**Municipality/Organization:** **MassDOT - Highway Division**

**EPA NPDES Permit Number:** **MA043025**

**MaDEP Transmittal Number:**

**Annual Report Number & Reporting Period:** **No. 13: April 2015-March 2016**

# NPDES Phase II Small MS4 General Permit Annual Report

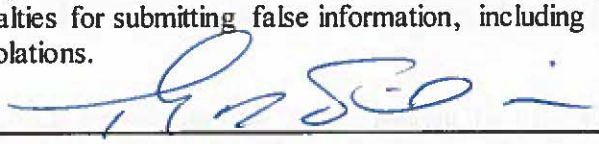
## Part I. General Information

Contact Person: Mr. Henry Barbaro Title: Supervisor of Stormwater Unit

Telephone #: (857) 368-8788 Email: henry.barbaro@state.ma.us

Certification:

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

Signature: 

Printed Name: Thomas J. Tinlin

Title: Administrator – MassDOT, Highway Division

Date: 05/01/2016

## Part II. Self-Assessment

The Massachusetts Department of Transportation – Highway Division (MassDOT) has completed the required self-assessment and has determined itself to be in full compliance with the conditions of the Municipal Separate Storm Sewer Systems (MS4) permit. MassDOT has spent significant time, effort and funds focusing on the potential impacts of stormwater from its roads and properties this year. MassDOT has advanced its stormwater program in Permit Year 13 through implementing the Impaired Waters Program (IWP), educating its staff, conducting public outreach at numerous seminars, and initiating a pilot BMP inspection program.

The MassDOT Environmental Services Stormwater Unit continues to consist of three environmental scientists and to focus on stormwater management across the Commonwealth. The Stormwater Unit reviews the drainage/stormwater management system for all programmed projects, identifies programmed projects that would benefit from the implementation of structural stormwater BMPs, ensures effective BMPs are designed, and implements the IWP. Additionally, the Stormwater Unit works to expand its BMP and drainage inventory, and promote inspection and maintenance practices. In Permit Year 13, the Stormwater Unit hired two summer interns and one co-op (a six-month internship program) which increased the overall capacity of the Unit.

MassDOT, with consultant support, has continued to implement the IWP to address discharges to impaired waters from highway runoff as part of compliance with the MS4 general permit, and has completed a significant number of water quality treatment projects. MassDOT's IWP includes two components: the Retrofit Initiative and the Programmed Projects Initiative. Through the Retrofit Initiative, MassDOT identifies locations that warrant adding after-the-fact stormwater Best Management Practices (BMPs) along existing roadways; and through the Programmed Projects Initiative, MassDOT incorporates stormwater BMPs into programmed (planned) highway projects. The latter project types have the advantage of being more holistically integrated into highway drainage systems, which provides more effective stormwater management.

During Permit Year 13, MassDOT completed IWP assessments of 63 water bodies, 15 of which were included on the list of impaired waters potentially receiving MassDOT stormwater runoff and were listed in MassHighway's 2010 commitment to the court and EPA's enforcement as Appendix L-1. The assessments were included in the final semi-annual report to EPA on June 8, 2015, and fulfilled MassDOT's five-year commitment to assess all impaired water body segments, within urbanized areas, that potentially receive stormwater runoff from MassDOT roadways. Overall, 826 water bodies were assessed, 142 more than the 684 required under the EPA Enforcement Order. These additional assessments illustrate MassDOT's commitment to manage and treat runoff from its highways as the opportunities arise.

This year, MassDOT employed six consultant firms to perform site assessments to determine if retrofit BMPs were warranted. There are currently 71 stormwater BMP projects in various stages of design. These projects, in addition to those on-going from Permit Years 8 through 10, currently include the design of a broad range of vegetated and subsurface stormwater infiltration BMPs. BMPs included in final designs this year are estimated to remove 108 acres of effective impervious cover and 52 lbs/yr of phosphorus from the watersheds. Two projects have reached 100% Design and are awaiting construction advertisement. Thirty-one projects are currently under construction and 29 have been

completed since the program began in 2010. A summary of the IWP is included in BMPs 7R and 7U, along with Appendix D of this report.

In order to alert designers working on projects that potentially impact impaired waters, and to capture information regarding stormwater improvements incorporated into highway designs, MassDOT developed a water quality data form (WQDF) which is submitted by design consultants at the 25% and 75% design stages.

According to the 25% forms, MassDOT discharged to 114 receiving water body segments. Of these, 79 had water quality impairments, 38 of which had a final Total Maximum Daily Load report, and 46 were in a watershed covered by a TMDL. The 75% forms documented a total of 39 stormwater BMPs (existing and proposed) and at least 701 proposed deep sump catch basins. Additionally, sensitive site design elements for these projects were documented and included measures such as preserving existing vegetation, natural drainage patterns, and riparian buffers; minimizing disturbance to wetland resource areas; promoting sheet flow to vegetated areas; and reducing existing impervious cover. Information collected in WQDFs during Permit Year 13 is included in Appendix E.

MassDOT has found that alerting designers early on about impaired waters is an effective way to make sure they include the appropriate stormwater features to address the impairment. In addition, by capturing BMP design information at the 75% Design stage, MassDOT can readily build its database of stormwater BMPs which has a variety of applications (e.g., asset management).

MassDOT has developed the IWP geospatial database to track the many structural BMPs being designed and constructed by its design consultants as well as the status of water body assessments. The IWP geospatial database, which is populated by WQDF information (e.g., stormwater BMPs), is a powerful tool for BMP management and the overall evaluation of MassDOT's stormwater program. Compiling stormwater BMP information in the IWP database will allow for streamlined tracking and maintenance of BMPs moving forward. Additionally, in Permit Year 13, MassDOT has begun work with its District offices to collect data on structural BMPs constructed prior to the Impaired Waters Program to ensure that the IWP database ultimately will include all BMPs statewide.

MassDOT's Stormwater Unit also has been integrally involved in the MassDOT Asset Management Initiative to collect location and condition data on all assets statewide. Asset databases were developed in Permit Year 13 for all drainage structures including structural BMPs (surface and subsurface), drainage inlets, drainage manholes, outfalls, and pipes. A digital inspection form for structural BMPs was developed and piloted by MassDOT's Stormwater Unit using ArcGIS Online and the Collector Application.

MassDOT conducted a robust training and outreach effort in Permit Year 13 including presentations on MassDOT's stormwater program at various conferences, participation in national research studies and workshops, and internal staff training. MassDOT's stormwater program continues to be at the cutting edge of stormwater management for regional state DOTs, and presentations from MassDOT are sought out by conference organizers in the area.

MassDOT continues to follow up on potential illicit connections identified along its drainage systems while working on a more targeted and efficient Illicit Discharge Detection and Elimination (IDDE)

program as the isolated and controlled nature of MassDOT's roadway network results in few illicit connections. MassDOT is working to prioritize its IDDE efforts by focusing on watersheds that are more environmentally sensitive and/ or where pathogens are identified as an issue. Several steps have been taken to develop this prioritization, and more information is included in BMP 3D (pg. 21).

MassDOT continued the review of Appendix A (IDDE Status Permit) and Appendix B (Status of Drainage Tie-In Permits) tables that have been submitted in previous Annual Reports. This included revising the tables, including more specific information on the Property Owner and Action Items. Additionally, this critical review included contacting each District to determine if any of the drainage tie-ins were permitted; and therefore could be removed from the IDDE Tables.

The Drainage Tie-In Standard Operating Procedure (SOP), issued in 2012, has been utilized this past year to regulate property owners with existing or proposed drainage conveyances tied into MassDOT's system. This mechanism has advanced the objectives of the IDDE program by identifying unauthorized pipe outfalls (e.g., from basement sump pumps) that otherwise would not be detected by using dry-weather flow inspections. When MassDOT identifies such a stormwater connection into MassDOT's drainage system, the respective property owner is contacted with a Notice of Violation (NOV) letter informing them that they can either apply for a Tie-in Permit or remove their connection. A generic NOV letter is included in Appendix C.

## 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 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 1A **Revised** | 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. | Because this training is for MassDOT staff and contractors, this BMP is reported under 6B-1 (Pollution Prevention/Good Housekeeping). | BMP Revised. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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. | Classes were held throughout the permit year providing training on snow and ice operations and source pollution reduction. Attendees included municipal DPW snowplow drivers and there were 680 attendees in total. Topics covered included:<br>• Anti-icing<br>• Department operations<br>• Salt and environmental considerations<br>• Drainage systems<br>Additionally, 47 trainings on various topics were provided by Baystate Roads, which is partially funded by MassDOT. The trainings included the following and a total of 3006 people attended. A full list of trainings is included in Appendix M.<br>• Proposals for Cleaner Water: A Grant Writing Workshop<br>• Complete Streets 101 – Benefits, Eligibility & Funding<br>• 2016 Innovation & Tech Transfer Exchange<br>• Snow & Ice Operations<br>• 2015 Moving Together Conference<br>• Gravel Roads: When the Dust Settles<br>• Creating Revenue Stream for Stormwater Management<br>• Pavement Management Boot Camp<br>• Trenching & Excavating Safety: Competent Person | Provide one training program for municipal DPW snowplow drivers related to snow and ice control as a means of reducing source pollution. Document attendance numbers. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| IC-1 | MassDOT Web Site | IT/Environmental | Add Environmental Section web page to web site. | Measurable goal completed in Permit Year 1. The MassDOT Environmental Section website was updated and reorganized in the summer of 2014. The updated website is easier to use and more streamlined. | Measurable goal complete. Continue to update the website with the most updated information. |
| 1C-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. |
| 1C-3 | MassDOT Web Site | IT/ Environmental | Evaluate web page annually and revise as necessary. | The Environmental web page was reviewed and updated. Annual Report 12 was added this year. The final Impaired Waters Assessment Report (June 2015). | Add the PY13 Annual Report. Continue to post updates to the Water Quality Data Form. |
| 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. |
| 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 |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 1F **Revised** | Post Contact Names for Municipal Drainage Concerns on MassDOT Web Site | Environmental/ Districts/ GIS | 1) Distribute a flyer with contact names to municipalities during May 2007 Baystate Roads NPDES Phase II General Permit seminar.<br>2) Post DHD contact name for each district on website for municipalities to contact and maintain link.<br>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. | 1) Completed in Year 5.<br>2) DHD contact names continue to be updated on the web site. Go to http://www.massdot.state.ma.us/highway/AbouttheDistricts.aspx<br>3) MassDOT has posted the drainage outfall inventory on the web site at this location: http://www.massdot.state.ma.us/planning/Main/MapsDataandReports/Data/GISData/Outfalls.aspx | 1) Completed in Year 5.<br>2) Continue to maintain contact names.<br>3) Share drainage inventory information as requested. |
| 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. | MassDOT installed 7 signs identifying river and stream crossings. The locations were identified by the MassRiverways Program and installed by MassDOT personnel. Five signs were installed along I-91 to identify the Manhan River, Mill River, Deerfield River, Green River, and Connecticut River. One sign was installed along I-290 in Marlborough to identify the Assabet River. One sign was installed along I-95 in Newton to identify the Charles River. | MassDOT will continue to install signs in areas identified by MassRiverways Program. |
| 1H | Anti-litter/ Dumping Messages on Variable Message Boards | Operations | Maintain anti-litter message in the message mix on permanent Variable Message Boards (VMBs). | Messages on permanent Variable Message Boards are restricted to traffic and safety issues. MassDOT has developed a working group to address public safety and has identified roadside litter as a potential safety issue. | Post anti-litter message on VMBs during the week of Earth Day (April 18-22nd), as conditions allow. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 1I **Removed** | 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. | It was determined in Permit Year 7, that the Think Blue Campaign was not the right program for providing stormwater literature to the public. The BMP was revised – see 1I below. | BMP Revised. |
| 1I **Revised** | Highway Stewardship Literature | Operations / Environment | Educate the public on the Impaired Waters Program, proper stormwater management, and other environmental stewardship measures. | MassDOT presented various aspects of the MassDOT Stormwater Program at many conferences throughout the year. Notably, MassDOT presented on the program at the Maine Stormwater Conference on November 17, 2015 and on the inspection and maintenance of BMPs at the MassDOT Innovation Exchange conference on March 8, 2016 to an audience of over 100 people including MassDOT staff, consultants, neighboring state DOTs, and the public.<br>As part of a presentation for the Massachusetts Association of Conservation Commissions, MassDOT developed a handout that was distributed to over 60 attendees. This handout is included as Appendix L of this report.<br>Stormwater Program Webpage – MassDOT updated the stormwater program webpage in PY 13 to allow the public to access all related information on the MassDOT stormwater program. | The stormwater program webpage will be updated to reflect current status and most recent documents.<br>Continue to inform others about the Impaired Waters Program through public outreach. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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. | MassDOT communicated with other DOTs when the need developed.<br><br>As of November 2014, a member MassDOT's Stormwater Unit is participating in an NCHRP 3-year research study titled the "Limitations of the Infiltration Approach to Stormwater Management in the Highway Environment." The objective of the research is to develop guidance for the state DOTs to determine appropriate siting of stormwater infiltration BMPs based on the limitations, risks, and benefits in the context of the built and natural environments.<br><br>In June 2015, a member of MassDOT's Stormwater Unit joined an NCHRP research panel on how to design an effective stormwater monitoring program that is proportionate and appropriate for any state DOT. The study will identify minimum stormwater monitoring goals and objectives that provide information for state DOTs to develop, implement, and improve their stormwater management programs. The study period is 12 months and has $125,000 in funding.<br><br>In September 2015, a member of MassDOT's Stormwater Unit joined an NCHRP research panel to evaluate the effectiveness and cost of using granulated ferric oxide media in removing dissolved metals from stormwater runoff. The study period is three years and has $400,000 in funding.<br><br>Additionally, in October 2015, a member of MassDOT's Stormwater Unit joined an NCHRP research panel to develop guidance for DOTs on complying with TMDLs. The study period is two years and has $200,000 in funding. | MassDOT will continue to communicate with other DOTs as the need develops and opportunities become available.<br><br>MassDOT will continue to participate in NCHRP research panels for the duration of the studies.<br><br>Members of MassDOT's Stormwater Unit will present at the International Low Impact Development Conference on August 29-31, 2016. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 1J (Cont'd) | | | | MassDOT also attended and presented at various conferences which included audience members from neighboring state DOTs. These conferences included the New England Interstate Water Pollution Control Commission (NEIWPCC) annual conference, the Massachusetts Association of Conservation Commissions annual meeting, the Maine Stormwater Conference, and the MassDOT Innovation Exchange conference.<br>MassDOT also participated in a series of AASHTO Stormwater Community of Practice Web Forums. The Web Forums provide an opportunity for stormwater practitioners from State DOTs across the country to share information on stormwater program organizational structure, stormwater management at DOT construction sites, and the use of vegetation. | |
| 1K | Storm Water Coordinator | Environmental | Fund a full-time stormwater coordinator position each year. | The Environmental Section stormwater staff continues to coordinate compliance within the NPDES stormwater program. They have completed many tasks under these roles throughout the year.<br>Stormwater staff members also continue to coordinate the Impaired Waters Program implementation. They work with consultants to perform assessments and select appropriate stormwater BMPS as part of the Retrofit Initiative and Programmed Project Initiative.<br>During Permit Year 13, MassDOT employed two summer interns who assisted with enhancing MassDOT's stormwater BMP inspection program. Additionally, MassDOT's Stormwater Unit hired a co-op for a 6-month period from January 2016 to June 2016 to assist with general stormwater program implementation. | Continue to fund a stormwater analyst and an Impaired Waters Program coordinator. Hire a co-op for the fall semester and in the spring, as funding allows, to provide stormwater related assistance. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| Addn. | 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. | The Water Quality Data Form (WQDF) is being used for submittal at 25% Design and 75% Design stage to MassDOT by internal designers and consultants.<br>This year, MassDOT has received 128 water quality data forms; 87 at the 25% design phase and 41 forms at the 75% design phase. Of the 25% forms, 114 receiving waterbodies were identified, 79 affected an impaired water body of which 38 had a final TMDL, and 46 were in a watershed covered by a TMDL. The 75% forms documented a total of 39 stormwater BMPs (existing and proposed) and at least 701 proposed deep sump catch basins. Additionally, site sensitive design measures for these projects were documented. Appendix E provides more information on data collected through the WQDFs in Permit Year 13. | Internal designers and consultants will continue to submit the forms at 25% and 75% Design Submittals.<br>Continue to update MassDOT database to accurately track assessment and BMP design data.<br>Continue to educate designers on how to accurately and comprehensively complete the WQDF. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| Addn. | Stormwater Related Presentations | Environmental | | MassDOT stormwater staff delivers educational stormwater presentations to interested groups throughout the year.<br><br>MassDOT presented at the New England Interstate Water Pollution Control Commission (NEIWPCC) annual conference on April 29, 2015 on MassDOT's IWP geospatial database and its use for watershed planning.<br><br>MassDOT presented at the Maine Stormwater Conference on November 17, 2015 on the MassDOT Impaired Waters Program.<br><br>On October 21, 2015, MassDOT presented to the Connecticut River Clean-up Committee MassDOT's on-going and future stormwater projects designed to improve water quality of the Connecticut River.<br><br>On March 5, 2016, MassDOT presented at the Massachusetts Association of Conservation Commissions (MACC) annual conference on stormwater BMPs appropriate for areas in the watershed of a coldwater fishery. (The handout developed for the presentation is provided in Appendix L).<br><br>MassDOT presented on the importance of inspection and maintenance of stormwater BMPs at the MassDOT Innovation Exchange conference on March 8, 2016 to an audience of MassDOT staff, consultants, municipal officials, neighboring state DOTs, and the public. | Continue to present relevant topics at conferences. Two MassDOT stormwater staff will present at the August 2016 International Low Impact Development conference in Portland, Maine.<br><br>MassDOT's Stormwater Unit is planning a training on stormwater runoff treatment and the MassDOT Impaired Waters Program for MassDOT staff from various sections and districts on May 17, 2016.<br><br>MassDOT will conduct trainings on the updated MassDOT Stormwater Handbook once it is ratified and made available. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| Addn. | TRB NCHRP Committee(s) | Environmental | | As of November 2014, a member MassDOT's Stormwater Unit is participating in an NCHRP 3-year research study titled the "Limitations of the Infiltration Approach to Stormwater Management in the Highway Environment." The objective of the research is to develop guidance for the state DOTs to determine appropriate siting of stormwater infiltration BMPs based on the limitations, risks, and benefits in the context of the built and natural environments.<br><br>In June 2015, a member of MassDOT's Stormwater Unit joined an NCHRP research panel on how to design an effective stormwater monitoring program that is proportionate and appropriate for any state DOT. The study will identify minimum stormwater monitoring goals and objectives that provide information for state DOTs to develop, implement, and improve their stormwater management programs. The study period is 12 months and has $125,000 in funding.<br><br>In September 2015, a member of MassDOT's Stormwater Unit joined an NCHRP research panel to evaluate the effectiveness and cost of using granulated ferric oxide media in removing dissolved metals from stormwater runoff. The study period is three years and has $400,000 in funding.<br><br>Additionally, in October 2015, a member of MassDOT's Stormwater Unit joined an NCHRP research panel to develop guidance for DOTs on complying with TMDLs. The study period is two years and has $200,000 in funding. | Continue participation in NCHRP study panels. Continue USGS phosphorus loading study. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| Addn. | USGS Phosphorus Study | Environmental | | In January 2015, water quality sampling, for a bridge runoff study, started at three different bridge locations. The objective of this study, being performed by the USGS, is to assess the concentrations of phosphorous present in stormwater runoff coming from roadway bridges in the Lower Charles River Basin located between the cities of Boston and Cambridge Massachusetts. | Continue USGS phosphorus loading study |
| Addn. | MassDOT Blog Posts | Environmental | Post information on MassDOT's Stormwater Program on the MassDOT blog to update the public. | Two blog posts were displayed on the MassDOT blog to update the public on efforts MassDOT is making to improve the water quality of runoff from our highways. One post on September 30, 2015 discussed basins being installed with the Route 2 over I-95 bridges in Lexington. The second post on March 24, 2015 discussed the stormwater retrofit project along I-90 to mitigate highway runoff discharging to the Charles River. | Continue to identify projects or activities to post on MassDOT's blog to update the public on water quality improvement efforts. |

