determined necessary in inspections, and annual sweeping of roads in this watershed. See response above (#4) regarding maintenance schedule commitments. The letter committed to inspection and cleaning, if necessary of all sumped drainage structures twice a year and more often if necessary; inspection/ cleaning of drainage outlet locations where sediment build up is evident; and inspection and repair of damaged and/or clogged drainage conveyances. Appendix E of this report summarizes the measures taken this year to meet this maintenance schedule. See response above (#5). | Flint Pond, Grafton/Worcester/ Shrewsbury Lake Quinsigamond, Worcester/ Shrewsbury | |

TMDL Review Table

| GENERAL TMDL INFORMATION | | | | | | WATERBODY SPECIFIC TMDL INFORMATION | | |
|--|----------------------|---------------|---|--|---|---|--|---|
| Basin/TMDL Name | Pollutant of Concern | WLA Included? | Are BMP recommendations re: MassDOT Included? | If yes, what are the recommendations? | Is MassDOT meeting these recommendations through existing or proposed programs? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? | Specific Impaired Waterbodies included in TMDL (bold identified as storm water impaired) | WLA Applicable to MassDOT?* |
| | | | | <p>7 Develop methodology to calculate loadings from highways</p> <p>8 Conduct pilot project to assess loadings and test BMPs on highways</p> <p>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.</p> | | <p>Projects will be reviewed through MassDOT's Impaired Waters Program and the assessment methods developed for that program and reviewed with EPA.</p> <p>See response above (#7)</p> <p>See response above (#4) regarding CBs. MassDOT will review projects within this watershed for opportunities to include additional BMPs within proposed projects if MassDOT determines they will help address the pollutant loading issue.</p> <p>Project 603533 Shrewsbury resurfacing and related work on Route 20 included the removal and disposal of drainage structure sediments and cleaning of paved waterways.</p> | | |
| Blackstone River/ Final TMDLs of Phosphorus for Leesville Pond (BMP 7L) | Phosphorus | Yes | Yes | <p>TMDL suggests that:</p> <p>1 MassDOT should conduct loading study and develop methodology to calculate loadings from highways.</p> <p>2 MassDOT 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.</p> <p>3 MassDOT and towns of Auburn, Leicester, Paxton, and Millbury should prepare Storm Water Management Plan for Phase II.</p> <p>4 MassDOT and town or city Dept of Public Works should reduce impervious surfaces, institute street sweeping program, catch basin cleaning, install detention basin etc.</p> | <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> | <p>USGS performed a loading study for MassDOT. The results will be used in the FHWA/ USGS model when updated. Projects will be reviewed through MassDOT's Impaired Waters Program and the assessment methods developed for that program and reviewed with EPA.</p> <p>MassDOT District 3 has committed to an increased schedule of inspection of catch basins every six months, with cleaning as determined necessary in inspections, and annual sweeping of roads in this watershed. District 3 has committed to inspection and cleaning, if necessary, of all sumped drainage structures twice a year and more often if necessary. Inspection/ cleaning of drainage outlet locations where sediment build up is evident, and inspection and repair of damaged and/or clogged drainage conveyances. Appendix E of this report summarizes the measures taken to meet this schedule this year. MassDOT's Impaired Waters Program will include the review of the need for BMPs to address the TMDL.</p> <p>MassDOT has received authorization from EPA and DEP to discharge storm water under the general permit for discharges in this watershed.</p> <p>See response above (#2)</p> | Leesville Pond, Auburn/Worcester | |
| Blackstone River/TMDLs of Phosphorus for Selected Northern Blackstone Lakes (BMP 7N) | Phosphorus | Yes | Yes | <p>TMDL suggests that MassDOT should regulate road sanding, salting, regular sweeping, and installation of BMPs (for these impaired waterbodies).</p> | <p>Yes</p> | <p>MassDOT 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.</p> <p>The following projects were initiated/ designed or constructed during PY8 in this basin:</p> <p>MassDOT incorporated detention ponds, grass and stone lined swales, and deep sump catch basins during the Goddard Memorial Drive (from Rt 9 to Airport Drive) Reconstruction Project in Worcester and the Route 12 Reconstruction Project in Auburn.</p> <p>604959 Worcester Interstate maintenance and related work on I-190 and I-290 which included removal and disposal of drainage structure sediments and cleaning paved waterways.</p> | <p>Auburn Pond, Auburn</p> <p>Curtis Pond North, Worcester</p> <p>Curtis Pond South, Worcester</p> <p>Dorothy Pond, Millbury</p> <p>Eddy Pond, Auburn</p> | <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> |