## 2. Public Involvement and Participation

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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 99 design public hearings and public information meetings in this permit year. See Appendix F for a full list of meetings. This does not include the numerous public participation meetings held for various permit processes throughout the year. | MassDOT will continue to comply with federal and state public notification and public participation requirements. |
| 2B | Adopt-a-Highway | Adopt-a-Highway | Continue to support program. | MassDOT maintained, repaired, and replaced program signs as needed. 750 lane miles are covered by the Adopt-a-Highway and Sponsor-a-Highway programs. | MassDOT will continue to support and promote this program. |
| 2C **Removed** | 511 Massachusetts Traveler Information System | Operations | Maintain 511 System | Revised – see 2C below | BMP Removed. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 2C **Revised** | Call-In Numbers for Roadway Debris | Operations | Maintain Call-In Numbers for Roadway Debris | Each District and Headquarters has a general call-in number for the public to use to alert MassDOT of roadway debris. If Headquarter receives the call, then the information is forwarded to the appropriate District. The information is then forwarded to the Maintenance Department Foreman, who coordinates with the workers to alleviate the situation. Contact information can be found here: http://www.massdot.state.ma.us/ContactUs.aspx<br>Call-in numbers are listed below.<br>• *Headquarters: (857) 368-4636*<br>• *District 1: (413)-637-5700*<br>• *District 2: (413) 582-0599*<br>• *District 3: (508) 929-3800*<br>• *District 4: (781) 641-8300*<br>• *District 5: (508) 824-6633*<br>• *District 6: (857) 368-6100*<br>MassDOT provides Highway Assistance Patrol (HAP), an emergency roadway assistance service, along the most highly traveled roadways in Massachusetts. HAP patrols 982,000 miles annually and removes roadway debris when encountered, in addition to other services. | Maintain call-in numbers and providing active responses. |
| 2D-1 | MassDOT Web Site | IT/Environmental | Post Storm Water Management Plan (SWMP) to web site. | The most recent SWMP submitted to EPA (December 2009) is posted on MassDOT's web site. | MassDOT is expecting to receive an individual Transportation specific permit from EPA instead of being covered by the MA general permit. |
| 2D-2 | MassDOT Web Site | IT/Environmental | Post annual reports to the web site. | Annual Reports for Permit Year 1-12 are posted on the Environmental Section's web page. | Permit Year 13's Annual Report will be posted to the Environmental Section web page for public access within 30 days of submittal to EPA and DEP. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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 13. | Any new rest area leases will be summarized in the Annual Report. See MCM 5 for more information on future I-90 leases (pg. 34) |
| 3B-1 | Drainage Inventory | Environmental/ Construction/ Planning/ IT Section | Develop and implement specification for securing drainage information from future construction and redevelopment projects. | As part of the Impaired Waters Program Retrofit Initiative, MassDOT consultants have continued to improve upon MassDOT's drainage components electronic inventory. MassDOT has developed a geospatial database to inventory the improvements being identified, designed and installed as part of the program. This database is at the completion of the project design.<br>For programmed projects, the Water Quality Data Form submitted as part of 75% Design provides geospatial information on existing and proposed stormwater improvements thereby continuing to develop the database.<br>Additionally, MassDOT has developed a geospatial drainage asset database to collect all drainage assets including inlets, pipes, and outlets. | The IWP database will continue to be updated as retrofit projects design reach milestones. MassDOT will also continue to refine the Water Quality Data Form to capture information from programmed projects.<br>MassDOT is developing methods to update the drainage asset database. Various methods will be evaluated including using LiDAR data, aerial images, record design plans, or manual collection in the field during inspection and maintenance activities. MassDOT will continue to work towards expanding this effort statewide as part of MassDOT's larger asset management program. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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 and is posted on MassDOT's website at http://www.massdot.state.ma.us/planning/Main/MapsDataandReports/Data/GISData/Outfalls.aspx. MassDOT has received a number of requests for information and have been able to respond relatively quickly. | Continue to maintain outfall inventory on website. MassDOT will work towards collecting additional data on drainage assets in accordance with the Transportation Asset Management program. |
| 3C-1 | Drainage Connection Policy | Environmental | 1) Issue Drainage Connection Policy.<br>2) Post copy of policy on MassDOT web site.<br>3) Enforce the provision through referrals to the Attorney General office.<br>4) Summarize actions taken in the annual report. | 1) Policy issued on June 26, 2006 by the Chief Engineer<br>2) Policy posted at http://www.massdot.state.ma.us/Portals/8/docs/engineeringDirectives/policy/p-06-002.pdf<br>3 and 4) See Appendix A for illicit connection/discharge issues and actions during this permit year. | The drainage tie-in policy is now a formal MassDOT policy and will be implemented as necessary. |
| 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. | The Drainage Tie-In SOP has been finalized. It was officially issued on March 19, 2012. The SOP continues to be utilized for tie-in issues and procedures.<br>Appendix B summarizes the status of drainage tie-in permits that have been issued 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 B as needed. |
| 3D **Removed** | 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 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 3D **Revised** | Illicit Connection Review | Environmental/ Districts | Develop prioritized list for IDDE and include in Permit Year 5 Annual Report. Release RFR for development and implementation of IDDE program for watersheds on prioritized list. Field review complaints/ potential IDDEs identified by District personnel, during the drainage inventory, in response to municipal email requesting suspect areas and/ or from public throughout the year. | Past Illicit Discharge Detection and Elimination (IDDE surveys) have identified few connections relative to the funds and time expended required to conduct the surveys. In an attempt to focus investigative efforts pursuant to Minimum Control Measure 3, MassDOT has prioritized areas that may have a greater potential for illicit drainage connections throughout the State. This effort is also being undertaken in anticipation of the updated MA MS4 permit requirements which may be reflected in the TS4 permit expected to be issued to MassDOT.<br>IDDE prioritization areas have been delineated by catchment area, using USGS Series 451 data and Massachusetts Estuaries Program groundwatershed data for Cape Cod watersheds. Catchments have been assigned a prioritization rank based on the watershed's following attributes: waterbodies with pathogen impairments; urban area; TMDL for pathogens; and areas of concern for public health. MassDOT plans to use this data to identify MassDOT-owned roads within priority locations for further investigation, and will be able to conduct more thorough and focused IDDE surveys in areas with a greater probability for illicit connections.<br>Appendix B of this report provides a table of locations where unpermitted connections have been identified that require MassDOT stormwater permits. Part of the permitting process will determine if the flows are appropriate under the MS4 permit and therefore not considered illicit.<br>MassDOT discussed these potential illicit connections with the appropriate MassDOT Districts to determine if the connections were previously permitted or required drainage tie-in permits. | MassDOT will take a closer look at these Highest Priority catchments identified in the prioritization exercise. MassDOT will perform a desktop review to look at the type of DOT owned road(s) (e.g. rural, highway, etc.), proximity to developed areas, and existing sewer lines, if available. While the draft permit also includes other factors that can be used in prioritizing and/or exempting areas from the IDDE program, MassDOT has not found easily accessible data for these factors on a statewide basis. After the roads within the catchments are further prioritized, MassDOT will begin to conduct site visits to evaluate if additional factors should be added to the desktop review process and investigate for illicit connections. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 3D (cont'd) | | | | | MassDOT will proactively address complaints/ potential IDDEs identified by District personnel, during the Impaired Waters Program 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.<br>MassDOT has reviewed the IDDE requirements within the draft NPDES MS4 permit for Massachusetts and begun to develop a prioritization protocol for focusing IDDE efforts in MassDOT-owned stormwater systems. |
| 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 additional trainings to Resident Engineers were offered in Permit Year 13. | No action required.<br>MassDOT plans to conduct trainings on the updated Stormwater Handbook which will include IDDE protocols. |
| 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. | MassDOT is working on providing training on illicit connection policy, illicit connection identification, and protocol for reporting. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| Addn. | Standard IDDE Letter | Environmental/Legal | Create a standardized letter to make the early stage of the IDDE procedure more efficient. The letter will alert property owners of illicit and/or unauthorized discharges and connections from their property that tie into MassDOT's drainage system. The letter will also recommend that the property owners apply for a non-vehicular access permit in accordance with the MassDOT Drainage Tie-in SOP | Measurable goal met in Permit Year 11.<br><br>MassDOT has begun to use the Notice of Violation (NOV) letter for notifying property owners of unpermitted connection violations. Appendix B shows NOV letters which were sent in PY13 and the status of follow up. | Send the standardized NOV letter to property owners for any new event involving illicit and/or unauthorized discharges and connections that tie-in to MassDOT's drainage system. Track letters sent and responses in future annual reports. |
| Addn. | NOV Letter for Municipalities | Environmental/Legal | Create a standardized NOV letter to specific municipalities that have IDDE's into the MassDOT system. | MassDOT has initiated a draft letter to send to municipalities that were identified to have potential IDDE connections to the MassDOT stormwater system. Appendix A provides an update on status of municipal follow up. | Conduct additional field work, inspection, and sampling to determine if potential IDDE connections are of concern. Finalize municipal letter and send as needed. Track letters sent and responses in annual reports. |
| Addn. | Somerville/Arlington/Belmont IDDE follow up | Environmental | Follow up on potential illicit connections to MassDOT's drainage system in Somerville, Arlington, and Belmont | MassDOT completed water quality testing and CCTV inspections in June 2015 at locations in Billerica, Somerville, Belmont and Arlington to confirm previous evidence of illicit connections. No illicit connection is suspected in Billerica, but follow up work will be required in Somerville, Belmont, and Arlington. | Conduct joint sealing in Somerville to ensure source of dry weather flow is not groundwater inflow and redo water quality testing. Begin coordination with Belmont and Arlington to determine source of potential illicit connections in their system which connects to MassDOT drainage system. |
| Addn. | Municipal Data Request | Environmental | Collect drainage and sewer mapping in GIS from Massachusetts municipalities. | A letter to all Massachusetts municipalizes was sent in June 2015 requesting their drainage and sewer mapping be sent to MassDOT. Drainage and sewer mapping has been received from approximately 70 municipalities. | MassDOT will use this data to identify locations where municipal drainage systems tie into MassDOT drainage or where municipal sewer systems cross MassDOT drainage systems. This information will be used in the effort to prioritize MassDOT's IDDE efforts. |

## 4. Construction Site Stormwater Runoff Control

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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 Standards under the Wetlands Protection Act (WPA) and Section 401 of the Clean Water Act. | 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. | 41 MassDOT projects included submittal of NOIs and development of SWPPPs for compliance with NPDES construction general permit during Permit Year 13. 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 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 4E | MassDOT Stormwater Handbook | Environmental/ Construction/ Projects | Design projects in urbanized areas in compliance with the Stormwater 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.<br>MassDOT is currently revising the Stormwater Handbook to address MassDEP regulatory changes, MassDOT policy changes, TMDL requirements, and the requirements of the forthcoming TS4 permit. MassDOT determined that, given the extent of the changes in its Stormwater Program (e.g., Impaired Waters Program, the use of Water Quality Data Forms, design and maintenance policies, BMP selection with an emphasis on pavement disconnection and stormwater infiltration, BMP inventory and inspection), that the Handbook needed more of a re-write than just an update. | MassDOT anticipates the Stormwater Handbook to be completed in the Fall of 2016. The next step will be to submit the Handbook to MassDEP for ratification (i.e., recognition that MassDOT's Handbook is in compliance with the statewide stormwater management standards to the maximum extent practicable). |
| 4F | Standard Specification for Highways and Bridges | Environmental/ Construction/ Projects | Continue to include erosion and pollution prevention controls in construction contracts | Inclusion of pollution prevention controls is standard practice for construction contracts issued by MassDOT.<br>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.<br>In addition, the Stormwater Unit ensures that all construction contracts include items for sediment removal and disposal from pipes and drainage structures within the project area. | Such controls will continue to be included in construction contracts issued by MassDOT. |
| 4G **Revised** | MassDOT Research Needs Program | Environmental/ Construction | Continue funding the MassDOT Research Needs Program | Moved to MCM 6 since the focus of the research program is no longer construction controls. | |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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 (i.e. SWPPP) 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. |
| 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. | 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 guide was issued to resident engineers at winter training and was posted online at the Field Operations page in December 2013 found here:<br>http://www.massdot.state.ma.us/Portals/8/docs/FieldOperations/ErosionSedimentFieldGuide2013.pdf<br>Printed Field Guides were handed out at 2014/2015 Winter Seminars. | Measurable goal is now complete. |
| 4K | Storm Water Pollution Prevention Plan (SWPPP) Guidance Manual for Contractors | Construction Section/ Districts | Prepare a SWPPP Guidance for Contractors 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 which includes 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 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 4L-1 | Training | Construction Section | Conduct annual Erosion Prevention and Sediment Control Training for MassDOT Construction Personnel. Summarize # of attendees and topics covered. | Winter seminars were performed and topics covered NPDES permitting, erosion and sediment control, dust, noise, landscape, HazMat and Diesel Retrofit Program.<br>District 1 – March 12, 2016 with approximately 41 attendees.<br>District 2 – Scheduled for April 28, 2016<br>District 3 - Scheduled for April 28, 2016<br>District 4 – March 16, 2016 with approximately 37 attendees.<br>District 5 – Scheduled for May 5, 2016<br>District 6 – March 11, 2016 with approximately 23 attendees. | MassDOT will continue training on topics similar to those discussed in the past. |
| 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. | MassDOT continues to use compost amended topsoil and compost filler tubes for many of its projects. There is variability in the reliability of the material available.<br>MassDOT continues to expand its use of compost topsoil in lieu of conventional loam placement, as well as compost filter tubes in lieu of hay bales.<br>MassDOT uses compost for amended topsoil, filter tubes, and compost topsoil and continues to refine its specifications based on feedback from construction, | MassDOT intends to fund research for field testing of compost benefits in 2016.<br>MassDOT has funded a UMass field evaluation study of compost filter tubes. The study, which was initiated in spring 2016, is expected to take 2 years. |
| 4M **Removed** | 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. | MassDOT does not perform its own field tests any longer but instead relies upon guidance developed by others. | BMP Removed. |
| 4N | Construction Bulletins | Construction Section | Issue annual construction bulletins to each District regarding stormwater issues. | Issued annual construction bulletins to all Districts in the Spring of 2015 and Fall of 2015 regarding erosion control, dust, cofferdams, and stabilization. | Issue bulletin in the Fall of 2016 regarding stormwater issues. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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. | The District Construction Office and District Highway Director addressed noncompliance with Environmental Permits at the Crosby's Corner, Bridge V (add-a-lane along Route 128), and Methuen Rotary Projects. Contractors were required to fix erosion/sedimentation problems immediately. MassDOT field staff and Consultant Environmental Monitors are assigned to these projects for environmental protection. For all cases, the issues were fixed immediately in the field and did not result in penalties or noncompliance. | 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. | The new SWPPP Item 756 has been revised by the working group and added online training, and will be in new contracts with SWPPP Item.<br>The training will be done online with a certification sent to MassDOT. Details will be worked out through the established working group.<br>Finding appropriate online training, hopefully endorsed by or provided by EPA, will be more useful than establishing a separate training. | MassDOT will continue to add this item to contracts. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| Addn. | Drainage Structure Sediment Removal | Environmental/Design | Include removal of sediments from drainage structures as a standard item on all construction projects | MassDOT bid items 227.3 (removal of drainage structure sediments) and 227.31 (removal of drainage pipe sediments) have been included in all MassDOT bid estimates so as to ensure drainage structures within the project limits are cleaned after construction is complete, as necessary. | Continue to include drainage structure sediment removal bid items in all construction projects. |

## 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 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 5A-1 | MassDOT Stormwater Handbook | Environmental | Secure DEP ratification for MassDOT Stormwater Handbook. | Measurable goal complete for original Handbook. MassDOT is currently revising the Stormwater Handbook to address MassDEP regulatory changes, MassDOT policy changes, TMDL requirements, and the requirements of the forthcoming TS4 permit. MassDOT determined that, given the extent of the changes in its Stormwater Program (e.g., Impaired Waters Program, the use of Water Quality Data Forms, design and maintenance policies, BMP selection with an emphasis on pavement disconnection and stormwater infiltration, BMP inventory and inspection), that the Handbook needed more of a re-write than just an update. | MassDOT anticipates the Stormwater Handbook to be completed in the Fall of 2016. The next step will be to submit the Handbook to MassDEP for ratification (i.e., recognition that MassDOT's Handbook is in compliance with the statewide stormwater management standards to the maximum extent practicable). |
| 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 revising the Stormwater Handbook. MassDOT determined that a rewrite of the entire Handbook was more appropriate to address the changes in the DEP Policy, the MassDOT experience gained in implementing the guidelines, and the requirements of the forthcoming TS4 permit. Therefore, the update has been more extensive and the schedule extended. | MassDOT anticipates the Stormwater Handbook to be completed in the Fall of 2016. The next step will be to submit the Handbook to MassDEP for ratification (i.e., recognition that MassDOT's Handbook is in compliance with the statewide stormwater management standards to the maximum extent practicable). |
| 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 revising the Stormwater 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 the Stormwater Handbook to be completed in the Fall of 2016. The next step will be to submit the Handbook to MassDEP for ratification (i.e., recognition that MassDOT's Handbook is in compliance with the statewide stormwater management standards to the maximum extent practicable). |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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 H. | MassDOT will continue to conduct maintenance on its roadways as outlined in the maintenance schedule and in accordance with the requirements of the TMDL reports. |
| 5C **Removed** | 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. | BMP Revised – see 5C Revised below. | BMP Revised. |
| 5C **Revised** | Identify Innovative Stormwater BMPs Appropriate for MassDOT Projects | Environmental | Introduce innovative stormwater BMPs for MassDOT highway projects | MassDOT has been drafting Chapter 5 of the MassDOT Stormwater Handbook. This chapter identifies highway-specific BMPs that are designed and implemented on a site specific basis. New and innovative BMPs are being evaluated for inclusion in these chapters. | DEP to ratify & MassDOT to publish the MassDOT Stormwater Handbook. |
| 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. | No further action planned. |
| 5E | Highway Runoff Contaminant Model | Env. Div. Consultant | Develop and calibrate contaminant loading model (SELDM). | MassDOT has initiated collaboration with EPA to develop a load and BMP credit calculator using published data from EPA, and results from SELDM and MassDOT's long-term continuous simulation model. The calculator will be included in MassDOT's WQDF and also in a stand-alone excel tool.<br>MassDOT continues to work with USGS in the development and use of SELDM. | MassDOT will incorporate the calculator into MassDOT's WQDF and also in a stand-alone excel tool. MassDOT will use the values to estimate loading and pollutant treatment for all of its inventoried BMPs where data is available. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 5F **Removed** | 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. | 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. | Environmental reviewed 18 right of way canvasses. All sales, transfers, and leases of MassDOT properties were approved. Conditions were developed for parcels that were determined to potentially impact existing stormwater facilities or wetlands. These conditions were made standard for all future right-of-way canvass agreements. | The Environmental Section will continue to review canvasses as they are presented. The emphasis will remain on keeping parcels of land that are highly suitable for stormwater treatment (as well as wetland replication). |
| 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.<br>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.<br>There were no referrals to the Attorney General's office during Permit Year 12.<br>The standard Notice of Violation (NOV) Letter has been revised.<br>The IDDE Table in Appendix A has been updated to reflect the current status for each case. | MassDOT's Environmental Services Section will continue to communicate (where possible) with the property owners and move toward resolution of the issues.<br>The improved Notice of Violation (NOV) Letter will now be used any new event involving illicit and/or unauthorized discharges and connections that tie-in to MassDOT's drainage system. |
| 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 is being implemented when necessary.<br>Appendix B 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 continue to be implemented for tie-in issues and procedures. MassDOT will also continue to update Appendix B as needed. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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. | During Permit Year 13, MassDOT identified a location where a car dealership was dumping snow from their facility into MassDOT's right-of-way where a stormwater BMP was located. MassDOT's Stormwater Unit along with the MassDOT Legal Office issued a letter to the dealership directing them to cease this operation immediately. The dealership responded and agreed to develop an alternate snow removal plan and discontinue use of MassDOT property. | MassDOT will monitor the winter operations of the dealership and ensure no future snow dumping occurs on MassDOT property.<br>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. | 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. Additionally, MassDOT has implemented a new project review and prioritization process which MassDOT's Stormwater Unit is integrally involved. See the additional BMP for Project Selection and Advisory Council on the following pages for more information. | Continue to include environmental component in evaluation procedure. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 5K | Federal Enhancement Funding | Planning | Explore opportunities for using Federal enhancement funding for environmental restoration and pollution abatement projects. Participate in quarterly committee meetings. | MassDOT no longer utilizes TAP funding for the Impaired Waters Program. Instead, funding for structural stormwater improvements is received now through the FHWA Surface Transportation Program (STP) under Transportation Enhancements.<br>MassDOT has continued to secure funding for the Impaired Waters Program. MassDOT advertised $12,075,000 in stormwater improvements in PY13. This included approximately $9.58 million in Federal Fiscal Year 2015 (from April 2015-September 2015) and approximately $2.5 million to date in Federal Fiscal Year 2016. . | Continue to utilize funding from the STP for the Impaired Waters Program.<br>For the remaining time within Federal Fiscal Year 2016 (through September 2016), MassDOT will advertise approximately $5.2 million in stormwater improvements projects. An additional $5.2 million is allocated to stormwater improvement projects in Federal Fiscal Year 2017. |
| Addn. | Rest Area Pet Waste Program | Environmental/Office of Real Estate Development | | MassDOT completed a study of all rest areas within the watershed of a pathogen impaired water body for installation of pet waste stations (signage, bags, and waste disposal). In MassDOT-owned Service Plazas, those with tenants such as gas stations or food vendors, MassDOT began discussions to delegate the maintenance responsibility of the pet waste stations on the tenants and to include this requirement in upcoming lease agreements. | In Permit Year 14, MassDOT plans to renew leases with Service Plaza tenants along I-90. Language will be included in the renewed leases that tenants will be required to install pet waste stations and maintain those facilities for the entire term of the lease agreement. For unmanned rest areas, especially those with no facilities including waste barrels, MassDOT will need to identify funding sources for the maintenance of pet waste stations. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| Addn. | Project Selection and Advisory Council (PSAC) | Environmental | | MassDOT's stormwater unit has become involved in the Project Selection and Advisory Council (PSAC), which has developed and implemented a standardized scoring system to effectively evaluate project merit for the goal of delivering a balanced transportation investment program. A potential project is scored based on a wide variety of attributes, which includes impacts to water quality and other environmental resources, where a project will score negatively if water quality impacts are anticipated or positively for projects that may improve existing stormwater quality. The inclusion of MassDOT's stormwater unit in the PSAC scoring process has provided improved identification of a potential project's overall impact to water quality, therefore allowing the Council to arrive at more informed decisions on a project's viability. | MassDOT's Stormwater Unit will continue to have an active role in the PSAC moving forward. |

## 6. Pollution Prevention and Good Housekeeping in Municipal Operations

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 6A-1 **Removed** | Source Control - 511 Massachusetts Traveler Information System | Project Clean/ Operations | Maintain the existing 511 System. | Revised – see 6A-1 below. | BMP removed. |
| 6A-1 **Revised** | Source Control - Call-In Numbers for Roadway Debris | Operations | Maintain Call-In Numbers for Roadway Debris | Each District and Headquarters has a general call-in number for the public to use to alert MassDOT of roadway debris. If Headquarter receives the call, then the information is forwarded to the appropriate District. The information is then forwarded to the Maintenance Department Foreman, who coordinates with the workers to alleviate the situation. Contact information can be found at this link: http://www.massdot.state.ma.us/ContactUs.aspx<br>Call-in numbers are listed below.<br>• *Headquarters: (857) 368-4636*<br>• *District 1: (413)-637-5700*<br>• *District 2: (413) 582-0599*<br>• *District 3: (508) 929-3800*<br>• *District 4: (781) 641-8300*<br>• *District 5: (508) 824-6633*<br>• *District 6: (857) 368-6100*<br>MassDOT provides Highway Assistance Patrol (HAP), an emergency roadway assistance service, along the most highly traveled roadways in Massachusetts. HAP patrols 982,000 miles annually and removes roadway debris when encountered, in addition to other services. | The call-in numbers will continue to be utilized for the public to call in about roadway debris. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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 566 miles were cleaned for litter pick-up by Sponsor-A-Highway. MassDOT continues to maintain, repair, and replace program signs as needed. | MassDOT will 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. | MassDOT continues to support the De-icing and Reduced Salt Areas Programs.<br><br>Material Usage Committee meetings were held on 8/27/2015 and 11/10/2015. Topics discussed include: the annual training program; increased coordination with state police during storms; the elimination of Reduced Salt Zone in Andover; new technology; new areas of concern; test piloting the use of loader scales to improve material usage data management; installation of non-invasive pavement-temperature and friction monitors; and retiring the outdated RT3 friction meter. The committee also discussed material usage data and the ESPR Annual Report. | The next meeting will be held in the summer/spring of 2016. The committee will review results from RSZ study, new areas of concern, and the Snow and Ice Control Program annual update. |
| 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 provided 35 Highway Assistance Program (HAP) vans and/or tow trucks. The HAP vehicles cover 25 patrol routes on Massachusetts' most highly traveled roads and patrols approximately 982,000 miles annually. | MassDOT will continue to maintain this program. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 6A-5 | Source Control - VMP | Environmental | 1) Develop a generic Vegetation Management Plan (VMP) which outlines methods of minimizing the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers.<br>2) Prepare a Yearly Operational Plan (YOP) by April of each year.<br>3) Post YOP on web site within 30 days.<br>4) Summarize actions taken in previous year in annual report. | A VMP was not issued for Districts 2-5 this year, therefore no herbicide spraying occurred this year in those districts.<br><br>District 1 still has an active VMP, which only allows herbicide spraying beneath the guardrail along I-90. The 2014-2018 VMP is posted on MassDOT's website along with the 2015 YOP for District 1, at http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/ManualsPublicationsForms.aspx<br><br>MassDOT continues selective spraying of invasive plants as part of some construction projects to prevent the spread of invasive plants that are documented on site. No VMP has been developed. District 1 does plan to spray this season only on the turnpike in District 1 and they will be filling a YOP (same as last year). | MassDOT anticipates very limited spraying statewide- mostly for treatment of invasive plants. |
| 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. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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. | MassDOT continues to utilize Transportation Alternatives Program (TAP) and Congestion Mitigation and Air Quality (CMAQ) funding to fund bicycle and walking infrastructure improvements as part of the Safe Routes to School Program and other transportation improvement projects. In addition, in November 2015, the Baker-Polito Administration and MassDOT announced a $12.5 million Complete Streets Funding Program in an effort to encourage cities and towns in the Commonwealth to design and construct projects to make street networks safer and more efficient for pedestrians, cyclists, drivers, and users of mass transit. The Complete Streets Funding Program provides up to $50,000 in Technical Assistance and $400,000 in construction funding.<br><br>MassDOT initiated the development of a new statewide Pedestrian Plan that will be completed next year. | Continue to provide funding for bicycle, walking, and complete streets enhancements across the state. |
| 6A-8 | Source Control- Highway Safety | Highway Design | 1) Incorporate safety measures into all new highway designs. 2) Provide signage to warn of vehicle hazards including tipping hazards and steep grades. 3) Install variable message boards (VMBs) on selected roadways to improve driver awareness. 4) Include evolving safety technologies as part of future highway design projects as they are developed. | Safety measures are included in all new highway designs including appropriate signage and evolving technologies. 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 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 6A-9 **Revised** | Source Control - GreenDOT | 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. | The Department's TUR/P2 Program has been superseded by the department's GreenDOT and Climate Control Initiatives.<br><br>MassDOT continued use of water-based, lead-free and chrome-free traffic marking paints; indoor storage of raw materials (oils, chemicals, salt). HPLV (2-4 gpm) pressure washers used for vehicle cleaning and degreasing vs. standard hose (20-25 gpm). MassDOT continued enforcement of the indoor-only vehicle washing policy. | MassDOT will continue to support the principles of the previous TUR/P2 Program, which has now been superseded by GreenDOT. 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 | Facilitate one training program related to stormwater and/or snow and ice control as a means of reducing source pollution. Document attendance numbers. | Snow and ice control classes were conducted in Permit Year 13 with a total of 680 attendees. Trainings dates were October through November 2014.<br>Topics covered included:<br>• Anti-icing<br>• Department operations<br>• Salt and environmental considerations<br>Additionally, 7 classes were held by Baystate Roads on snow and ice operations with a total of 200 attendees. Topics included:<br>• The proper use of salt and liquid anti-icers and the environmental impacts.<br>• Pre wetting and pre-treating<br>• Anti-icing vs. De-icing.<br>• The use of sand and its environmental impact.<br>• Equipment calibration, usage specification and technology.<br>• How to convert from sand to salt, large city or rural town.<br>• Snow and ice policy for public review.<br>• Cost benefit analysis of salt vs. sand. | Provide one training program for MassDOT employees (provided by MTAP) and one for municipal DPW snowplow drivers (provided by MTAP/Baystate Roads) related to snow and ice control as a means of reducing source pollution. Document attendance numbers. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 6B-2 | Employee Training | Environmental | Provide annual training to at least 300 maintenance facility personnel regarding good housekeeping/ spill prevention. | Trainings were provided during the winter of 2015/2016for 293 maintenance facility personnel. Training included discussion of the following topics:<br>• Environmental Awareness Training<br>• Multi-media compliance<br>• Waste and raw materials management relative to stormwater pollution prevention<br>• Reporting of oil/hazmat to stormwater systems<br>• Asbestos containing materials<br>• Solid waste<br>• Roadside issues<br>• Storage tanks<br>• Wetlands protection and compliance<br>• Recordkeeping<br>• Inspections<br>• Water quality (including stormwater issues)<br>• Natural resources<br>• Spill management<br>• Hazardous materials management<br>• Hazardous waste management<br>• Universal waste management<br>• Stage II vapor recovery system inspection | MassDOT will again provide annual training to maintenance facility personnel regarding good housekeeping practices and spill prevention. |
| 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. | 32 Snow & Ice trainings were held in October and November 2015 for roughly 680 state personnel and roughly 360 vendors, Topics covered include: anti-icing vs. deicing, BMP's operational improvements, winter severity index, sensitive environmental receptors and how we can evaluate and integrate sustainability into snow and ice operations. | MassDOT will continue to provide training and focus on operational efficiency and effectiveness. Topics to discuss will include material usage data, technology and cause and effect of snow & ice operations and environmentally sensitive areas. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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. | Each MassDOT district has hosted trainings for maintenance personnel in Permit Year 13 on the correct usage of construction and maintenance equipment, including but not limited to mowers, street sweepers, front end loaders, tractor trailers, and bucket lifts. | MassDOT will provide operational, safety, and maintenance training on sweeper training, mower training, and snow and ice equipment training. Training is based on the District's needs and requests. |
| 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 and performed street sweeping and regular drainage system maintenance. See Appendix H 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. | Site specific facility handbooks were created in 1995. This year no updates were necessary for the EMS Manual. The manual is posted on the internal MassDOT web site. The public website is currently being updated.<br>The facility maps have been revised. MassDOT is in the process of finalizing updates to the Environmental Standard Operating Procedures (ENV SOPs) and the audit checklist. | Planned routine updates are scheduled for Permit Year 14.<br>MassDOT will continue to post updated materials to the public website. EMS materials including the Manual and the Handbook will be uploaded once the website has been updated.<br>Expect to revise the Facility Environmental Handbook and the Environmental Management System Manual in calendar year 2016. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 6C-3 | Maintenance Record and Data Management Work Management System | Environmental | 1) Develop work management system.<br>2) Populate program with infrastructure information as available.<br>3) Implement system and begin to record maintenance activities in these watersheds. | The Maximo Asset and Maintenance Management System is being used in each of MassDOT's Districts as a maintenance work order program.<br>Drainage-related work orders are tracked in the system.<br>Most of the work involves ongoing catch basin cleaning, unplugging and repair. Other documented activities include waterway digging and clearing, drainage structure maintenance, drop inlet cleaning, and culvert cleaning.<br>The system is still in its early stages and is not yet at a point where information can be easily pulled from for reporting purposes. MassDOT is actively developing an Asset Management System to optimize the information collected. | Continue to optimize the data collection in the Maximo Asset and Maintenance Management System through the Asset Management initiative.<br><br>Begin populating drainage infrastructure and develop a method to ensure maintenance activities are captured.<br><br>Continue to pilot stormwater BMP inspection program, identify appropriate inspectors statewide, train inspectors, and implement program. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 6D | Waste Disposal | Districts | 1) Street sweeping waste will be reused in appropriate slope stabilization and road work projects in compliance with SOP, when appropriate.<br>2) Street Sweeping material which cannot be reused will be disposed of at landfills as daily cover.<br>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. | MassDOT and its contractors continue to properly dispose of waste. MassDOT did not have an appropriate opportunity to reuse street sweeping waste. MassDOT removed an estimated 13,817 C.Y. of sweeping material and 38,328 C.Y. of drainage structure material this year. Material removed is summarized below.<br>• District 1 had 1,512 C.Y. of sweeping materials removed and 2,232 C.Y. of drainage structure waste removed.<br>• District 2 had 3,400 C.Y. of sweeping materials removed and 780 C.Y. of drainage structure waste removed.<br>• District 3 had 1,429 C.Y. of sweeping materials removed and 3686 C.Y. of drainage structure waste removed.<br>• District 4 had 4,519 C.Y. of sweeping materials removed and 200 C.Y. of drainage structure removed.<br>• District 5 had 1,203 C.Y. of sweeping materials removed and 1,300 C.Y. of drainage structure waste removed.<br>• District 6 had 2,627.7 C.Y. of sweeping materials removed and 327.07 C.Y. of drainage structure waste removed. | MassDOT and its contractors will continue to properly dispose of waste and ensure disposal of street sweepings and catch basin cleanings are in accordance with DEP policy. |
| 6E – **Removed** | 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. | No further action recommended. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 6E **Revised** | Catch Basin Accumulation Project | Environmental/ Maintenance/ Districts | 1) Provide annual report on progress each December and include summary in annual report.<br>2) Complete a study of debris accumulation in catch basins.<br>3) Based on the results of the study, revise the existing cleaning schedule and SOP for catch basin cleaning. | Measurable 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. | MassDOT plans to conduct a catch basin study along I-95 in Needham and Wellesley following the completion of the Add-a-Lane project. The study will involve inspecting a representative set of catch basins four times per year for one year. This will inform MassDOT and MassDEP on the appropriate, effective, and efficient cleaning schedule required for catch basins along this corridor and potentially inform programs statewide. |
| 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. | The program is evaluated each year and took place during the winter season of 2015-2016. MassDOT completed a program to include Closed Loop Ground Speed Controller Systems on all material spreaders. This allows truck operators 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.<br>Based on the program evaluation, MassDOT is using less material for a winter of similar severity as compared to past years. Using the Winter Severity Index (WSI). A comparison of annual salt usage for the past 15 years is included in Appendix H and shows MassDOT used approximately 14 tons or 28% less salt in the winter of 2015 compared to the winter of 2005, despite having 20-25% more lane miles to maintain. | The program will be evaluated annually. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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. | MassDOT continues to provide the Salt Remediation Program with a funding level appropriate to quickly address salt related complaints. Funding has been provided through Interdepartmental Service Agreement (ISA) totaling 1.5 million between April 2015 and March 2016.<br>Unlike private well complaints, which are investigated and remediated by MassDOT's Salt Remediation Program, public water supplies concerned about elevated levels of sodium and/or chloride will provide water quality results to MassDOT for evaluating the effectiveness of snow & ice control BMPs in those areas. Based on the evaluation, MassDOT will make operational improvements as needed. An updated version of the Public Well Supply Matrix is included as Appendix I of this annual report to summarize the current status of these public water supply complaints. | Continue Salt Remediation Program and continue ISA funding for the program. |
| 6H | Clean Well Initiative | Environmental | Provide a continued level of funding that will allow MassDOT to complete up to 20 replacement wells per year. | MassDOT remediated five (5) wells and installed 1 water treatment system in the following locations:<br>Ashby (1 well)<br>Grafton (1 well)<br>Lancaster (1 well)<br>Palmer (2 wells)<br>Hopkinton (1 water treatment)<br>An updated version of the Public Well Supply Matrix is included as Appendix I of this annual report to summarize the current status of each public well included in the Clean Well Initiative Program. | Continue sampling and analysis of private water supply 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 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 6I | Salt/Sand Management and Storage | Operations | 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.<br>**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.<br>**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.<br>(Continued on next page) | MassDOT continues to staff the position of Director of Snow and Ice Operations.<br>MassDOT demolished the Andover I-495 covered salt shed and constructed a new replacement shed at Andover (River Road) Additionally, a new salt shed was constructed at Route 125 in Andover and a salt shed was rehabilitated at Route 28 (Apache Pass) in Reading. | Continue to train our personnel to be aware of wetlands in and around our facilities.<br><br>MassDOT will repair or replace many damaged sheds. Locations include: Hopkinton, Manchester, Stoughton, Sturbridge and Charlton. Increased capacity needs will be evaluated in Braintree and Yarmouth. Environmentally sensitive areas will be considered in the design process.<br><br>MassDOT will work with area supervisors to manage sand supply in all areas. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 6I (cont'd) | | | The tarp could be peeled back once, before winter operations, and then covered again at the end of the season.<br>**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. | | |
| 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 continued to include environmental stewardship in our winter operations classes. We emphasized the needs to follow the current SOP's on salt management and proper material handling. | Continue to inform personnel of the cause and effects of winter operations on the environment. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 6K | Equipment Improvements | Environmental | MassDOT will continue to expand the use of anti-icing as a standard tool for snow and ice control. | The anti-icing program expanded with the opening of a salt brine production facility in Sagamore in December 2012.<br>The use of anti-icing has increased. MassDOT increased the number of anti-icing equipment and the hours the equipment is utilized. Most of the depots across the Commonwealth have access to direct liquid truck. Interstates are the primary roads targeted followed by all others.<br>MassDOT purchased 75 sets of segmented plow blades (11 foot total, in 2-4' sections and 1-3' section per kit) and required hardware. Better plow blades can do more work with less salt.<br>MassDOT equipped its own spreaders stationed from the New York State Line, eastward to Springfield, MA, with a system that automatically retrieves from each vehicle data profiling miles traveled, pounds of salt spread, and gallons of magnesium chloride used. The system improves efficiency of the overall Snow and Ice Program by avoiding route overlaps which is wasted material. The system also tracks material use better than analog methods.<br>MassDOT started a new contract with a liquid deicing tank contractor and repair and maintenance of existing systems is ongoing. Such maintenance ensures that systems don't lose their contents to the environment. | MassDOT will work on method of quantifying anti-icing activities versus pre-wetting activities.<br>Each District will acquire additional liquid tank trucks to increase roadway pretreatment prior to winter storm events.<br>A small number of obsolete tanks will be replaced and a few facilities will receive new tanks. This will enhance our Agency's ability and directive for all state-owned and contracted vehicles to only use pre wetted salt. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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. | MassDOT-Highway Division is in the first year of a new multi-year agreement with Telvent, our weather provider for approximately 50k.<br>MassDOT worked with the National Weather Services and NOAA to improve our Snow and Ice Operations.<br>Several new non-invasive weather forecasting systems have been installed statewide during April 2015 and March 2016. These are located in Framingham, Worcester, Route 116 Notch (D1), New Bedford, Sagamore, Westport (Route 88), Bernardston (Route 110), Easthampton (Route 91), Hingham (Route 3), a Mobile Trailer (Route 2), a Mobile Trailer (Plymouth), and a truck-mounted weather station in District 4. The non-invasive systems have replaced bulky "5$^{th}$ wheel" mobile devices that had been retrofitted to District vehicles. | MassDOT will continue to investigate pavement temperature forecasting. |
| 6M | Road Weather Information System (RWIS) | Environmental | MassDOT will ensure that these stations will be maintained so as to remain fully functional. | MassDOT has developed an agreement with NH, ME, VT, RI and CT to expand the data sharing of RWIS station data, significantly expanding the RWIS network.<br>MassDOT has a new weather contract with an industry-leading Weather Forecasting firm. The contract offers improved tracking on weather events and event starting and ending times per District Area. The contract includes recommended road treatment plans specific to an area per its anticipated weather. The contract also allows us access to our historical RWIS data. This is being used to evaluate how we performed during any event on the Area, District, or Agency level. | MassDOT will work to expand the use of RWIS data across the Commonwealth. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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. | MassDOT – Highway Division has increased the use of liquid anti-icers in an attempt to reduce the amounts of granular sodium chloride. MassDOT no longer uses calcium chloride and is instead using magnesium chloride as an alternative deicer.<br>Research is proving that by better timing and proper application rates, MassDOT could reduce the overall chlorides dispensed in the 'reduce salt zone.'<br>The uses of anti-icing techniques have significantly reduced the amount of deicer required to keep the roads reasonably safe.<br>Additionally, all MassDOT salt spreader trucks now operate with a closed loop controller system. Furthermore, all MassDOT contractors are required to operate their spreaders using closed loop controllers as well. | MassDOT will continue to reduce the quantity of granular sodium chloride, develop operation BMPs to reduce the use of sodium chloride, and 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. |
| 6O | Research | Operations | MassDOT has joined Clear Roads program and will continue to explore moving forward on other projects. Summarize research performed. | Massachusetts has continued to commit resources towards Clear Roads and MassDOT continues to be an active member in the Clear Roads program.<br>Clear Roads activities are documented on their web-site Clearroads.org. Research continues to assist MassDOT by bringing the most current practices to Operations. New research projects being conducted include:<br>• Snowplow operator and supervisor training<br>• Snow and ice control-environmental management practices<br>• Winter maintenance interchange best practices.<br>• Evaluating GIS based technologies to better manage plow routes and avoid material/equipment overlaps. | MassDOT will continue to support, participate, and use the research and benefits of collaboration with Clear Roads. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| Addn. | MassDOT Research Needs Program (Previously indicated as BMP 4G but focus of research program is now for source control instead of construction) | Environmental/ Construction | Continue funding the MassDOT Research Needs Program. | Continued funding the MassDOT Research Needs Program. MassDOT participated in NCHRP studies concerning limitations of the infiltration approach to stormwater management in the highway setting, stormwater monitoring programs, innovative dissolved metals BMPs, and TMDL compliance. Ratified an agreement with USGS to study phosphorous loading off bridges. | MassDOT will continue to participate in NCHRP studies as well as work with USGS to consult as needed on water quality issues and on the phosphorus loading off bridges. |
| Addn. | Open Graded Friction Course | Environmental | Complete Study on Open Graded Friction Course benefits on stormwater treatment | MassDOT, along with USGS, has initiated a study on the water quality benefits of Open Graded Friction Course (OGFC). The reason for this study is to obtain stormwater treatment credit from MassDEP for use of this technology along a section of I-95 in Needham and Wellesley. Open-graded-friction-course has stormwater quality benefits, as it reduces vehicle "underwash" and runoff volumes, and contributes fewer pollutants to runoff than traditional pavement. A study area, where traditional hot-mix asphalt adjoins the OGFC pavement, has tentatively been selected. The site requires further evaluation, e.g., survey, design feasibility of construction, berms to convey the stormwater to water quality sampling locations. | Continue discussions with MassDEP regarding obtaining stormwater treatment credit for OGFC use in any location. Make preparations for the study to confirm water quality benefits associated with use of this BMP in consultation with MassDEP. |
| Addn. | Litter Removal Contract | District 5 | Provide funding for private litter removal contract. | MassDOT's District 5 initiated a litter removal contract for approximately $545,000 in Permit Year 13. District 5 directs the private contractor to remove litter from MassDOT rights-of-way throughout the year based on complaints or known illegal dumping areas. Private litter contractors are also used to collect litter where the no Adopt-a-Highway agreements are in place or inmate programs are lacking. In Permit Year 13, over 1,400 bags of litter and 12 truckloads of debris were collected. | Continue to use private litter collection contractors in District 5. Increase funding of contract as needed and as funds are available. |