TMDL Review Table

| GENERAL TMDL INFORMATION | | | | | | WATERBODY SPECIFIC TMDL INFORMATION | | |
|--|----------------------|---------------|---|--|---|---|---|--|
| Basin/TMDL Name | Pollutant of Concern | WLA Included? | Are BMP recommendations re: MassDOT Included? | If yes, what are the recommendations? | Is MassDOT meeting these recommendations through existing or proposed programs? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? | Specific Impaired Waterbodies included in TMDL (bold identified as storm water impaired) | WLA Applicable to MassDOT?* |
| | | | | | | | Pondville Pond, Auburn Smiths Pond, Leicester Southwick Pond, Leicester Stoneville Pond, Auburn Brierly Pond, Millbury Green Hill Pond, Worcester Howe Reservoir, Millbury Jordan Pond, Shrewsbury Mill Pond, Shrewsbury Newton Pond, Shrewsbury Shirley St Pond, Shrewsbury Salisbury Pond, Worcester | No No No No No No No No No No |
| Blackstone River/ Final TMDLs of Phosphorus for Salisbury Pond (BMP 70) | Phosphorus | Yes | Yes | TMDL indicates that 1. MassDOT should develop methodology to calculate loadings from highways and conduct pilot projects to assess loadings and test BMPs on highways. 2. MassDOT 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. 3. MassDOT will also be required to apply for the EPA Phase II General Stormwater NPDES Permit by March 10 of 2003. | Yes Yes | USGS performed a loading study for MassDOT. The results will be used in the FHWA/USGS model when updated. Projects will be reviewed through MassDOT's Impaired Waters Program and the assessment methods developed for that program and reviewed with EPA. MassDOT 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. MassDOT will inspect/ clean drainage outlet locations where sediment build-up is evident. MassDOT will inspect and repair damaged and/ or clogged drainage conveyances. Maintenance activity in compliance with this schedule is included in Appendix E. MassDOT has received authorization from EPA and DEP to discharge storm water under the general permit for discharges in this watershed. | | |
| Boston Harbor/ Final TMDLs of Bacteria for Neponset River Basin (BMP 7Q) | Bacteria | Yes | Yes | Regulated municipalities should prepare Storm Water Management Plans for Phase II. | - | MassDOT has received full authorization to discharge under the general permit and continues to respond to EPA suggestions in finalizing their Storm Water Management Plans. Project 605590. Route 195 resurfacing project included pulling outlets back up the slope, installing stone pads to slow down flow, installing check dams in drainage swales near the Neponset River. BMPs added to | 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 | |