## 7. Impaired Waters

| BMP ID # | BMP Description | Responsible Dept./ Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 7A | Wetland Protection Act (WPA) Compliance | Environmental | 1) All MassDOT projects will comply with the WPA and MESA.<br>2) When potential impacts are identified, MassDOT will work with the appropriate agencies to design the project to minimize the impacts. | Continued to comply with requirements of MESA and the WPA. | Continued to comply with requirements of MESA and 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. | 85 Categorical Exclusion (CE) checklists were completed and approved for all federally-aided projects advertised for construction by MassDOT during Permit Year 13. All documentation supporting the MassDOT's determination of a project meeting the definition of a Categorical Exclusion is on file with Environmental Services Department at MassDOT Highway Division. | Continue to approve Categorical Exclusion Checklists in support of MassDOT Highway Division's Construction Advertising Program. |

| BMP ID # | BMP Description | Responsible Dept./ Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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. | The WQDF captures information during programmed projects 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 to MassDOT. The form requires the designer to document information about the stormwater system and the receiving water.<br>MassDOT has received more than 128 water quality data forms; 87 at the 25% design phase and 41 forms at the 75% design phase. Of these, 79 had water quality impairments, 38 of which had a final Total Maximum Daily Load report, and 46 were in a watershed covered by a TMDL. The 75% forms documented a total of 39 stormwater BMPs (existing and proposed) and at least 701 proposed deep sump catch basins.<br>Additionally, non-structural BMPs implemented for these projects were documented and included measures such as street sweeping, protecting sensitive areas, inspection and cleaning of stormwater structures, catch basin cleaning, snow removal and deicing controls, and use of sediment and erosion controls during construction. For more information on the data collected through the WQDF, please see Appendix E. | Continue to require submittal of forms at 25% and 75% design submittals. Report on results in annual report.<br>Continue to educate designers on how to accurately and comprehensively complete the WQDF. |

| BMP ID # | BMP Description | Responsible Dept./ Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 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. | While MassDOT has developed a more detailed program in the Impaired Water Program 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 J of this annual report for consistency with new data regarding activities that occurred this year and TMDLs that were finalized this permit year.<br>As part of MassDOT's commitment under our Impaired Waters Program and BMP 7R of the SWMP, MassDOT completed all assessments of impaired waters with TMDLs. Additional information is included under BMP 7R of this report and Permit Year 13 progress in Appendix D. | Continue to review draft and final TMDL reports and implement TMDL recommended activities when possible. |
| 7F – 7Q | TMDL Specific Recommendations | See NOI | | Comply with TMDL recommendations in Appendix J. | Comply with TMDL recommendations in Appendix J. |

| BMP ID # | BMP Description | Responsible Dept./ Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 7R **Revised** | TMDL Watershed Review | Environmental | 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.<br>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).<br>3. Submit annual report to EPA containing the documentation described in Step 6 of BMP 7R.<br>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. | 1. MassDOT has reviewed all waterbodies on the Appendix L-1 list within watersheds with a TMDL and has fulfilled their commitment to the court. In the June 8, 2015 final semi-annual submission to the EPA, MassDOT included 22 assessments of water bodies covered by a TMDL. These water bodies were not included in the Appendix L-1 list and is in addition to the original commitment to the court.<br>2. Completed in Permit Year 8.<br>3 & 4. A summary of the TMDL waterbodies reviewed during Permit Year 13 is included in Appendix D. MassDOT has completed the review of all TMDL water bodies.<br>MassDOT's consultants (AECOM, BSC, FST, TetraTech, CEI, and VHB) provided environmental assessment and design services for water quality treatment BMPs within watersheds with TMDLs.<br>MassDOT continues to be an active participant in developing TMDLs with EPA and DEP. Appendix J includes a review of final TMDLs and the implementation requirements which are relevant to MassDOT. | Future activities of the Impaired Waters Program are summarized in Appendix D. As of June 8, 2015, MassDOT has assessed all impaired waterbodies within the MS4 permit area.<br>MassDOT will continue to be an active participant in developing TMDLs that impact MassDOT with EPA and DEP. MassDOT will provide public comment on draft TMDLs as appropriate.<br>As new TMDLs are finalized, they will be reviewed during future designs of programmed projects. |
| 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 Salt Remediation Program budget is $4.05 million from July 2015 through June 2018. | 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 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 7T<br>**Added** | Review of Specific Sites for Water Quality Exceedances in Response to Conservation Law Foundation (CLF) et al. Lawsuit | Environmental | 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.<br>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.<br>3. Submit a remedial plan to the court. | 1. Task completed in Permit Year 8.<br>2. Task completed in Permit Year 8.<br>3 Task completed in Permit Year 8. | All required actions have been completed. |

| BMP ID # | BMP Description | Responsible Dept./ Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| 7U **Revised** | Water Quality Impaired Waters Assessment and Mitigation Plan | Environmental | 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.<br>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).<br>3) Submit quarterly progress reports to EPA during the first year of the Impaired Waters Program and semi-annually thereafter.<br>4) Provide documentation described in step 6 of BMP 7U in annual reports to the EPA. | 1) MassDOT submitted 63 assessments to EPA as part of its semi-annual submittals this permit year. On June 8, 2015, MassDOT submitted its final semi-annual submittal to the EPA completing its commitment to the court. In total, MassDOT assessed 826 water body segments between 2010 and 2015.<br>2) Completed in Permit Year 8.<br>3) MassDOT submitted its final semi-annual report on June 8, 2015.<br>4) A summary of the water bodies reviewed during Permit Year 12 is included in Appendix D.<br>MassDOT's consultants (AECOM, BSC, FST, CEI, TetraTech and VHB) provided environmental assessment and design services for retrofit water quality treatment BMPs within watersheds both with and without TMDLs. | Future activities of the Impaired Waters Program are summarized in Appendix D. MassDOT will continue to develop designs for BMPs to address impaired waters under the Impaired Waters Program. |
| 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 the reporting year 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. | The Cultural Resources Unit will continue to review projects for any stormwater impacts to historic resources at the 25% design stage. |

| BMP ID # | BMP Description | Responsible Dept./ Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 13 | Planned Activities – 2016/2017 |
|---|---|---|---|---|---|
| Addn. | V-Pass Pollutant Assessment Simulation for SWMM | Environmental/ Consultant | | MassDOT used the supplemental approach on multiple Retrofit Initiative designs in PY 13. MassDOT, their consultant and EPA have met multiple times to discuss the calibration of the model to loading values in draft NPDES permits.<br>MassDOT has initiated collaboration with EPA to develop a load and BMP credit calculator using published data from EPA, and results from SELDM and MassDOT's V-Pass long-term continuous simulation model. The calculator will be included in MassDOT's WQDF and also in a stand-alone excel tool. | MassDOT will incorporate the calculator into MassDOT's WQDF and also in a stand-alone excel tool. MassDOT will use the values to estimate loading and pollutant treatment for all of its inventoried BMPs where data is available. |
| Addn. | Programmed Projects Initiative | Environmental/ Consultant | | MassDOT continues to implement stormwater BMPs in programmed projects that drain to an impaired water body. The WQDF documented 39 existing and proposed stormwater BMPs this permit year. Refer to Appendix D for more detail on the Programmed Project Initiative and Appendix E for data collected in WQDFs submitted in PY 13. | MassDOT will continue the Programmed Projects Initiative. |

## 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 thirteenth permit year are summarized in Part 1- 4 of this annual report. Additional BMPs that have been added this year have been added to the matrix above with new "Additional" row, rather than summarized below. Additional accomplishments are described below.

The MassDOT Environmental Services Stormwater Unit continues to consist of three environmental scientists and to focus on stormwater management across the Commonwealth. The Stormwater Unit reviews the drainage/stormwater management system for all programmed projects, identifies programmed projects that would benefit from the implementation of structural stormwater BMPs, ensures effective BMPs are designed, and implements the Impaired Waters Program. Additionally, the Stormwater Unit works to expand its BMP and drainage inventory, and promote inspection and maintenance practices. In Permit Year 13, the Stormwater Unit hired two summer interns and one co-op (a 6-month internship program) which increased the overall capacity of the Unit.

## List of Appendices

# Appendix A: IDDE Status Table

IDDE Status Table

| Date | Location | Flow | Source Justification | Test Results | Current Status of Follow up | Action Item | DOT District Responsibility | Flow Owner Contact Information |
|---|---|---|---|---|---|---|---|---|
| 2012 | 626 Bedford Street (Route 18) East Bridgewater | Not Present | Illicit Discharge Survey | Not Tested | A survey was conducted in 2012 on two catch basins and two manholes with suspicious pipes located within them. No dry weather flow was observed. DOT confirmed no knowledge of tie-in. | Upon recent field investigation of the site, it was determined there was no visible tie-in present. This site is no longer considered a potential illicit/unauthorized survey. | District 5 | Joppa Market (508) 378-1313 |
| 2012 | 257 Mansfield Avenue (Route 140) Norton, MA | Not Present | Illicit Discharge Survey | Not Tested | MassDOT conducted two site visits at this location in 2012 and determined the source of this connection is located off of MassDOT property. Property owner was contacted by Mr. George Ayoub in 2012 and was asked to apply for a permit. No record of the permit is known at MA DOT. | Notify the town of Norton of the connection | District 5 | Norton Estates (508) 285-2901 |
| 2007 | 209 Main Street (Route 1A) Rowley, MA | Not Present | 1" black rubber hose noted from residence to MassDOT catch basin | Not Tested | A letter was sent to the residence of 209 Main Street, Rowley, MA on 10/7/2011. The property owner was given 60 days to respond. A response was not received during this time period. MassDOT Environmental contacted the property owner via telephone and left a detailed message regarding the unpermitted flow. A return phone call was received from the property owner. MassDOT is currently working with the property owner to resolve the issue. | District 4 will follow up with property owner to determine if this is a permitted connection. | District 4 | Robert and Kathryn Casaletto (978) 948-2911 |
| 2010 | Rent-A-Tool 777 North Shore Road (1A), Revere, MA | Trickle | District 4 staff identified flow discharging to a MassDOT catch basin/Follow up Illicit Discharge survey | Not Tested | A permit application was submitted to MassDOT in 2010. Additional information was requested by MassDOT but was not received. In 2013 MassDOT environmental contacted the business owner via telephone and left a detailed message, a return phone call has not been received. | District 4 will follow up with property owner and then send an NOV letter, if necessary. | District 4 | Rent-A-Tool (Steve Williams) (781) 829-3900 |
| 2011 | Dunkin Donuts 888 Main Street Woburn, MA | Not Present | District 4 staff identified a 4" pipe connected to a MassDOT catch basin | Not Tested | In 2011 a letter was sent to the property owner and a phone call was placed in 2013. MassDOT has not received a response from the letter or phone communication. | District 4 will follow up with property owner to determine if this is a permitted connection. | District 4 | Dunkin Donuts (781) 932-0548 |
| 2011 | 454 Patriots Road (Route 2A) Templeton, MA | Not Present | District 2 observed a small pipe exiting this property during a maintenance call | Not Tested | In 2012 a letter was sent to the property owner and a phone call was placed in 2013. MassDOT has not received responses to either form of communication. District staff do not think the flow directly ties into the DOT system. | A follow up visit should be conducted to determine the source of this flow, and follow up with the town should be conducted if this is not connected to MA DOT property | District 2 | Charlie Perkins (978) 939-1063 (978) 939-8980 |
| 2007 | Dorrance, Inc. 283 West Main Street (Route 123) Norton, MA | Not Present | Tie-in identified by MassDOT at private residence | Not Tested | A letter and permit application was sent to the homeowner in September of 2011. In March of 2013 MassDOT Environmental left a detailed message with the homeowner regarding the suspect flow. The permit application has yet to be submitted and a return phone call has not been received. | A follow-up visit should be scheduled to confirm tie-in still exists and then follow-up with a NOV letter. | District 5 | Carl Dorrance (508) 455-0299 |

IDDE Status Table

| Date | Location | Flow | Source Justification | Test Results | Current Status of Follow up | Action Item | DOT District Responsibility | Flow Owner Contact Information |
|---|---|---|---|---|---|---|---|---|
| 2012 | 469 Taunton Avenue (Route 44) Seekonk, MA | Not Present | Impaired Waters Site Visit | Not Tested | This connection was found during an Impaired Waters Site visit in 2012. No flow was present and therefore not tested. | A follow up visit will be conducted to determine the source of this flow. If flow is present a sample will be collected and tested to determine the potential source. | District 5 | Mark Chandley (Country Kitchen) (508) 336-9807 |
| 2010 | I-93/Mystic River, near 32 Shore Drive Somerville, MA | Trickle | MyRWA Water Quality Survey/Illicit Discharge survey | Sanitary Sewer/Washwater | Two site visits have been conducted at this location and samples have been collected and tested. Field surveys have not yielded conclusive information on the source flow. | Follow up to be conducted including CCTV inspection to be completed by June 30, 2015, followed by NOV letters to Somerville, as necessary. | District 4 | MassDOT District 4/MyWRA |
| 2010 | Mystic Avenue Somerville, MA | Trickle | Illicit Discharge Survey | Sanitary Sewer | Flow originates off of MassDOT property onto town of Somerville property | Field investigations conducted June 2015 concluded elevated fluoride and ammonia concentrations were present, but E. Coli levels were within acceptable ranges. Determined that source of connection was groundwater, and that location is currently undergoing remediation via joint and crack sealing on the drainage pipe in question. | District 4 | City of Somerville (617) 666-3311 |
| 2010 | Route 3 Billerica | Trickle | Illicit Discharge Survey | Washwater | Original source flow was determined to be originating at a clogged catch basin. MassDOT has since cleaned the clogged catch basin and will revisit this location to determine if flow is still present. | District 4 to revisit this location and determine if unclogged catch basin has resolved during dry weather. | District 4 | MassDOT District 4 |
| 2010 | Route 3 Billerica (Concord Road) | Trickle | Illicit Discharge Survey | Washwater | Flow originates off of MassDOT property onto town of Billerica Property | Site investigation completed in June 2015, determined that flow originated from Route 3 median, therefore no illicit source is present. No further action is required. Should remove from next annual report. | District 4 | Town of Billerica (978) 671-0924 |
| 2010 | Route 2/Spy Pond, Belmont/Arlington, MA | Not Present | MyRWA water quality survey/Illicit Discharge survey | Not known | MassDOT will contact the Towns of Arlington and Belmont via letter notifying them of a potential illicit connection to the drainage that connects to the Route 2 system. | Follow-up field work and sampling conducted in June 2015, water quality sampling did not indicate presence of illicit connection. Also, there was no physical sign of an illicit connection, however an elevation in E. Coli concentration was noted at one sampling location, and elevated ammonia concentrations at another sampling location. | District 4 | Town of Arlington (781) 316-3000 Town of Belmont (617) 993-2650 |