TMDL Review Table

| GENERAL TMDL INFORMATION | | | | | | WATERBODY SPECIFIC TMDL INFORMATION | |
|--|----------------------|---------------|---|--|---|---|--|
| Basin/TMDL Name | Pollutant of Concern | WLA Included? | Are BMP recommendations re: MassDOT Included? | If yes, what are the recommendations? | Is MassDOT meeting these recommendations through existing or proposed programs? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? | Specific Impaired Waterbodies included in TMDL (bold identified as storm water impaired) WLA Applicable to MassDOT?* |
| Finalized this permit year: Final Pathogen TMDL for the Buzzards Bay Watershed | Pathogens | Yes | Yes | Development of comprehensive storm water management programs including identification and implementation of BMPs Bacteria Source Tracking. TMDL identifies potential sources of bacteria as illicit sewer connections and stormwater runoff, among others. Recommendations are to prioritize dry weather bacteria source tracking. Further recommendations include evaluating impaired waterbody segments for BMPs starting with intensive application of less costly non-structural practices such as street sweeping and monitoring of their success. | MassDOT will review 20% of TMDL watersheds across the state each year for the need for additional BMPs to meet the TMDL recommendations. If additional BMPs are identified, they will be included in future construction projects. MassDOT has hired a consultant to review illicit discharges and committed to reviewing 10% of urbanized areas each year. MassDOT has also committed to review impaired waterbodies starting with 20% of TMDL watersheds in the state per year to determine if additional controls are needed to address the pollutant of concern. | | Acushnet River Agawam River Apponagansett Bay Aucoot Cove Back River Bread and Cheese Brook Beaverdam Creek Broad Marsh River Buttermilk Bay Buttonwood Brook Buzzards Bay Cape Cod Canal Cedar Island Creek Clarks Cove Crooked River East Branch Westport River Eel Pond Great Sippewissett Creek Hammett Cove Harbor Head Herring Brook Hiller Cove Little Bay Little Sippewissett Marsh Mattapoisett Harbor Mattapoisett River Nasketucket Bay New Bedford Inner Harb Onset Bay Outer New Bedford Harb Pocasset Harbor Phinney Harbor Quissett Harbor Sippean Harbor Sippican River Slocums River Snell Creek Red Brook Harbor Wankinco River Wareham River West Branch Westport River West Falmouth Harbor Westport River Weweantic River Wild Harbor |

TMDL Review Table

| GENERAL TMDL INFORMATION | | | | | | WATERBODY SPECIFIC TMDL INFORMATION | |
|--|----------------------|---------------|---|--|---|--|--|
| Basin/TMDL Name | Pollutant of Concern | WLA Included? | Are BMP recommendations re: MassDOT Included? | If yes, what are the recommendations? | Is MassDOT meeting these recommendations through existing or proposed programs? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? | Specific Impaired Waterbodies included in TMDL (bold identified as storm water impaired) WLA Applicable to MassDOT?* |
| Cape Cod/ Final Nutrient TMDL for Centerville River/East Bay | Total Nitrogen | Yes | No | -- | | -- | Centerville River - East Bay System |
| Cape Cod/ Final Nitrogen TMDL for Little Pond | Total Nitrogen | Yes | No | | | | Little Pond Embayment System |
| Cape Cod/ Final Nitrogen TMDL for Oyster Pond | Total Nitrogen | Yes | No | | | | Oyster Pond Embayment System |
| Cape Cod/ Final Nitrogen TMDL for Phinneys Harbor | Total Nitrogen | Yes | No | -- | | -- | Phinneys Harbor Back River Eel Pond |
| Cape Cod/ Final Nitrogen TMDL for Pleasant Bay System | Total Nitrogen | Yes | No | -- | | -- | Pleasant Bay Crows Pond Frost Fish Creek Ryder Cove Muddy Creek |
| Cape Cod/ Final Nitrogen TMDL Report for Five Sub-Embayments of | Total Nitrogen | Yes | No | -- | | -- | Mashpee River Shoestring Bay Popponesset Bay |
| Cape Cod/ Final Nitrogen TMDL Report for the Quashnet River, Hamblin Pond, Little River, Jchu Pond, and Great River in | Total Nitrogen | Yes | No | -- | | -- | Quashnet River Hamblin Pond Little River Jchu Pond Great River |
| Cape Cod/ Final Bacteria TMDL Report for the Three Bays System | Pathogens | Yes | Yes | The Massachusetts Highway Department should determine the Route 28 roadway drainage area discharging to the Marstons Mills River and install best management structures and/or operational practices to the maximum extent practicable and at a minimum, be designed to meet 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. | | MassDOT will review 20% of TMDL watersheds across the state each year for the need for additional BMPs to meet the TMDL recommendations. If additional BMPs are identified, they will be included in future construction projects. | Seapuit River |
| | | | | Infiltration structures and devices that have been installed to control the road runoff from Route 28 into the Marstons Mills River should be inspected to determine their performance and condition. MassDOT | | MassDOT will review 20% of TMDL watersheds across the state each year for the need for additional BMPs to meet the TMDL | Prince Cove Cotuit Bay North Bay West Bay |
| Cape Cod/ Final Nitrogen TMDL Report for the Three Bays System | Total Nitrogen | Yes | No | -- | | -- | Cotuit Bay North Bay Prince Cove Seapuit River West Bay |
| Cape Cod/ Final Nitrogen TMDL for West Falmouth Harbor | Total Nitrogen | Yes | No | -- | | -- | Harbor Head West Falmouth Harbor |