# Appendix B: Status of Drainage Tie-in Permits

Status of Drainage Tie-In Permits

| Permit | Date | Location | Flow | Source Justification | Test Results | Current Status of Follow up | 2015 Action Item | DOT District Respons | Flow Owner Contact Information |
|---|---|---|---|---|---|---|---|---|---|
| Unpermitted | 2007 | 615 Northampton St. (Route 5), Holyoke, MA | Intermittent | Sediment carried in stormwater during rain events is clogging MassDOT catch basin | Not tested | In December 2011 a letter was sent to the property owner by MassDOT. In March 2013 an attempt to locate the property owners phone number was made but rendered unsuccessful. MassDOT has not had any further contact with the property owner. District 2 confirmed that flow is not permitted. | MassDOT will conduct a follow-up site visit to confirm flow is still present and then continue to work with the property owner to obtain a tie-in permit | District 2 | Tracey Barclay |
| Unpermitted | 2012 | 25 Upton Street (Route 140) Grafton, MA | Not Present | District 3 observed a 2" PVC pipe exiting a residential home | Not Tested | A follow up visit was conducted again in 2012 and the 2" PVC pipe was still present | District 3 will follow up with the property owner to determine if this is a permitted connection | District 3 | Ross Sciarro (508) 839 - 7098 |
| Unpermitted | 2012 | 69 South Main Street (Route 114) Middleton, MA | Intermittent | Illicit Discharge Survey | Natural Water/Tap/Irrigation | MassDOT collected and tested the flow located on this property. | District 4 will work with the Middleton Golf Course to obtain a tie-in permit- waiting for DOT response | District 4 | Middleton Golf Course (978) 774-4075 |
| Unpermitted | 2014 | Route 127 (Summer Street) Kings Way, Manchester, MA | Connection | 11/28/2014 - 6-inch SDR 35 Private Storm Sewer connection to a MassDOT Drain Manhole | Not permitted | NOV letter sent to property owner on 12/8/2014 | District 4 will work with the Owner to obtain a tie-in permit or removal of tie-in | District 4 | Martin Nally & Co. 5 University Lane, Manchester, MA |
| Unpermitted | 2013 | Oak Street Barnstable, MA | Intermittent | Oak Street drainage is connected to MassDOT drainage. Reconstruction of the roadway is in the design phase and the town of Barnstable will remove the drainage tie-in during reconstruction (2013-2014) | Not tested | Construction began in August of 2013, follow up with the town of Barnstable and request new drainage plans. | Site visit confirmed drainage tie-in has been disconnected. MassDOT district 5 awaiting letter from the town of Barnstable confirming the work has been completed. | District 5 | Town of Barnstable (508) 862-4000 |
| Unpermitted | 2012 | 500 Bedford Street (Route 18) East Bridgewater, MA | Intermittent | 4" clay pipe coming from the property, discharging water during dry weather | Natural Source | MassDOT determined this flow is unpermitted. | MassDOT will send a letter to the property owner | District 5 | Albert Medeiros (508) 378-7539 |

Status of Drainage Tie-In Permits

| Permit | Date | Location | Flow | Source Justification | Test Results | Current Status of Follow up | 2015 Action Item | DOT District Respons | Flow Owner Contact Information |
|---|---|---|---|---|---|---|---|---|---|
| Unpermitted | 2013 | Abington Fire Station #1040 Bedford Street Abington, MA | Not Present | An 18" reinforced concrete pipe leading from the property's drainage system and connecting to a drain manhole on Route 18 (Bedford Street) was discovered by MassDOT personnel while conducting site investigations as part of a project to widen a section of that roadway. | Not Tested | A *Notice of Violation* letter was sent to the property owner on January 29, 2014. | MassDOT is coordinating with the Town on the drainage tie-in in conjunction with the Route 18 Widening project. A meeting was held on 8/19/15 to discuss alternatives. | District 5 | Rick LaFond (Town Manager) 781-982-2100 |
| Unpermitted | 2013 | McPhail Realty Trust #1200 Bedford Street Abington, MA | Not Present | A 12" PVC pipe leading from a detention pond on the property and connecting to a MassDOT catch basin on Route 18 (Bedford Street) was discovered by MassDOT personnel while conducting site investigations as part of a project to widen a section of that roadway. In addition to that, a 6" HDPE pipe leading from the detention pond to a different MassDOT catch basin further north on Route 18 was also discovered. | Not Tested | A *Notice of Violation* letter was sent to the property owner on January 28, 2014. | MassDOT is coordinating with the Town on the drainage tie-in in conjunction with the Route 18 Widening project. A meeting was held on 8/19/15 to discuss alternatives. | District 5 | Matthew and Diana McPhail 781-878-2875 |
| Unpermitted | 2013 | Travi Realty Trust #1400 Bedford Street Abington, MA | Not Present | A small drainage system leading from a pond within a wooded area on the property and connecting to a drain manhole on Route 18 (Bedford Street) was discovered by MassDOT personnel while conducting site investigations as part of a project to widen a section of that roadway. In addition to that, several upstream connections and runoff spots were also discovered. | Not Tested | A *Notice of Violation* letter was sent to the property owner on January 24, 2014. | MassDOT is coordinating with the Town on the drainage tie-in in conjunction with the Route 18 Widening project. A meeting was held on 8/19/15 to discuss alternatives. | District 5 | Vincent Travi 781-871-1469 |

Status of Drainage Tie-In Permits

| Permit | Date | Location | Flow | Source Justification | Test Results | Current Status of Follow up | 2015 Action Item | DOT District Respons | Flow Owner Contact Information |
|---|---|---|---|---|---|---|---|---|---|
| Unpermitted | 2012 | Residence, 338 South Main Street (Route 122), Orange MA 01364 | Intermittent | 4" PVC draining flooding backyard (from stormwater) connected to MassDOT catch basin on Route 122. | Groundwater | No further action required. | MassDOT determined no other feasible alternative to a MassDOT tie-in, therefore a non-vehicular access permit was granted to the property owner on June 10, 2014. | District 2 | David Vitols |
| Unpermitted | 2014 | Blockbuster 465 S. Washington St. North Attleborough, MA | Connection | 18" RCP connected to MassDOT drainage | Not tested | A *Notice of Violation* letter was sent to the property owner on September 29, 2014. | Through district investigation, pipe found to not be in violation with the drainage tie-in policy. NOV letter will be rescinded. | District 5 | Skye Enterprises LLC 9 Cedar Ridge Rd. North Attleborough, MA 02760 |

## Appendix C: Notice of Violation (NOV) Letter

*[Letterhead]*

*[Date]*

*CERTIFIED MAIL – RETURN RECEIPT REQUESTED # _____*

*[Contact's Name]*
*[City/Town or Business Name, If Applicable]*
*[Address]*
*[Town/City, State, Zip Code]*

**Notice of Violation**

Re: Illicit and/or Unauthorized Drainage Connection or Discharge to MassDOT Drainage System
Located at _____

Dear _____:

The purpose of this Notice of Violation (NOV) is to inform you, as owner of the above-referenced property, of a suspected connection or discharge to the Massachusetts Department of Transportation's Highway Division (MassDOT) drainage system without a properly issued Non-vehicular Access Permit (tie-in permit).

*[Description of the site (several sentences), along with details of the suspect connection.]*

This is in violation of G.L. c. 81, § 21, regulations found at 720 CMR 13.00, and Standard Operating Procedure No. HMD-02-2-000 (a copy of which is enclosed). Be aware that MassDOT strictly prohibits illicit and/or unauthorized drainage connections and discharges. Any such connection or discharge must be either permitted by MassDOT or immediately disconnected/sealed.

**You have ninety (90) days from the receipt of this notification to contact the person listed below to indicate whether: (1) you will apply for a tie-in permit; (2) you will propose a schedule for the removal of the discharge; or (3) you hold a pre-existing drainage tie-in permit[i]. Should no response be received, a follow-up site investigation will be performed. At that time, should an illicit and/or unauthorized connection or discharge be confirmed, the matter will be forwarded to MassDOT's Chief Legal Counsel for enforcement in conjunction with the Attorney General's Office. This may include fines or penalties of up to $1,000 per day.**

Please be aware, however, that applying for a tie-in permit does not guarantee being granted one and an internal review will be performed in order to determine if the connection or discharge should be permitted.

Thank you for your anticipated cooperation in resolving this matter. Please contact the District __ Permits Engineer, _____, at _____ at your earliest convenience within the 90-day period.

Sincerely,

*[District Highway Director's Signature]*

*[District Highway Director's Name]*
District __ Highway Director

Attachment: Standard Operating Procedure No. HMD-02-02-2-000 (dated 3/19/2012)

cc: Tracy W. Klay, MassDOT Environmental Counsel
Robert Bennett (w/o attachment), MassDOT Environmental Services Section

[i] In the case of a pre-existing permit, MassDOT will consider rescinding the NOV.

# Appendix D: Impaired Waters Program – Summary of NPDES Permit Year 13

# Appendix D

## Impaired Waters Program

Summary of NPDES Permit Year 13

# Table of Contents



# List of Tables

# Attachment A: IWP Project Summary Sheets

# 1.0 Introduction

MassDOT's Impaired Waters Program (IWP) is a robust program addressing roadway stormwater runoff discharging to impaired waters. The program is both part of MassDOT's commitment to improving the quality of stormwater runoff from its highways and is in compliance with the NPDES Phase II Small MS4 General Permit and commitments in the EPA enforcement order dated April 22, 2010. "Impaired" water bodies are those listed as Category 4a or 5 in MassDEP's Integrated List of Waters (referred to as the 303(d) list).

Starting in June 2010, MassDOT made a five-year commitment to assess all impaired water body segments that receive (or potentially receive) stormwater runoff from MassDOT roadways located in urban areas. This program initially included approximately 684 water bodies across the State based on a water body estimate submitted as part of the EPA enforcement and referred to as Appendix L-1. The IWP has since been expanded to encompass the additional urban area identified in the latest census, impaired waters listed on the latest (2012) final 303(d) list, and MassDOT property acquired (e.g., Mass. Turnpike) since the enforcement. Performing a water body assessment includes identifying if runoff from the roadways drains to the water body, whether stormwater is contributing to the impairment, and whether existing Best Management Practices (BMPs) effectively treat runoff from the roadways. The assessment then sets a pollutant removal target for the specific receiving water. When the treatment target is not currently met, MassDOT will design and construct additional water quality BMPs where site conditions allow. To most effectively utilize tax dollars, MassDOT is implementing this program through two initiatives: Retrofit and Programmed Projects.

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. This effort is aimed at reducing the impacts of MassDOT's runoff on impaired water bodies through the implementation of structural BMP retrofits. Since these BMPs are fitted into the existing rights of way (ROWs) and drainage patterns, the opportunity for constructing treatment can be constrained but allows for proactive construction of treatment in locations that would not be addressed by programmed projects in the near future. In previous years, resurfacing projects were considered "programmed projects" but, beginning in 2012, MassDOT proactively included stormwater improvements in resurfacing projects to increase the areas reached by this program. BMP design and construction is underway and MassDOT plans to continue the design and construction expeditiously until complete. Significant funding has been allocated for retrofit construction projects to meet this goal.

Alternatively, improvements occur as part of programmed projects which are those projects where significant improvements are planned for a roadway or intersection (e.g., intersection improvement, highway widening) and MassDOT can include stormwater treatment upgrades. MassDOT's Programmed Projects Initiative is implemented for construction projects where roadways discharge to impaired waters and may also include municipal projects undertaken by MassDOT for local municipalities. MassDOT performs an evaluation of the project area draining to the impaired water body and installs additional structural stormwater BMPs to the maximum extent practicable as part of the roadway construction. Incorporating structural BMPs into construction projects has proven to be much more cost-effective than retrofitting structural BMPs due to the greater flexibility in design and scope of the project. Furthermore, MassDOT has initiated a substantial water quality data form/database project to capture information regarding the improvements included in the programmed projects so they can be evaluated as part of the overall program.

As of MassDOT's final semi-annual report, submitted to the EPA on June 8, 2015, MassDOT had assessed 826 water bodies. Of the 826 assessments, 122 have moved forward into design as retrofit projects, programmed projects, or both. In some cases, BMPs to a single receiving water body are constructed under

separate projects, pulling from retrofit and/or from programmed-project funding based on timing, the locations of contributing roadways, and on the work that MassDOT already has planned. To date, 15 instances have occurred in which water bodies have or will have BMPs constructed under multiple IWP projects, bringing the total number of IWP water body projects from 122 to 137.

**Table 1 Assessment/Design/Construction Project Summary**

| EPA Submittal | Final Program Outcome |
|---|---|
| # of Water Bodies Assessed | 826 |
| Projects to address impaired water bodies move forward with design as part of retrofit, programmed projects or combination project | 137 |
| Projects no longer feasible due to site constraints | 6 |
| Projects in Design | 71 |
| Projects in Construction | 29 |
| Projects with Construction Complete | 31 |

MassDOT continues to use six different consulting design firms to assist with meeting the aggressive goals pertaining to design and construction oversight of IWP projects.

All of the newly constructed BMPs will have a beneficial impact on the runoff from MassDOT roads. An estimated 108 acres of impervious cover (IC) will be treated by the BMPs currently under construction or constructed this past year and 52 lbs/year of phosphorus will be removed in phosphorus Total Maximum Daily Load (TMDL) watersheds.

In addition to structural BMPs, MassDOT has taken many steps to further strengthen the Impaired Waters Program this year. MassDOT has continued to maintain and update the IWP geospatial database to track structural BMPs being designed and constructed by our design consultants and the status of water body assessments. This IWP geospatial database is a powerful tool in the analysis of MassDOT's program and future planning/ water quality analysis.

# 2.0 Retrofit Initiative Stormwater BMPs

The following is a summary of MassDOT's actions through the Retrofit Initiative.

## 2.1 Overview of Progress in Permit Year 13

MassDOT has completed all of the Impaired Waters assessments and is designing many water quality BMPs that will provide pollutant treatment, while advancing effective construction of the designs.

### 2.1.1 Assessments

As a part of a 2010 EPA enforcement, MassDOT identified 684 impaired waters potentially receiving stormwater from MassDOT roads. The waterbodies were listed in Appendix L-1 of the enforcement order. MassDOT completed the assessments of all of those waterbodies this year. MassDOT also assessed water

bodies that were not on the Appendix L-1 list as part of MassDOT's good-faith commitment to improve stormwater runoff quality from its highways. This year MassDOT completed assessment of the final 96 water bodies (Table 2), including 23 water bodies from the original Appendix L-1 list, using methodologies developed as part of the program.

MassDOT has developed a number of methodologies for performing these assessments depending on whether a TMDL is in place for the impaired waters and if receiving waters are fed by groundwater-controlled watersheds or surface watersheds. Below is a summary of the different methodologies:

- **BMP 7U IC Method**: *MassDOT's Application of Impervious Cover Method in BMP 7U*[1] was developed from the EPA's IC Method to assess discharges to impaired water bodies without a TMDL and uses impervious cover as a surrogate for the pollutant of concern.
    - MassDOT also developed a methodology to assess water bodies located on Cape Cod, the Islands, and other parts of southeastern Massachusetts that do not have a TMDL and are located in watersheds mainly driven by groundwater instead of surface water. The *MassDOT's Nitrogen 7U Method*[2] relies on research performed by the United States Geological Survey (USGS) for the Massachusetts Estuaries Program and Buzzards Bay National Estuaries Program and conservatively assumes that the entire nitrogen load from MassDOT property runoff that infiltrates in the USGS determined groundwatershed contributes to the target water body without a load reduction. The assessment reviews if the pollutant load from MassDOT roads exceeds a negligible threshold.
    - Instead of developing an additional methodology, water bodies within groundwater delineated watersheds with phosphorus related impairments were simply evaluated in regard to whether or not they receive direct stormwater discharges from MassDOT roadways. If MassDOT determines direct discharges are present, MassDOT will conservatively implement BMPs to treat stormwater runoff to the maximum extent practical.
- **BMP 7R TMDL Method**: *Description of MassDOT's TMDL Method in BMP 7R*,[3] was developed exclusively for assessing discharges to impaired water bodies with TMDLs that address pollutants typically found in highway stormwater runoff.
    - MassDOT also developed a methodology to assess impaired water bodies with an established nitrogen TMDL in groundwater-controlled watersheds. *MassDOT's Nitrogen TMDL Method*[4] relies on research performed by the USGS for the Massachusetts Estuaries Program and conservatively assumes that the entire nitrogen load from runoff that infiltrates into the USGS determined groundwatershed contributes to the target water body without a load reduction. The assessment reviews if the pollutant load from MassDOT roads exceed a negligible threshold.

---

[1] MassDOT, April 2011. Description of MassDOT's Application of Impervious Cover Method in BMP 7U. Available at: http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/IC_MethodApplication2011Apr6.pdf

[2] MassDOT, December 2014. Description of MassDOT's Application of Nitrogen Groundwater Method in BMP 7U. Available at: http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year5/Attachment7.pdf

[3] MassDOT, June 2012. Description of MassDOT's TMDL Method in BMP 7R. Available at: http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year2/Attachment6.pdf

[4] MassDOT, June 2014. Description of MassDOT's Application of TMDL Method to Nitrogen in Groundwater-Controlled Massachusetts Watersheds. Available at: http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year4/Attachment_5.pdf

- **BMP 7U & 7R**: If the water body has a TMDL but is impaired for additional pollutants not addressed by the TMDL, then the IC Method is also used in the assessment to define the target IC reduction.

Table 2 shows a breakdown of the water bodies assessed this permit year, the assessment method used, and a count of how many of these impaired water bodies are covered by a TMDL.

**Table 2 Assessment Methodology Summary[1]**

| EPA Submittal | June 2015 |
|---|---|
| # of Water Bodies Assessed | 96 |
| BMP 7U - IC Method | 66 |
| BMP 7R - TMDL Method | 14 |
| BMP 7U & 7R Method[2] | 16 |
| # of Water Bodies Covered by TMDLs[3] | 19 |

[1] The counts in this table include all water bodies that were assessed in Year 13, regardless of whether or not they were part of an EPA enforcement list of potential receiving waters (Appendix L-1).

[2] 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. These water bodies were also assessed using the IC Method (BMP 7U) to address those particular pollutants. Additionally, some water bodies may have a pathogen TMDL, so for these water bodies the IC Method was applied for setting a reduction target.

[3] Water bodies with a final TMDL at the time of EPA submittal.

Assessment outcomes have generally fallen into the three categories discussed below.

- **No target reduction set** and no BMP design needed since:
  - the impairments are unrelated to stormwater runoff;
  - the water body's subwatershed and total watershed are less than 9% IC and the water body is not covered by a TMDL; or
  - the water body receives no direct discharges from MassDOT roadway.
- **MassDOT pollutant negligible** – Groundwater fed watersheds along the Cape and Southern MA
- **Target pollutant reduction set** and future action includes:
  - **No BMP design possible** since site constraints prevent a retrofit from being technically feasible (i.e. where MassDOT owns a bridge and no adjacent roadway); or
  - The assessment will move on to **design of BMPs** because further mitigation is required to meet the pollutant reduction target and MassDOT has identified potential locations for proposed BMPs. Following the selection of BMPs, MassDOT will include a summary of the final designs of proposed BMPs in future annual reports.

Assessments completed under BMP 7R during Permit Year 13 fall into various methodology and outcome categories as shown in Table 3. See Table 13 for more details on the individual assessments.

**Table 3Permit Year 13 Assessments Outcome Summary**

| Outcome Category | Outcome | # of Water Bodies Assessed |
|---|---|---|
| No target reduction set | Water body impaired for pathogens or impairments unrelated to stormwater | 40 |
| | Watershed less than 9% impervious | 4 |
| | No MassDOT discharges to segment | 36 |
| | Existing load below target | 1 |
| MassDOT pollutant load is negligible in groundwater watershed | | 5 |
| Target pollutant reduction set | Moving forward with BMP design | 5 |
| | Site constraints make BMP design infeasible | 5 |
| **Total** | | **96** |

Notes:

1. This table includes assessments where both the TMDL and IC Methods were used. In some cases, the TMDL may be for pathogens, so for these water bodies the IC Method was applied for setting a reduction target.
2. The five assessments moving forward with BMP design are identified in Table 13.

MassDOT committed to completing review of all 684 water bodies on Appendix L-1 within five years, starting in June 2010. The water body list included 209 water bodies included in a TMDL which MassDOT committed to review 20% each year. MassDOT met both of these commitments in full this year as shown in Table 4**Error! Reference source not found.**.

**Table 4 Assessments of Appendix L-1 Water Bodies**

| EPA Submittal | Permit Year 13 | Prior Permit Years | Total |
|---|---|---|---|
| # Waterbodies | 23 | 661 | **684** |
| % of Total Waterbodies | 3% | 97% | **100%** |
| # TMDL Waterbodies[1] | 0 | 209 | **209** |
| % of Total TMDL Waterbodies | 0% | 100% | **100%** |

[1] TMDL listing as included in Appendix L-1

### 2.1.2 Design

For assessments where moving forward with BMP design is suggested, MassDOT assigns the project to one of the six IWP designers under contract to MassDOT. The designer performs a more detailed review of the MassDOT urban area roads directly draining to the impaired receiving water to identify site constraints (soils, wetlands, utility conflicts, etc.) that may limit potential BMP locations, and requests survey and geotechnical information as needed. The designer develops the design of BMPs to meet the target impervious cover or pollutant load reduction to the maximum extent practicable, receives permits, and prepares construction plans for the retrofit project.

As part of the assessments completed this permit year, 5 assessments identified the need to move ahead with BMP designs. Currently, there are 63 projects in a variety of stages of design and 8 projects with

completed designs awaiting construction. Table 5 provides a summary of the design project status for the overall program and illustrates how many projects have moved through the design stages during this year.

**Table 5 Design Stage Summary**

| Design Stage | Permit Year 12 | Permit Year 13 |
|---|---|---|
| Pre-Design | 40 | 31 |
| Pre-25/75% | 21 | 16 |
| 25/75% | 14 | 12 |
| 100% | 11 | 4 |
| PS&E | 0 | 8 |
| Total | 86 | 71 |

Table 14 provides more details on the individual projects and their progress this year. Summary sheets in Attachment A highlight the projects that have reached final design and/or construction this year that have not previously been included in the annual report summary.

As part of the design of the BMPs, MassDOT consultants calculate the pollutant load that will be removed by the proposed BMPs and therefore will not reach the impaired waters. BMPs included in final designs this year are estimated to remove 108 acres of effective IC and 52 lbs/yr of phosphorus from the watersheds.

**Table 6 BMP Pollutant Removal Estimate Summary**

| Pollutant Type | Permit Year 13 | Overall Program |
|---|---|---|
| Effective IC (acres) | 108 | **473** |
| Phosphorus (lbs/yr) | 52 | **494** |

Table 16 provides a BMP pollutant removal summary of individual BMPs on projects which were constructed or reached 100% design this year. Projects completed in previous permit years have not been included for simplicity but are tracked in MassDOT's database.

### 2.1.3 Construction

Once the designs are completed, the projects are advertised and await construction. Table 7 summarizes the status of IWP construction projects this year in comparison to last permit year. Twenty-nine projects are currently under construction.

**Table 7 Construction Project Summary**

| Construction Stage | Permit Year 12 | Permit Year 13 |
|---|---|---|
| Construction On-going | 15 | 29 |
| Construction Complete | 10 | 5 |

Table 15 provides details on the projects currently being constructed. More than one Impaired Waters Program project may occur to address a water body for different reasons. Sometimes it's due to a resurfacing project that will cover a portion of the directly discharging area to the receiving water, and so

BMPs are included within the project limits of the resurfacing project. Other times it's due to the shape and length of the water body which may cross under MassDOT property at multiple locations so it may make sense geographically to have separate projects.

In order to showcase some of the many improvements that have progressed to construction or have been completed this year as part of the Impaired Waters Program, Attachment A includes detailed summary sheets including pictures, pollutant removal estimates, and costs for projects that have reached final design and/or construction this year and had not been highlighted in annual reports previously. The projects include:

1. Project No. 607174 — Rt. 60 at Unnamed Tributary
2. Project No. 607891 — Rt. 128 at Bass River
3. Project No. 607985 — I-495 at Shawsheen River
4. Project No. 607002.3 — Rt. 2, 2A at Nashua River
5. Project No. 606997.1 — Rt. 3 and I-93 Interchange at Town Brook
6. Project No. 606997.2 — Rt. 3, 53 at Mill River
7. Project No. 606997.3 — I-93 at Neponset River
8. Project No. 606282 — I-95 N. at Charles River
9. Project No. 607002.2 — Rt. 122 at Tatnuck Brook
10. Project No. 607002.1 — Rt. 146 at Mumford River
11. Project No. 607001.1 — Rt. 2 at Greenwood Pond
12. Project No. 607001.3 — I-91, Rt. 5 at Connecticut River
13. Project No. 607001.2 — Rt. 20 at Westfield River

To date, construction of thirty-one projects have been completed as part of the overall IWP.

Previously, BMPs had been constructed as part of federally funded district maintenance contracts or bundled into regional BMP construction contracts. These contracts allowed for the construction of the stand-alone stormwater BMPs (not affiliated with other road improvement activities). In Permit Year 13, MassDOT completed allocating construction tasks under the $9 million maintenance contract funding. Since then funding has been provided through the Federal Highway Administration (FHWA) transportation improvements program to fund stand-alone retrofit projects and programmed resurfacing projects coupled with the IWP. MassDOT advertised approximately $10.3 million in stormwater improvements in federal fiscal year (FFY) 2015 (October 1, 2014 to September 31, 2015). MassDOT plans to advertise $7.7 million in stormwater improvements by the end of FFY 2016 (October 1, 2015 to September 31, 2016).

**Table 8 Construction Project Funding Summary**

| | Funding ($M) | | | | |
|---|---|---|---|---|---|
| **Construction Stage** | **FY9-13** | **FY14** | **FY15** | **FY16** | **Total** |
| Maintenance Contracts | 9.0 | -- | -- | -- | **9.0** |
| Stormwater Improvement Construction Contracts | -- | 2.0 | 10.3 | 7.7 | **20.0** |

### 2.1.4 Other

In addition to structural BMPs, MassDOT has taken many steps to further strengthen the Impaired Water Program this year. MassDOT has continued to maintain and update the IWP geospatial database to track the many structural BMPs being designed and constructed by its design consultants and the status of water body assessments. MassDOT has expanded the capabilities of its BMP database to include recording BMP characteristics and include inspection and maintenance tracking. This past permit year MassDOT piloted

BMP inspection tracking and plans to more widely implement the inspections and maintenance scheduling and tracking in the upcoming year.

In addition, MassDOT has expanded the BMP database to include parameters necessary to better characterize the water quality performance of each BMP. MassDOT plans on implementing a consistent BMP accounting methodology based on EPA's methodology using these additional parameters to estimate water quality treatment. This methodology will be embedded into MassDOT's WQDF and also be a stand-alone tool for MassDOT designers to help select, size and calculate the treatment of their BMPs.

## 2.2 Planned Activities for Permit Year 14

MassDOT will continue to implement the Impaired Waters Program in Permit Year 14 to move the many projects identified with potential and need for BMPs through the design stages and develop bundled construction projects for advertisement. In addition to the BMPs constructed as part of the Retrofit Projects Initiative, MassDOT will further develop and populate the robust impaired waters database.

### 2.2.1 Assessments

Assessments are complete.

### 2.2.2 Design

MassDOT will continue to work with the six firms under contract to assist with design of stormwater BMPs. MassDOT will assign the five waterbodies that had not previously been assigned to a designer for development of design plans.

**Table 9 Design Project Schedule Summary**

| Construction Stage | Permit Year 13 | Permit Year 14 |
|---|---|---|
| Design | 71 | 37 |
| Construction | 34 | 68 |

### 2.2.3 Construction

MassDOT will advertise and construct BMPs as designs are completed. MassDOT plans to advertise $7.7 million in stormwater improvements by the end of FFY 2016 (October 1, 2015 to September 31, 2016). Funding will be provided through the Federal Highway Administration (FHWA) transportation improvements program. The $7.7 million will go toward stand-alone retrofit projects and programmed resurfacing projects coupled with the IWP.

**Table 10 IWP Construction Project Funding**

| Construction Funding Type | Funding ($M) | | | | | |
|---|---|---|---|---|---|---|
| | FY9-FY15 | FY16 | FY17 | FY18 | FY19 | Total |
| Maintenance Contracts | 9.0 | -- | -- | -- | -- | **9.0** |
| Stormwater Improvement Construction Contracts | 12.3 | 7.7 | 5.0 | 4.3 | 3.5 | **32.8** |
| Total | 21.2 | 7.7 | 5.0 | 4.3 | 3.5 | **41.8** |

# 3.0 Programmed Projects Initiative Stormwater BMPs

Projects included in the Statewide Transportation Improvement Plan (TIP) or otherwise included in MassDOT's program for construction provide an excellent opportunity to incorporate stormwater BMPs and provide significant water quality improvements. Unlike retrofit BMPs, these projects allow for holistic site planning, where drainage can be redirected and stormwater management can be included in the overall plan for the site. Also, programmed projects allow for the potential to increase the right-of-way and/or move conflicting utilities. Therefore, MassDOT has included stormwater BMPs in contracts for planned projects that discharge stormwater runoff to impaired waters including municipal projects undertaken by MassDOT for local municipalities and projects outside the permit (i.e., urbanized) area.

## 3.1 Overview of Progress in Permit Year 13

While many stormwater improvements were incorporated into programmed projects over the past year, a summary sheet was created to showcase Project No. 606394, the Barnstable Intersection Improvements, which had two permeable pavement sidewalks incorporated into the design. The summary sheet can be viewed in Attachment A.

MassDOT's Environmental Section identifies projects discharging to impaired waters through water quality data forms. MassDOT employees and consultants complete a water quality data form for regularly scheduled (programmed) projects at the 25% design phase, and then again at the 75% design phase. The form provides designers with general guidance for implementing BMPs given project type and receiving water body characteristics, gathers water quality and stormwater improvement data, and conducts data validation. The form solicits specific location information for each proposed BMP, which allows for simple integration in the IWP geospatial database. The accompanying web map application allows designers to quickly determine which impaired water body their project drains to and whether the project lies in a watershed with a TMDL.

The table below summarizes the information received from data forms this year about Programmed Projects.

**Table 11 Permit Year 13 Program Projects BMPs Summary**

| | 25% Design | 75% Design | Total |
|---|---|---|---|
| Data Forms Received | 87 | 41 | 128 |
| Impaired Receiving Waters Identified | 79 | - | |
| Receiving Waters with a final TMDL | 38 | - | |
| Stormwater BMPs Identified (Existing and Proposed) | - | 39 | |
| Deep sump catch basins identified | - | 701 | |

Additionally, sensitive site design elements for these projects were documented and included measures such as preserving existing vegetation, natural drainage patterns, and riparian buffers; minimizing disturbance to wetland resource areas; promoting sheet flow to vegetated areas; and reducing existing impervious cover.

### 3.2 Planned Activities for Permit Year 14

MassDOT will continue to include stormwater improvements to the maximum extent practicable within programmed projects, require designers to complete water quality forms on the projects and capture the stormwater control information in the IWP database.

## 4.0 Design Status of TMDL Watersheds

As discussed in the June 8th, 2015 submittal to EPA, the EPA enforcement required that "*all TMDL waters in urbanized areas to which MassDOT discharges must have been evaluated to determine if existing BMPs are sufficient and, if not, MassDOT must have identified additional controls that should be implemented.*" As of the June submittal, MassDOT had met this requirement for all but three Appendix L-1 TMDL waterbodies. However, BMPs to address these water bodies are currently under design and shown in the table below. MassDOT met all of the remaining EPA enforcement requirements.

**Table 12 Appendix L-1 TMDL Water Bodies with Design Potential Still to be Identified**

| Water Body ID | Water Body Name | June 8, 2015 Submittal | | Current | | |
|---|---|---|---|---|---|---|
| | | Design Status | Ad Date | Project Name | Design Status | Ad Date |
| MA73-30 | Gulliver Creek | Pre-proposal | 5/19 | I-93 | Pre-25/75% | 10/19 |
| MA82B-07 | Assabet River | Pre-proposal | 5/20 | Rt 2, 2A | Pre-25/75% | 10/16 |
| MA84A-03 | Merrimack River | Pre-proposal | 12/16 | Rt. 110, I-93,113 (Resurfacing Contract 607561) | 25% | 8/17 |
| MA82B-04* | Assabet River | Construction | -- | I-290 (Project 607181) | Construction | -- |

*This project was mistakenly included as being in the pre-proposal phase in the June 8, 2015 submittal. This project was in the construction phase at the time of the June 8, 2015 submittal and is currently still in construction.

## Table 13 Permit Year 13 Completed Impaired Water Bodies Assessments

| Waterbody ID | Waterbody Name | Waterbody Impairments (2012 Integrated List of Waters) | TMDL Identifier | TMDL Parameter | Assessment Type | Notes |
|---|---|---|---|---|---|---|
| MA35-01 | Millers River | Ambient Bioassays -- Chronic Aquatic Toxicity; Fecal Coliform; PCB in Fish Tissue; Phosphorus (Total) | | | IC Method | Site constraints: limited ROW and steep slopes prevent BMP construction. |
| MA41057 | Pistol Pond | Aquatic Plants (Macrophytes); Oxygen, Dissolved; Secchi disk transparency | | | IC Method | Moving forward with BMP design |
| MA70-02 | Boston Inner Harbor | Enterococcus; Fecal Coliform; Other; Oxygen, Dissolved; PCB in Fish Tissue | | Mercury | IC Method | Moving forward with BMP design |
| MA73-19 | Beaver Brook | Aquatic Macroinvertebrate Bioassessments; Oxygen, Dissolved | | | IC Method | Site constraints: steep roadway side slopes, lack of MassDOT ROW, and wetlands prevent BMP construction. |
| MA74-18 | Hingham Harbor | Fecal Coliform; Other; PCB in Fish Tissue | | | IC Method | Submitted in 2010 L-1 list as MA70-08. Site limitations: lack of MassDOT-owned right-of-way, adjacent public open space, wetlands, and the highly developed surrounding properties. Site constraints prevent BMP construction. |
| MA81046 | Fort Pond | Oxygen, Dissolved | | | IC Method | Moving forward with BMP design |
| MA93-54 | Salem Harbor | Estuarine bioassessments; Fecal Coliform | | | IC Method | This segment includes Salem Harbor (MA93-21) and Salem Sound (MA93-25) as of 2012 List. Assessment covers Salem Sound (MA93-25). Site constraints prevent BMP construction. |
| MA11002 | Cheshire Reservoir, North Basin | (Eurasian Water Milfoil, Myriophyllum spicatum*); (Non-Native Aquatic Plants*); Aquatic Plants (Macrophytes); Nutrient/Eutrophication Biological Indicators; Turbidity | | | Less than 9% Impervious | |
| MA81-21 | Nissitissit River | Lack of a coldwater assemblage | | Pathogens | Less than 9% Impervious | |
| MA11-03 | Hoosic River | (Alteration in stream-side or littoral vegetative covers*); (Other flow regime alterations*); (Physical substrate habitat alterations*); Ambient Bioassays -- Chronic Aquatic Toxicity; Fecal Coliform; Temperature, water | | | Less than 9% Impervious includes pathogen impairment | |
| MA81-18 | Squannacook River | Escherichia coli; Lack of a coldwater assemblage; pH, Low; Temperature, water | | | Less than 9% Impervious includes pathogen impairment | |

## Table 13 Permit Year 13 Completed Impaired Water Bodies Assessments

| Waterbody ID | Waterbody Name | Waterbody Impairments (2012 Integrated List of Waters) | TMDL Identifier | TMDL Parameter | Assessment Type | Notes |
|---|---|---|---|---|---|---|
| MA36129 | Quabbin Reservoir | (Non-Native Aquatic Plants*); Mercury in Fish Tissue [376.0] | 376.0 | Mercury | All Impairments Unrelated to Stormwater | |
| MA41014 | East Brimfield Reservoir | (Non-Native Aquatic Plants*); Mercury in Fish Tissue [376.0] | 376.0 | Mercury | All Impairments Unrelated to Stormwater | |
| MA73043 | Ponkapoag Pond | (Eurasian Water Milfoil, Myriophyllum spicatum*); (Non-Native Aquatic Plants*); Mercury in Fish Tissue [377.0] | 377.0 | | All Impairments Unrelated to Stormwater | |
| MA73048 | Reservoir Pond | (Non-Native Aquatic Plants*); Mercury in Fish Tissue [377.0] | 377.0 | Mercury | All Impairments Unrelated to Stormwater | |
| MA82110 | Warners Pond | (Non-Native Aquatic Plants*); Mercury in Fish Tissue [376.0] | 376.0 | Pathogens | All Impairments Unrelated to Stormwater | |
| MA93014 | Chebacco Lake | (Non-Native Aquatic Plants*); Mercury in Fish Tissue [376.0] | 376.0 | | All Impairments Unrelated to Stormwater | |
| MA94178 | Aaron River Reservoir | (Fish-Passage Barrier*); Mercury in Fish Tissue [376.0] | 376.0 | Mercury | All Impairments Unrelated to Stormwater | |
| MA96012 | Bearse Pond | (Non-Native Aquatic Plants*); Mercury in Fish Tissue [377.0] | 377.0 | | All Impairments Unrelated to Stormwater | |
| MA96333 | Wequaquet Lake | (Non-Native Aquatic Plants*); Mercury in Fish Tissue [376.0] | 376.0 | | All Impairments Unrelated to Stormwater | |
| MA32055 | Pequot Pond | (Eurasian Water Milfoil, Myriophyllum spicatum*); (Non-Native Aquatic Plants*); Oxygen, Dissolved; Phosphorus (Total) | | | No Discharge | |
| MA35008 | Bourn-Hadley Pond | Aquatic Plants (Macrophytes) [123.2] | 123.2 | Phosphorus | No Discharge | |
| MA35083 | Stoddard Pond | Aquatic Plants (Macrophytes) [123.2] | 123.2 | Phosphorus | No Discharge | |
| MA36-06 | Ware River | Fecal Coliform | | | No Discharge | |
| MA36-22 | Chicopee River | Escherichia coli; Mercury in Fish Tissue | | | No Discharge | |
| MA41001 | Alum Pond | Oxygen, Dissolved | | | No Discharge | |
| MA42019 | Granite Reservoir | (Non-Native Aquatic Plants*); Aquatic Plants (Macrophytes) [110.0] | 110.0 | | No Discharge | |