TMDL Review Table

| GENERAL TMDL INFORMATION | | | | | | WATERBODY SPECIFIC TMDL INFORMATION | |
|---|----------------------|---------------|---|---|---|--|--|
| Basin/TMDL Name | Pollutant of Concern | WLA Included? | Are BMP recommendations re: MassDOT Included? | If yes, what are the recommendations? | Is MassDOT meeting these recommendations through existing or proposed programs? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? | Specific Impaired Waterbodies included in TMDL (bold identified as storm water impaired) WLA Applicable to MassDOT?* |
| Cape Cod/Final Nitrogen TMDL Report for Five Chatham Embayments (Stage Harbor, Sulphur Springs, Taylors Pond, Bassing Harbor and Muddy Creek) | Total Nitrogen | Yes | No | - | - | - | Oyster Pond Oyster Pond River Stage Harbor Mill Pond Mill Creek Harding Beach Pond Bucks Creek Taylors Pond |
| Cape Cod/Final TMDL Report of Bacteria for Frost Fish Creek, Chatham (BMP 7F) | 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 1 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 MassDOT Dept. work with the Town of Chatham to work out a reasonable schedule for these activities. | Yes | Any programmed project draining to Frost Fish Creek will address the TMDL as part of MassDOT's Impaired Waters program. If programmed projects do not occur before 2015, this waterbody segment will be reviewed as part of the Impaired Waters Program Retrofit Initiative and the assessment will determine if additional retrofit BMPs are necessary to address the impairment and meet the TMDL. There were no projects done within the Cape Cod Basin this year. | Frost Fish Creek |
| Cape Cod/Final TMDLs of Total Nitrogen for Great, Green, and Bourne Pond Embayment Systems | Total Nitrogen | Yes | No | - | - | - | Great Pond Perch Pond Green Pond Bourne Pond |
| Cape Cod/ Final TMDL Report of Bacteria for Muddy Creek, Chatham (BMP 7G) | 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 1 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 MassDOT Dept. work with the Town of Chatham to work out a reasonable schedule for these activities. | No | Any programmed project draining to Muddy Creek will address the TMDL as part of MassDOT's Impaired Waters program. If programmed projects do not occur before 2015, this waterbody segment will be reviewed as part of the Impaired Waters Program Retrofit Initiative and the assessment will determine if additional retrofit BMPs are necessary to address the impairment and meet the TMDL. The following projects were initiated/designed/constructed within the Muddy Creek Basin in Permit Year 9: Muddy Creek Coastal Restoration Project - Replace two 30" x 45" culverts with 40' Channel Bridge and resurfacing of adjacent roadway sections as needed. | Muddy Creek |
| Charles River/Final Phosphorus TMDL Report for the Lower Charles River Basin | Total Phosphorus | Yes | Yes | TMDL suggests MassDOT 1. Collect source monitoring data and additional drainage area information to better target source areas for controls and evaluate the effectiveness of on-going control practices 2. Enhance existing stormwater management programs to optimize reductions in nutrient loadings with initial emphasis on source controls and pollution prevention practices | - | MassDOT's Impaired Waters Program will include the review of the need for BMPs to address the TMDL. | Charles River |