## Table 13 Permit Year 13 Completed Impaired Water Bodies Assessments

| Waterbody ID | Waterbody Name | Waterbody Impairments (2012 Integrated List of Waters) | TMDL Identifier | TMDL Parameter | Assessment Type | Notes |
|---|---|---|---|---|---|---|
| MA42-07 | Burncoat Brook | Aquatic Macroinvertebrate Bioassessments; Escherichia coli | | | No Discharge | |
| MA42-15 | Sucker Brook | Aquatic Macroinvertebrate Bioassessments; Escherichia coli | | | No Discharge | |
| MA42-18 | Grindstone Brook | Escherichia coli | | Pathogens | No Discharge | |
| MA51047 | Fish Pond | (Non-Native Aquatic Plants*); Aquatic Plants (Macrophytes) | | Pathogens | No Discharge | |
| MA52006 | Central Pond | Aquatic Plants (Macrophytes); Dissolved oxygen saturation; Excess Algal Growth; Organic Enrichment (Sewage) Biological Indicators; Oxygen, Dissolved; Phosphorus (Total) | | Pathogens | No Discharge | |
| MA52022 | James V. Turner Reservoir | Aquatic Plants (Macrophytes); Dissolved oxygen saturation; Excess Algal Growth; Organic Enrichment (Sewage) Biological Indicators; Phosphorus (Total) | 182.0 | | No Discharge | |
| MA70-05 | Quincy Bay | Enterococcus; Fecal Coliform; Other; PCB in Fish Tissue | | Mercury | No Discharge | |
| MA71-13 | Unnamed Tributary | Escherichia coli | | | No Discharge | |
| MA73012 | Memorial Pond | Aquatic Plants (Macrophytes); Turbidity | | | No Discharge | |
| MA81008 | Bartlett Pond | Escherichia coli | | | No Discharge | |
| MA81-61 | Unnamed Tributary | Escherichia coli | | | No Discharge | |
| MA92-22 | Labor In Vain Creek | Fecal Coliform; Oxygen, Dissolved | | | No Discharge | |
| MA93-56 | Salem Sound | Fecal Coliform | | | No Discharge | Previously part of Salem Sound (MA93-25). Assessment covers Salem Sound (MA93-25). |
| MA94007 | Billington Sea | Excess Algal Growth; Turbidity | | Pathogens | No Discharge | |
| MA94032 | Crossman Pond | Aquatic Plants (Macrophytes) | | | No Discharge | |
| MA94038 | Foundry Pond | Turbidity | | | No Discharge | |
| MA94-10 | Green Harbor River | (Fish-Passage Barrier*); (Other flow regime alterations*); Excess Algal Growth; Turbidity | | Pathogens | No Discharge | |
| MA94-12 | Jones River | (Fish-Passage Barrier*); (Low flow alterations*); Aquatic Plants (Macrophytes); Excess Algal Growth; Oxygen, Dissolved; Turbidity | | | No Discharge | |
| MA94-13 | Jones River | (Low flow alterations*); Aquatic Plants (Macrophytes); Excess Algal Growth; Oxygen, Dissolved; Turbidity | | | No Discharge | |
| MA94132 | Russell Millpond | (Fish-Passage Barrier*); Excess Algal Growth | | | No Discharge | |

## Table 13 Permit Year 13 Completed Impaired Water Bodies Assessments

| Waterbody ID | Waterbody Name | Waterbody Impairments (2012 Integrated List of Waters) | TMDL Identifier | TMDL Parameter | Assessment Type | Notes |
|---|---|---|---|---|---|---|
| MA95033 | Crane Brook Bog Pond | (Non-Native Aquatic Plants*); Excess Algal Growth; Phosphorus (Total) | | | No Discharge | |
| MA95-06 | Sippican River | (Fish-Passage Barrier*); Chlorophyll-a; Oxygen, Dissolved | | | No Discharge | |
| MA95146 | Tihonet Pond | Oxygen, Dissolved | | | No Discharge | |
| MA95-41 | East Branch Westport River | Estuarine Bioassessments; Fecal Coliform [251.1]; Nitrogen (Total) | 251.1 | | No Discharge | |
| MA96115 | Great Pond | Chlorophyll-a; Oxygen, Dissolved; Phosphorus (Total) | | | No Discharge | |
| MA96183 | Long Pond | Oxygen, Dissolved | | | No Discharge | |
| MA96288 | Shawme Lake Lower | Nutrient/Eutrophication Biological Indicators | | | No Discharge | |
| MA96326 | Upper Shawme Lake | Nutrient/Eutrophication Biological Indicators | | | No Discharge | |
| MA11-04 | Hoosic River | (Alteration in stream-side or littoral vegetative covers*); (Other flow regime alterations*); Fecal Coliform | | | Pathogens Only | |
| MA32-08 | Little River | Escherichia coli; Fecal Coliform | | | Pathogens Only | |
| MA32-22 | Potash Brook | Escherichia coli | | | Pathogens Only | |
| MA34-25 | Mill River | Escherichia coli | | | Pathogens Only | |
| MA34-42 | Buttery Brook | Escherichia coli | | | Pathogens Only | |
| MA36-39 | Unnamed tributary | Escherichia coli | | | Pathogens Only | |
| MA36-41 | Fuller Brook | Escherichia coli | | | Pathogens Only | |
| MA41-13 | McKinstry Brook | (Debris/Floatables/Trash*); Escherichia coli | | Phosphorus | Pathogens Only | |
| MA53-17 | Torrey Creek | Fecal Coliform [182.0] | 182.0 | | Pathogens Only | |
| MA53-18 | Rocky Run | Fecal Coliform [182.0] | 256.0 | | Pathogens Only | |
| MA62-09 | Beaver Brook | Fecal Coliform [256.0] | | | Pathogens Only | |
| MA73-25 | Pecunit Brook | Escherichia coli | | | Pathogens Only | |
| MA81-13 | Monoosnuc Brook | Escherichia coli | | | Pathogens Only | |
| MA81-20 | James Brook | Escherichia coli | | Mercury | Pathogens Only | |
| MA84A-12 | Richardson Brook | Escherichia coli | | Pathogens | Pathogens Only | |
| MA84A-13 | Trout Brook | Escherichia coli | | Pathogens | Pathogens Only | |
| MA84A-14 | Trull Brook | Escherichia coli | | Pathogens | Pathogens Only | |
| MA84A-36 | Bartlett Brook | Escherichia coli | | Pathogens | Pathogens Only | |
| MA84A-37 | Creek Brook | Escherichia coli | | | Pathogens Only | |
| MA84A-39 | East Meadow River | Escherichia coli | | | Pathogens Only | |

## Table 13 Permit Year 13 Completed Impaired Water Bodies Assessments

| Waterbody ID | Waterbody Name | Waterbody Impairments (2012 Integrated List of Waters) | TMDL Identifier | TMDL Parameter | Assessment Type | Notes |
|---|---|---|---|---|---|---|
| MA84B-06 | Bennetts Brook | Escherichia coli | | | Pathogens Only | |
| MA84B-07 | Tadmuck Brook | Escherichia coli | | | Pathogens Only | |
| MA93-02 | Crane Brook | Fecal Coliform | | Mercury | Pathogens Only | |
| MA93-47 | Causeway Brook | Fecal Coliform | | | Pathogens Only | |
| MA93-55 | Salem Sound | Fecal Coliform | | | Pathogens Only | Previously part of Salem Sound (MA93-25). Assessment covers Salem Sound (MA93-25). |
| MA93-57 | Rockport Harbor | Fecal Coliform | | Pathogens | Pathogens Only | |
| MA94-01 | Cohasset Harbor | Fecal Coliform | | Mercury | Pathogens Only | |
| MA94-32 | Cohasset Cove | Fecal Coliform | | | Pathogens Only | |
| MA95-44 | Snell Creek | Fecal Coliform [251.1] | 251.1 | | Pathogens Only | |
| MA95-45 | Snell Creek | Fecal Coliform [251.1] | 251.1 | | Pathogens Only | |
| MA95-59 | Snell Creek | Fecal Coliform [251.1] | 251.1 | | Pathogens Only | |
| MA94-16 | Plymouth Harbor | Fecal Coliform; Nutrient/Eutrophication Biological Indicators | | Pathogens | Groundwater | Existing BMPs; MassDOT's nitrogen load is negligible; less than 3.5% (1.5%) |
| MA96-01 | Barnstable Harbor | Estuarine Bioassessments; Fecal Coliform [252.0] | 252.0 | | Groundwater | MassDOT's nitrogen load is negligible; less than 3.5% (1.9%) |
| MA96-15 | Boat Meadow River | Estuarine Bioassessments; Fecal Coliform [252.0] | 252.0 | | Groundwater | MassDOT's nitrogen load is negligible; less than 3.5% (0.2%). |
| MA96-33 | Herring River | (Fish-Passage Barrier*); (Other flow regime alterations*); Aluminum; Estuarine Bioassessments; Fecal Coliform [252.0]; pH, Low | 252.0 | | Groundwater | MassDOT's nitrogen load is negligible; less than 3.5% (0.2%). |
| MA96-88 | Cedar Pond | Chlorophyll-a; Dissolved oxygen saturation; Oxygen, Dissolved | | | Groundwater | MassDOT's nitrogen load is negligible; less than 3.5% (1.0%) |
| MA95115 | Parker Mills Pond | (Non-Native Aquatic Plants*); Phosphorus (Total) | | | Groundwater with Phosphorus Impairment | No target required but moving forward with BMP design. |
| MA96050 | Crystal Lake | Oxygen, Dissolved | | | Groundwater with Phosphorus Impairment | No target required but moving forward with BMP design. |
| MA35017 | Lake Denison | Mercury in Fish Tissue [376.0]; Oxygen, Dissolved [123.2] | 123.2 | Mercury, Phosphorus | TMDL Method | Load below target - no BMPs required. |

Notes: Assessments are based on the impairments listed in the final Year 2012 303d list. For full Impaired Waters submittals, refer to http://www.massdot.state.ma.us/highway/Departments/EnvironmentalServices/StormwaterManagementUnit/NationalPollutantDischargeEliminationSystem/ImpairedWatersProgram.aspx

## Table 14 Retrofit Project in Design Status

| Water Body ID | Water Body Name | Project Name | Project Type | District | Year 13 % Design Complete | Estimated Ad Date | Year 12 % Design Complete |
|---|---|---|---|---|---|---|---|
| MA82B-14 | Nashoba Brook | I-495 at Nashoba Brook | Resurfacing | 3 | Pre-Design | 10/1/16 | Pre-Design |
| MA93-39 | Proctor Brook | Rt. 128 at Proctor Brook | Retrofit | 4 | Pre-Design | 10/1/16 | Pre-Design |
| MA82B-07 | Assabet River | Rt. 2, 2A at Assabet River | Retrofit | 4 | Pre-Design | 10/1/16 | Pre-Design |
| MA82A-07 | Concord River | Rt. 3 at Concord River | Retrofit | 4 | Pre-Design | 10/1/16 | Pre-Design |
| MA83-17 | Shawsheen River | Rt. 3, 3A at Shawsheen River | Retrofit | 4 | Pre-Design | 10/1/16 | Pre-Design |
| MA95115 | Parker Mills Pond | Wareham Rochester Milleboro Interstate Maintenance | Resurfacing | 5 | Pre-Design | 11/4/16 | Pre-Design |
| MA96-14 | Swan Pond River | Dennis Harwich Brewster Orleans Resurfacing | Resurfacing | 5 | Pre-Design | 11/26/16 | Pre-Design |
| MA96-51 | Muddy Creek | Dennis Harwich Brewster Orleans Resurfacing | Resurfacing | 5 | Pre-Design | 11/26/16 | Pre-Design |
| MA96-70 | Areys Pond | Dennis Harwich Brewster Orleans Resurfacing | Resurfacing | 5 | Pre-Design | 11/26/16 | Pre-Design |
| MA96-77 | Pleasant Bay | Dennis Harwich Brewster Orleans Resurfacing | Resurfacing | 5 | Pre-Design | 11/26/16 | Pre-Design |
| MA96-88 | Cedar Pond | Dennis Harwich Brewster Orleans Resurfacing | Resurfacing | 5 | Pre-Design | 11/26/16 | Pre-Design |
| MA41057 | Pistol Pond | I-84, I-90, And Route 20 at Pistol Pond | Retrofit | 3 | Pre-Design | 10/1/17 | In Assessment |
| MA82A-26 | Sudbury River | Route 9 at Sudbury River | Retrofit | 4 | Pre-Design | 10/1/17 | Pre-Design |
| MA81-02 | North Nashua River | Rt. 2 at North Nashua River | Retrofit | 3 | Pre-Design | 10/1/17 | Pre-Design |
| MA82A-16 | Unnamed Tributary | Rt. 20 at Hager Road | Retrofit | 3 | Pre-Design | 10/1/17 | Pre-Design |
| MA83-04 | Rogers Brook | Rt. 28 at Rogers | Retrofit | 4 | Pre-Design | 10/1/17 | Pre-Design |
| MA81053 | Grove Pond | Rt. 2A, 110, 111 at Grove Pond | Retrofit | 3 | Pre-Design | 10/1/17 | Pre-Design |
| MA82A-08 | Concord River | Rt. 3A, I-495 at Concord River | Retrofit | 4 | Pre-Design | 10/1/17 | Pre-Design |
| MA82125 | Lake Cochituate | Rt. 9 at Lake Cochituate Middle Basin | Resurfacing | 3 | Pre-Design | 10/1/17 | Pre-Design |
| MA82127 | Lake Cochituate | Rt. 9 at Lake Cochituate South Basin | Retrofit | 3 | Pre-Design | 10/1/17 | Pre-Design |
| MA61-06 | Mount Hope Bay | I-195 at Mount Hope Bay | Retrofit | 5 | Pre-Design | 10/1/18 | Pre-Design |
| MA62-04 | Taunton River | I-195, Rt. 79, 24, 103, 138 at Taunton River | Retrofit | 5 | Pre-Design | 10/1/18 | Pre-Design |
| MA73-30 | Gulliver Creek | I-93 at Gulliver Creek | Retrofit | 6 | Pre-Design | 10/1/18 | Pre-Design |
| MA73-26 | Unquity Brook | I-93, Randolf Ave at Unquity Brook | Retrofit | 6 | Pre-Design | 10/1/18 | Pre-Design |
| MA73-01 | Neponset River | I-95 at Neponset River | Retrofit | 5 | Pre-Design | 10/1/18 | Pre-Design |
| MA71043 | Upper Mystic Lake | Rt. 3 at Upper Mystic Lake | Retrofit | 4 | Pre-Design | 10/1/18 | Pre-Design |
| MA95-67 | Nasketucket River | Rt. 6, 240 at Nasketucket River | Retrofit | 5 | Pre-Design | 10/1/18 | Pre-Design |
| MA70-02 | Boston Inner Harbor | Boston Inner Harbor | Retrofit | 6 | Pre-Design | TBD | In Assessment |
| MA92-06 | Ipswich River | I-95/I-93 at Ipswich River | Retrofit | 4 | Pre-Design | TBD | Pre-Design |

## Table 14 Retrofit Project in Design Status

| Water Body ID | Water Body Name | Project Name | Project Type | District | Year 13 % Design Complete | Estimated Ad Date | Year 12 % Design Complete |
|---|---|---|---|---|---|---|---|
| MA73-33 | Unnamed Tributary | Rt. 1 at Unnamed Tributary | Retrofit | 5 | Pre-Design | TBD | Pre-Design |
| MA96050 | Crystal Lake | Rt. 28 at Crystal Lake | Retrofit | 5 | Pre-Design | TBD | In Assessment |
| MA83-18 | Shawsheen River | I-93 at Shawsheen River | Retrofit | 4 | Pre-25/75% | 10/1/16 | Pre-Design |
| MA84A-17 | Black Brook | Rt. 3/3A at Black Brook | Retrofit | 4 | Pre-25/75% | 10/1/16 | Pre-25/75% |
| MA95115 | Parker Mills Pond | Rt. 3 and Rt. 28 at Parker Mills Pond | Resurfacing | 5 | Pre-25/75% | 12/1/16 | In Assessment |
| MA82A-22 | Unnamed Tributary | I-90 at Cochituate Brook | Resurfacing | 3 | Pre-25/75% | 4/15/17 | Pre-Design |
| MA82125 | Lake Cochituate | I-90 at Lake Cochituate Middle Basin | Resurfacing | 3 | Pre-25/75% | 4/15/17 | Pre-Design |
| MA82020 | Lake Cochituate | I-90 at Lake Cochitutate North Basin | Resurfacing | 3 | Pre-25/75% | 4/15/17 | Pre-Design |
| MA82097 | Saxonville Pond | I-90 at Saxonville Pond | Retrofit | 3 | Pre-25/75% | 4/15/17 | Pre-Design |
| MA82A-26 | Sudbury River | I-90 at Sudbury River | Resurfacing | 3 | Pre-25/75% | 4/15/17 | Pre-Design |
| MA51-02 | Middle River | I-290, Rt. 146 at Middle River | Retrofit | 3 | Pre-25/75% | 10/1/17 | Pre-25/75% |
| MA81046 | Fort Pond | Rt. 2 and Rt. 70 at Fort Pond | Retrofit | 3 | Pre-25/75% | 10/1/17 | Pre-25/75% |
| MA82055 | Grist Mill Pond | Rt. 20 at Grist Mill Pond | Retrofit | 3 | Pre-25/75% | 10/1/17 | Pre-Design |
| MA34-05 | Connecticut River | Chicopee Holyoke Interstate Maintenance | Resurfacing | 2 | Pre-25/75% | 11/4/17 | Pre-25/75% |
| MA72-28 | Beaver Brook | Rt. 2 at Beaver Brook | Retrofit | 4 | Pre-25/75% | 10/1/18 | Pre-25/75% |
| MA51-08 | Unnamed Tributary | I-290, I-90, Rt. 146, Rt. 12 at Unnamed Tributary | Retrofit | 3 | Pre-25/75% | TBD | Pre-25/75% |
| MA42-03 | French River | I-90 at French River | Retrofit | 3 | Pre-25/75% | TBD | Pre-25/75% |
| MA51073 | Indian Lake | Rte 122A at Indian Lake | Retrofit | 3 | Pre-25/75% | TBD | Pre-25/75% |
| MA84A-03 | Merrimack River | Rt. 110, I-93, and 113 at Merrimack River | Resurfacing | 4 | 25% | 10/1/16 | Pre-Design |
| MA93-42 | North River | Rt. 107 at North River | Retrofit | 4 | 25%/75% | 1/1/16 | Pre-25/75% |
| MA51105 | Mill Pond | Shrewsbury/Boylston/Northborough Maintenance | Resurfacing | 3 | 25%/75% | 6/4/16 | Pre-25/75% |
| MA51125 | Lake Quinsigamond | Shrewsbury/Boylston/Northborough Maintenance | Resurfacing | 3 | 25%/75% | 6/4/16 | Pre-25/75% |
| MA51196 | Shirley Street Pond | Shrewsbury/Boylston/Northborough Maintenance | Resurfacing | 3 | 25%/75% | 6/4/16 | Pre-25/75% |
| MA82B-03 | Assabet River | Shrewsbury/Boylston/Northborough Maintenance | Resurfacing | 3 | 25%/75% | 6/4/16 | Pre-25/75% |
| MA51-10 | Mill River | Rt. 140 at Mill River | Retrofit | 3 | 25%/75% | 7/30/16 | Pre-25/75% |
| MA51-05 | Blackstone River | Rt. 146, Rt. 122 at Blackstone River | Retrofit | 3 | 25%/75% | 7/30/16 | Pre-25/75% |
| MA62-06 | Salisbury Plain River | Rt. 28 at Salisbury Plain River | Retrofit | 5 | 25%/75% | 8/1/16 | Pre-25/75% |
| MA53-01 | Runnins River | I-195, Rt. 44 at Runnins River | Resurfacing | 5 | 25%/75% | 8/11/18 | Pre-25/75% |
| MA41-05 | Cady Brook | I-90 at Cady Brook | Retrofit | 3 | 25%/75% | TBD | 25/75% |