TMDL Review Table

| GENERAL TMDL INFORMATION | | | | | | WATERBODY SPECIFIC TMDL INFORMATION | | | |
|--|----------------------|---------------|---|----|---|---|---|--|-----------------------------|
| Basin/TMDL Name | Pollutant of Concern | WLA Included? | Are BMP recommendations re: MassDOT Included? | | If yes, what are the recommendations? | Is MassDOT meeting these recommendations through existing or proposed programs? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? | Specific Impaired Waterbodies included in TMDL (bold identified as storm water impaired) | WLA Applicable to MassDOT?* |
| | | | Yes | No | | | | | |
| Charles River / Final Pathogen TMDL Reports for the Charles River Watershed | Pathogens | Yes | No | | | | | Beaver Brook Bogastow Brook Charles River Cheese Cake Brook Fuller Brook Muddy River Rock Meadow Brook Rosemary Brook Sawmill Brook South Meadow Brook Stop River Unnamed tributaries | |
| Chicopee River/Final TMDLs of Phosphorus for Quaboag and Quacumquassit Ponds | Total Phosphorus | Yes | Yes | | The TMDL suggests that MassDOT 1. Regulate road sanding, salting, regular sweeping, and installation of BMPs. 2. Perform roadway sweeping and catch basin inspection/cleaning twice a year 3. MH along with the town of Spencer, control nonpoint source pollution targeting for State Routes 9, 31 and 49 by requiring roadway sweeping and catch basin inspection/cleaning twice a year or other approved BMPs. 4. MH and the town of Spencer must maintain or improve all existing BMPs or the permittee may install infiltration or other BMPs and document a total reduction of 29% of the total phosphorus loading to receiving waters to control the stormwater discharges within the watershed. To do this, MH and the town of Spencer must either conduct roadway sweeping in the spring and fall combined with annual catch basin inspection and cleanout to restore 80% or more of the solids storage volume anytime the available solids storage volume is less than 50%. | | MassDOT 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. MassDOT's Impaired Waters Program will include the review of the need for BMPs to address the TMDL. MassDOT has proposed a catchbasin inspection and maintenance record system in its SWMP (BMP 6C-4). MassDOT 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. Appendix E summarizes the maintenance activities performed this year. MassDOT has proposed a catchbasin inspection and maintenance record system in its SWMP (BMP 6C-4). MassDOT 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. Appendix E summarizes the maintenance activities performed this year. MassDOT's Impaired Waters Program will include the review of the need for BMPs to address the TMDL. | Quaboag Pond Quacumquassit Pond | No No |

TMDL Review Table

| GENERAL TMDL INFORMATION | | | | | | | WATERBODY/SPECIFIC TMDL INFORMATION | |
|--|----------------------|---------------|---|--|---|--|--|--|
| Basin/TMDL Name | Pollutant of Concern | WLA Included? | Are BMP recommendations re: MassDOT Included? | If yes, what are the recommendations? | Is MassDOT meeting these recommendations through existing or proposed programs? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? | Specific Impaired Waterbodies included in TMDL (bold identified as storm water impaired) | WLA Applicable to MassDOT?* |
| Chicopee River /Final TMDLs of Phosphorus for Selected Chicopee Basin Lakes (BMP 7H) | Phosphorus | Yes | No | TMDL suggests MassDOT should regulate road sanding, salting, regular sweeping, and installation of BMPs for these ponds | - | MassDOT 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. MassDOT's Impaired Waters Program will include the review of the need for BMPs to address the TMDL. The following projects were initiated/ designed or constructed during FY9 in this basin: 604437 Ludlow signal & intersection improvements at East and Chapin Streets - Construction completed 2010 - installation of deep sump catchbasins 601502 Monson Lower Hampden Road reconstruction - Construction completed 2010 - installation of deep sump CB and stone for pipe ends 605810 Highway cleaning on I-91 & I-291 (Greater Springfield area), Chicopee River (cat 5, MA36-24) & Connecticut River (Cat 5, MA 34-05) within project limits; Cleaning and sweeping 605529 Palmer: Park Street (Rte 20) over B&MRR & Boston Road (Rte 67) Bridge Reconstruction (750' east of Quaboag River; Cat 5, MA 36-16). Removal of drainage structure & pipe sediment (Items 187.3 & 187.31); 2-deep sump catch basins (DSCB - Item 201) 602600 Springfield: Roosevelt Avenue over ConRail spur & Main line bridge replacements; Removal of drainage structure & pipe sediment (Items 187.3 & 187.32); 2-deep sump catch basins (DSCB - Item 201) 605084 Barre: Route 122 over Prince River (Cat 2) bridge replacement; Removal of drainage structure & pipe sediment (Items 187.3 & 187.31); 5-deep sump catch basins (DSCB - Item 201); groundwater remediation work related to RTN 2-15761 of the MCP - including the following items: Item 180.4 - estimate calls for monitoring/handling/stockpiling 400 CY of contaminated soil; Item 180.11 - estimate calls for disposal of 100 tons of unregulated soil; Item 181.12 - estimate calls for disposal of 100 tons of regulated soil 605751 Granby-Ware: Maintenance depot resurfacing & related work: Ware depot; Removal of drainage structure sediment (Items 187.3); sedimentation basin (Item 205.1) with outlet structure (Item 205.2) and stone for pipe ends (Item 258). | Browning Pond, Oskham Long Pond, Springfield Sugden Reservoir, Spencer Mona Lake, Springfield Minechoag Pond, Ludlow Wickaboag Pond, West Brookfield Spectacle Pond, Wilbraham | No No No No No No No |
| Connecticut River/ Final TMDLs of Phosphorus for Selected Connecticut Basin Lakes (BMP 7I) | Phosphorus | Yes | No | - TMDL suggests MassDOT and towns should develop Storm Water Management Plans for Phase II NPDES and initiate additional BMPs in critical areas. MassDOT should regulate road sanding, salting, regular sweeping, and installation of BMPs. | - Yes | MassDOT has incorporated BMPs into the Aldrich Street bridge reconstruction over Batchelor Brook. Project included installation of stone swale and two vegetated swales to reduce erosion from stormwater discharges from the road. Aldrich Lake is within a Low Salt Application Area for MassDOT. - - MassDOT has received authorization from EPA to discharge storm water under the general permit for Loon Pond area. MassDOT 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. | Aldrich Lake East, Granby Aldrich Lake West, Granby Leverett Pond, Leverett Lake Wyola, Shutesbury Loon Pond, Springfield | No No No No No |

TMDL Review Table

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| | | | | <p>The following projects were initiated/ designed or constructed during PV9 in this basin:</p> <p>604718 Chesterfield: Reconstruction of East Street - construction of Water quality swales, check dams, inlet protection, stone spillways and sedimentation barriers.</p> <p>605813 Chesterfield: Resurfacing of Route 143 - includes construction of Water quality swales, erosion and sedimentation controls</p> | Lake Warner, Hadley | No |
| | | | | <p>602888 Goshen: Reconstruction of Route 9 - includes construction of Water quality swales, check dams, inlet protection, and sedimentation barriers.</p> <p>604210 West Springfield: Route 5 reconstruction from I-91 to Monterey Drive - in vicinity of Connecticut River (MA34-05). Removal of drainage structure & pipe sediment (Items 187.3 & 187.31)</p> <p>604043 Amherst: Reconstruction of Route 166 (West Street) from County Corners Road to Hampshire College. Item 181.1 included in contract for disposal of an estimated 910 tons of contaminated soil (700 tons actually removed to date); Item 181.12 included in contract for disposal of an estimated 1,730 tons of arsenic contaminated soil. Item 183.1 included in contract for treatment of polluted groundwater (estimate = 2000 gallons); removal of drainage structure & pipe sediment (Items 187.3 & 187.31); installation of 54 deep sump catch basins (Item 201) - 4 with hoods, 420.02 porous pavement multi use path; restored 130 feet of incised drainage channel, stone for pipe ends and sumps at DSCB outlets. installation of vegetated conveyance channels</p> <p>605260 Chicopee-South Hadley Route 33 resurfacing & repairs; Installed 2 deep sump catch basins (Item 201), converted 6 standard sump catch basins to deep sump.</p> <p>082611 Chicopee-Holyoke: Route 116 over Connecticut River (MA34-05) bridge rehabilitation; removal of drainage structure & pipe sediment (Items 187.3 & 187.31)</p> <p>604449 Springfield: North end and Brightwood infrastructure improvements from Amtrack overpass to Osgood St. Removal of drainage structure sediment (Item 187.3), 17 deep sump catch basins (Item 201), cleaning of drainage pipes (Item 226.3)</p> <p>605587 West Springfield: I-91 maintenance resurfacing extending northerly from bridge over Connecticut River (MA34-05). Removal of drainage structure & pipe sediment (Items 187.3 & 187.31), removal & disposal of drainage outlet sediments (Item 187.33), convert 12 standard</p> <p>602925 Holyoke: Rehabilitation of Pleasant Street from 580 feet south of Yale Street northerly to Northampton Street (in close proximity to impaired Log Pong Cove (MA34-124) & Connecticut River (MA34-04), removal of drainage structure & sediment (Item 187.3), 23 deep sump</p> <p>605751 Ware: Maintenance depot resurfacing & related work, removal of drainage structure sediment (Items 187.3), sedimentation basin (Item 205.1) with outlet structure (Item 205.2) and stone for pipe ends (Item 258).</p> | | |

TMDL Review Table

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| | | | | | | <p>606217 Deerfield-Whately Intersection & signal improvements: In Whately - removal of drainage structure sediment (Items 187.3), 1 deep sump catch basin (201), redirect discharge from 2 existing CB's currently directly discharging to a resource area to grass infield located</p> <p>606229 Amherst: Safe routes to school (Wildwood Elementary & Amherst Regional Middle School); removal of drainage structure & pipe sediment (Items 187.3 & 187.31); 4 deep sump catch basins (Item 201).</p> <p>603735 Holyoke: Route 202 over B&MRR bridge replacement (in close proximity to impaired Log Pond Cove (MA34-124) & Connecticut River (MA34-44). Removal of drainage structure & pipe sediment (Items 187.3 & 187.31); 5 hooded deep sump catch basins (Item 201).</p> | | |

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| Narragansett Bay/ Final Bacteria TMDL for Palmer River Basin | Bacteria | Yes | No | -- | -- | -- | Palmer River - West Branch Palmer River - East Branch Runney Marsh brook Beaver Dam Brook Bad Luck Brook Fullers Brook Clear Run Torrey Creek Old Swamp Brook Rocky Run | |
| Nashua River/ Final TMDL for Bare Hill Pond | Nuisance Aquatic Plants | Yes | No | -- | -- | -- | Bare Hill Pond | |
| Shawsheen River/Final TMDLs of Bacteria for Shawsheen River Basin | Bacteria | Yes | No | -- | -- | -- | Shawsheen River | |
| South Coastal/ Final TMDLs of Bacteria for Little Harbor, Cohasset | Fecal Coliform | Yes | No | -- | -- | -- | Little Harbor, Cohasset | |
| SuAsCo/Assabet River TMDL for Total | Phosphorus | Yes | No | -- | -- | -- | Assabet River (7 segments) Assabet River Reservoir (1 segment) | No No |
| SuAsCo/ Final TMDLs of Phosphorus for Lake Boon (Boons Pond) | Phosphorus | Yes | No | -- | -- | -- | Lake Boon, Hudson/ Stow | No |
| Buzzards Bay/Final TMDL of Total Phosphorus for White Island Pond | Phosphorus | Yes | No | -- | -- | -- | White Island Pond East and West Basins | |
| Narragansett Bay/Final Pathogen TMDL for the Narragansett/Mt Hope Bay Watershed | Pathogen | Yes | No | Segments that remain impaired during wet weather should be evaluated for stormwater BMP implementation opportunities starting with less costly non-structural practices first (such as street sweeping, and/or managerial approaches using local regulatory controls), and lastly, more expensive structural measures. Structural stormwater BMP implementation may require additional study to identify cost efficient and effective technology. | | | | |