## Table 14 Retrofit Project in Design Status

| Water Body ID | Water Body Name | Project Name | Project Type | District | Year 13 % Design Complete | Estimated Ad Date | Year 12 % Design Complete |
|---|---|---|---|---|---|---|---|
| MA51135 | Lake Ripple | Rt. 140 at Lake Ripple | Retrofit | 3 | 25%/75% | TBD | 25/75% |
| MA94-16 | Plymouth Harbor | Plymouth Resurfacing work | Resurfacing | 5 | 100% | 5/7/16 | Pre-Design |
| MA41-02 | Quinebaug River | I-84 at Quinebaug River | Resurfacing | 3 | 100% | 5/21/16 | 25/75% |
| MA82B-02 | Assabet River | Rt. 9 at Assabet River | Retrofit | 3 | 100% | 6/4/16 | Pre-25/75% |
| MA34-05 | Connecticut River | I-91, I-90 at Connecticut River (Subbasins A & B) | Retrofit | 2 | 100% | 10/1/16 | Pre-25/75% |
| MA51039 | Dorothy Pond | I-90 at Dorothy Pond | Retrofit | 3 | PS&E | 3/12/16 | 25/75% |
| MA84A-10 | Spicket River | Andover-Methuen Interstate Maintenance | Resurfacing | 3 | PS&E | 3/19/16 | Pre-Design |
| MA72092 | Lake Pearl | Foxborough Plainville Wrenthem Maintenance | Resurfacing | 5 | PS&E | 3/19/16 | Pre-25/75% |
| MA72-14 | Mine Brook | I-495 at Mine Brook, Phase II | Resurfacing | 3 | PS&E | 3/19/16 | Pre-25/75% |
| MA62-47 | Wading River | I-495 at Wading River | Resurfacing | 5 | PS&E | 3/19/16 | Pre-25/75% |
| MA95-42 | New Bedford Inner Harbor | Rt. 6, 18 at New Bedford Inner Harbor | Retrofit | 5 | PS&E | 4/23/16 | Pre-25/75% |
| MA84A-18 | Bare Meadow Brook | I-495 at Bare Meadow Brook | Resurfacing | 4 | PS&E | 6/25/16 | 25/75% |
| MA84A-10 | Spicket River | I-93 at Spicket River | Resurfacing | 4 | PS&E | 6/25/16 | 25/75% |

## Table 15 Retrofit/ Resurfacing Projects under Construction Status

| Water Body ID | Water Body Name | Project Name | Project Type | District | Year 13 Construction Status | Estimated Construction Start Date | Estimated Construction End Date | Year 12 Status |
|---|---|---|---|---|---|---|---|---|
| MA96-36 | Lewis Bay | Barnstable Intersection Improvements | Intersection | 5 | In Construction | TBD | TBD | -- |
| MA51-08 | Unnamed Tributary | I-190 at Indian Lake | Resurfacing | 3 | In Construction | Summer 2016 | TBD | In Construction |
| MA61-02 | Lee River | I-195 at Lee River | Retrofit | 5 | In Construction | TBD | TBD | 100% |
| MA95-42 | New Bedford Inner Harbor | I-195 at New Bedford Inner Harbor | Retrofit | 5 | In Construction | TBD | TBD | 100% |
| MA82B-04 | Assabet River | I-290 at Assabet River | Resurfacing | 3 | In Construction | Summer 2015 | 9/1/2018 | In Construction |
| MA84A-04 | Merrimack River | I-495 and Merrimack River | Resurfacing | 4 | In Construction | Spring 2015 | Spring 2017 | In Construction |
| MA62-39 | Rumford River | I-495 at Rumford River | Retrofit | 5 | In Construction | TBD | TBD | 100% |
| MA83-19 | Shawsheen River | I-495 at Shawsheen River | Resurfacing | 4 | In Construction | Spring 2015 | Spring 2017 | In Construction |
| MA72-36 | Charles River | I-90 at Charles River | Retrofit | 6 | In Construction | Spring 2015 | Fall 2016 | In Construction |
| MA72-29 | Cheese Cake Brook | I-90 at Cheese Cake Brook | Retrofit | 6 | In Construction | Spring 2015 | Fall 2016 | In Construction |
| MA72-07 | Charles River | I-90, I-95 Tolls | Retrofit | 6 | In Construction | Spring 2015 | Fall 2016 | In Construction |
| MA34-05 | Connecticut River | I-91, Rt. 5 at Connecticut River (Subbasins C & D) | Retrofit | 2 | In Construction | Fall 2015 | TBD | 100% |
| MA71-02 | Mystic River | I-93 at Mystic River | Retrofit | 4 | In Construction | 4/13/2016 | 11/14/2017 | 100% |
| MA73-04 | Neponset River | I-93 at Neponset River | Retrofit | 6 | In Construction | 11/18/2015 | 3/27/2017 | 100% |
| MA93-37 | Beaver Brook | I-95 at Beaver Brook | Retrofit | 4 | In Construction | 4/13/2016 | 11/14/2017 | 25/75% |
| MA34-19 | Stony Brook | Rt. 116 at Stony Brook | Retrofit | 2 | In Construction | TBD | TBD | 100% |
| MA51-15 | Tatnuck Brook | Rt. 122 at Tatnuck Brook | Retrofit | 3 | In Construction | 1/15/2016 | 7/8/2017 | 25/75% |
| MA93-07 | Bass River | Rt. 128 at Bass River | Resurfacing | 4 | In Construction | Spring 2015 | Spring 2017 | In Construction |
| MA51093 | Marble Pond | Rt. 146 at Marble Pond | Retrofit | 3 | In Construction | 1/15/2016 | 7/8/2017 | 25/75% |
| MA51-14 | Mumford River | Rt. 146 at Mumford River | Retrofit | 3 | In Construction | 1/15/2016 | 7/8/2017 | 25/75% |
| MA35026 | Greenwood Pond | Rt. 2 at Greenwood Pond | Retrofit | 2 | In Construction | Spring 2016 | Summer 2016 | 100% |
| MA81-05 | Nashua River | Rt. 2, 2A at Nashua River | Retrofit | 3 | In Construction | 1/28/2016 | 7/6/2017 | 25/75% |
| MA32-05 | Westfield River | Rt. 20 at Westfield River | Retrofit | 2 | In Construction | March 2016 | Summer 2016 | 100% |
| MA74-09 | Town Brook | Rt. 3 and I-93 Interchange at Town Brook | Retrofit | 6 | In Construction | Spring 2016 | Winter 2016 | 100% |
| MA74-08 | Monatiquot River | Rt. 3 at Monatiquot River | Resurfacing | 6 | In Construction | Summer 2014 | Summer 2016 | In Construction |
| MA74-04 | Mill River | Rt. 3, 53 at Mill River | Retrofit | 6 | In Construction | 11/18/2015 | 3/27/2017 | 100% |

## Table 15 Retrofit/ Resurfacing Projects under Construction Status

| Water Body ID | Water Body Name | Project Name | Project Type | District | Year 13 Construction Status | Estimated Construction Start Date | Estimated Construction End Date | Year 12 Status |
|---|---|---|---|---|---|---|---|---|
| MA93-51 | Unnamed Tributary | Rt. 60 at Unnamed Tributary | Resurfacing | 4 | In Construction | Fall 2015 | 5/28/2018 | In Construction |
| MA35056 | Parker Pond | Rt. 68 at Parker Pond | Retrofit | 3 | In Construction | TBD | TBD | 25/75% |
| MA51-17 | Poor Farm Brook | Rt. 70 at Poor Farm Brook | Retrofit | 3 | In Construction | TBD | TBD | 25/75% |
| MA61-04 | Cole River | I-195 at Cole River | Bridge | 5 | Constructed | Winter 2013/2014 | 11/30/2015 | In Construction |
| MA62-14 | Robinson Brook | I-95 to Robinson Brook | Resurfacing | 5 | Constructed | Spring 2013 | 6/25/2015 | In Construction |
| MA62-39 | Rumford River | I-495 to Rumford River | Resurfacing | 5 | Constructed | Winter 2012/2013 | Summer 2015 | In Construction |
| MA72-07 | Charles River | I-95 N. at Charles River | Retrofit | 6 | Constructed | Fall 2014 | Fall 2015 | In Construction |
| MA71-04 | Alewife Brook | Rt. 2 at Alewife Brook | Intersection | 4 | Constructed | Winter 2014/2015 | Spring 2016 | In Construction |

## Table 16 Summary of Retrofit BMPs under Construction or Constructed

| Waterbody ID | Waterbody Name | Direct IC WS (acres) | Target IC Red. (acres) | Target P Red. (lbs/yr) |
|---|---|---|---|---|
| MA83-19 | Shawsheen River | 58.3 | 39.3 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Swale | 0.1 | 0.1 | N/A |
| | Infiltration Basin | 0.7 | 0.7 | N/A |
| | Infiltration Basin | 0.8 | 0.8 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 3 | 1.7 | 1.7 | N/A |
| | Remaining Red. to Meet Target: | | 37.7 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA84A-04 | Merrimack River | 59.7 | 42.3 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Extended Detention Basin | 2.7 | - | N/A |
| | Extended Detention Basin | 2.4 | - | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 3 | 5.1 | 0.0 | N/A |
| | Remaining Red. to Meet Target: | | 42.3 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA93-07 | Bass River | 6.7 | 5 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Swale | - | - | N/A |
| | Infiltration Basin | 1.1 | 1.1 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 1 | 1.1 | 1.1 | N/A |
| | Remaining Red. to Meet Target: | | 3.9 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA51-08 | Unnamed Tributary | 124 | 102 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Basin | 1.2 | 0.6 | N/A |
| | Infiltration Basin | 0.6 | 0.6 | N/A |
| | Infiltration Basin | 1.1 | 1.1 | N/A |
| | Infiltration Swale | 0.8 | 0.7 | N/A |
| | Infiltration Swale | 0.6 | 0.6 | N/A |
| | Infiltration Swale | 0.6 | 0.6 | N/A |
| | Infiltration Basin | 2.6 | 2.6 | N/A |

| | BMP Type | BMP IC WS (acres) | IC Reduction (acres) | P Reduction (lbs/yr) |
|---|---|---|---|---|
| | Infiltration Swale | 1.7 | 1.0 | N/A |
| | Infiltration Swale | 1.8 | 1.7 | N/A |
| | Infiltration Swale | 0.4 | 0.4 | N/A |
| | Infiltration Basin | 2.6 | 2.6 | N/A |
| | Infiltration Swale | 0.8 | 0.6 | N/A |
| | Infiltration Basin | 0.4 | 0.4 | N/A |
| | Infiltration Basin | 0.1 | 0.1 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 14 | 15.3 | 13.6 | N/A |
| | Remaining Red. to Meet Target: | | 88.4 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA82B-04 | Assabet River | 18.0 | 10.0 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Wet Pond/Swale | 0.6 | 0.4 | N/A |
| | Wet Pond/Swale | 0.7 | 0.3 | N/A |
| | Vegetated Filter Strip | 0.5 | 0.4 | N/A |
| | Vegetated Filter Strip | 0.9 | 0.7 | N/A |
| | Infiltration Swale | 2.5 | 2.3 | N/A |
| | Infiltration Swale | 5.2 | 4.7 | N/A |
| | Infiltration Swale | 1.5 | 1.4 | N/A |
| | Infiltration Swale | 0.9 | 0.8 | N/A |
| | Infiltration Basin | 0.3 | 0.3 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 13 | 13.1 | 11.3 | N/A |
| | Remaining Red. to Meet Target: | | 0.0 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA93-51 | Unnamed Tributary | 2.1 | 1.7 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Basin | 1.06 | 1.0 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 1 | 1.1 | 1.0 | N/A |
| | Remaining Red. to Meet Target: | | 0.7 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA62-39 | Rumford River | 20.2 | 9.0 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Basin | 0.2 | 0.2 | N/A |

| BMP Type | BMP IC WS (acres) | IC Reduction (acres) | P Reduction (lbs/yr) |
|---|---|---|---|
| Infiltration Swale | 0.8 | 0.8 | N/A |
| Infiltration Swale | 0.4 | 0.3 | N/A |
| Infiltration Swale | 0.4 | 0.4 | N/A |
| Infiltration Basin | 2.9 | 2.8 | N/A |
| Infiltration Basin | 1.6 | 1.4 | N/A |
| Infiltration Basin | 1.3 | 1.2 | N/A |
| Infiltration Basin | 0.2 | 0.2 | N/A |

| Total No. of BMPs | Total IC Area to BMP(s) (acres) | Total IC Red. (acres) | Total BMP P Red. (lbs/yr) |
|---|---|---|---|
| 8 | 7.6 | 7.3 | N/A |
| Remaining Red. to Meet Target: | | 1.8 | N/A |

| Waterbody ID | Waterbody Name | Direct IC WS (acres) | Target IC Red. (acres) | Target P Red. (lbs/yr) |
|---|---|---|---|---|
| MA62-14 | Robinson Brook | 37.0 | 25.0 | N/A |

| BMP Type | BMP IC WS (acres) | IC Reduction (acres) | P Reduction (lbs/yr) |
|---|---|---|---|
| Infiltration Swale | - | - | N/A |
| Infiltration Swale | - | - | N/A |
| Underground Infiltration Structure/System | - | - | N/A |
| Underground Infiltration Structure/System | - | - | N/A |

| Total No. of BMPs | Total IC Area to BMP(s) (acres) | Total IC Red. (acres) | Total BMP P Red. (lbs/yr) |
|---|---|---|---|
| 4 | 0.0 | 0.0 | N/A |
| Remaining Red. to Meet Target: | | 25.0 | N/A |

| Waterbody ID | Waterbody Name | Direct IC WS (acres) | Target IC Red. (acres) | Target P Red. (lbs/yr) |
|---|---|---|---|---|
| MA74-08 | Monatiquot River | 31.5 | 22.9 | N/A |

| BMP Type | BMP IC WS (acres) | IC Reduction (acres) | P Reduction (lbs/yr) |
|---|---|---|---|
| Infiltration Basin | 1.2 | 1.0 | 2.9 |
| Infiltration Basin | 1.1 | 1.1 | 3.3 |
| Infiltration Basin | 3.0 | 3.0 | 8.5 |
| Infiltration Basin | 0.8 | 0.8 | 2.1 |
| Infiltration Basin | 0.6 | 0.5 | 1.5 |
| Other | 0.8 | 0.6 | 2.0 |

| Total No. of BMPs | Total IC Area to BMP(s) (acres) | Total IC Red. (acres) | Total BMP P Red. (lbs/yr) |
|---|---|---|---|
| 6 | 7.5 | 7.0 | 20.3 |
| Remaining Red. to Meet Target: | | 15.9 | N/A |

| Waterbody ID | Waterbody Name | Direct IC WS (acres) | Target IC Red. (acres) | Target P Red. (lbs/yr) |
|---|---|---|---|---|
| MA72-07 | Charles River | 0.0 | N/A | 307.0 |

| | BMP Type | BMP IC WS (acres) | IC Reduction (acres) | P Reduction (lbs/yr) |
|---|---|---|---|---|
| | Infiltration Basin | 0.5 | 0.5 | 2.2 |
| | Infiltration Basin | 0.7 | 0.7 | 4.2 |
| | Infiltration Basin | 0.3 | 0.3 | 1.2 |
| | Infiltration Basin | 0.5 | 0.5 | 2.5 |
| | Infiltration Basin | 0.9 | 0.3 | 0.7 |
| | Infiltration Basin | 0.4 | 0.3 | 1.5 |
| | Underground Infiltration Structure/System | 1.2 | 0.1 | 0.7 |
| | Infiltration Basin | 0.4 | 0.4 | 2.0 |
| | Infiltration Basin | 2.3 | 1.4 | 5.8 |
| | Infiltration Swale | 0.1 | 0.1 | 0.5 |
| | Infiltration Basin | 0.6 | 0.6 | 1.6 |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 11 | 7.9 | 5.2 | 22.7 |
| | Remaining Red. to Meet Target: | | N/A | 284.3 |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA72-29 | Cheese Cake Brook | 0.0 | N/A | 62.0 |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Basin | 0.40 | N/A | 1.0 |
| | Infiltration Basin | 0.10 | N/A | 0.3 |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 2 | 0.5 | N/A | 1.3 |
| | Remaining Red. to Meet Target: | | N/A | 60.7 |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA72-36 | Charles River | 123.0 | 99.0 | 254.0 |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Basin | 2.2 | 2.2 | 5.9 |
| | Infiltration Basin | 0.5 | 0.2 | 0.6 |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 2 | 2.7 | 2 | 6.5 |
| | Remaining Red. to Meet Target: | | 96.6 | 247.5 |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA35056 | Parker Pond | 1.6 | N/A | 2.6 |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Underground Infiltration Structure/System | 0.11 | N/A | 0.1 |
| | Other | 0.25 | N/A | 0.0 |
| | Underground Infiltration Structure/System | 0.07 | N/A | 0.1 |

| | BMP Type | BMP IC WS (acres) | IC Reduction (acres) | P Reduction (lbs/yr) |
|---|---|---|---|---|
| | Underground Infiltration Structure/System | 0.14 | N/A | 0.2 |
| | Leaching Catch Basin | 0.24 | N/A | 0.3 |
| | Leaching Catch Basin | 0.23 | N/A | 0.3 |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 6 | 0.1 | N/A | 0.94 |
| | Remaining Red. to Meet Target: | | N/A | 1.7 |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA51093 | Marble Pond | 6.6 | 1.6 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Swale | 0.7 | 0.2 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 1 | 0.7 | 0.2 | N/A |
| | Remaining Red. to Meet Target: | | 1.4 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA51-17 | Poor Farm Brook | 1.8 | 1.2 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Underground Infiltration Structure/System | 1.78 | 1.3 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 1 | 1.8 | 1.3 | N/A |
| | Remaining Red. to Meet Target: | | 0.0 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA93-37 | Beaver Brook | 57.1 | 40 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Basin | 0.5 | 0.5 | N/A |
| | Infiltration Basin | 0.8 | 0.8 | N/A |
| | Infiltration Swale | 5.9 | 5.9 | N/A |
| | Underground Infiltration Structure/System | 0.6 | 0.3 | N/A |
| | Underground Infiltration Structure/System | 0.7 | 0.4 | N/A |
| | Underground Infiltration Structure/System | 1.9 | 0.8 | N/A |
| | Infiltration Swale | 2.2 | 2.2 | N/A |
| | Underground Infiltration Structure/System | 2.9 | 1.9 | N/A |
| | Infiltration Swale | 0.8 | 0.8 | N/A |
| | Infiltration Basin | 0.7 | 0.7 | N/A |
| | Infiltration Basin | 0.6 | 0.6 | N/A |
| | Infiltration Basin | 0.3 | 0.3 | N/A |
| | Underground Infiltration Structure/System | 0.5 | 0.4 | N/A |
| | Underground Infiltration Structure/System | 0.5 | 0.5 | N/A |

| | Total No. of BMPs | Total IC Area to BMP(s) (acres) | Total IC Red. (acres) | Total BMP P Red. (lbs/yr) |
|---|---|---|---|---|
| | 14 | 18.9 | 16.1 | N/A |
| | Remaining Red. to Meet Target: | | 23.9 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA51-14 | Mumford River | 19.5 | 7.8 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Swale | 0.7 | 0.5 | N/A |
| | Infiltration Basin | 1.4 | 1.0 | N/A |
| | Infiltration Basin | 0.7 | 0.5 | N/A |
| | Infiltration Basin | 0.4 | 0.4 | N/A |
| | Infiltration Basin | 0.5 | 0.5 | N/A |
| | Other | 1.6 | 1.5 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 6 | 5.4 | 4.3 | N/A |
| | Remaining Red. to Meet Target: | | 3.5 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA51-15 | Tatnuck Brook | 2.0 | 0.2 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Basin | 0.6 | 0.4 | N/A |
| | Leaching Catch Basin | 0.3 | 0.2 | N/A |
| | Leaching Catch Basin | 0.1 | 0.1 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 3 | 1.0 | 0.6 | N/A |
| | Remaining Red. to Meet Target: | | 0.0 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA81-05 | Nashua River | 24.4 | 5.2 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Swale | 0.1 | 0.1 | N/A |
| | Leaching Catch Basin | 0.1 | 0.1 | N/A |
| | Leaching Catch Basin | 0.4 | 0.3 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 3 | 0.6 | 0.4 | N/A |
| | Remaining Red. to Meet Target: | | 4.8 | N/A |

| Waterbody ID | Waterbody Name | Direct IC WS (acres) | Target IC Red. (acres) | Target P Red. (lbs/yr) |
|---|---|---|---|---|
| MA34-05 | Connecticut River | 237.8 | 164.3 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Swale | 0.8 | 0.8 | N/A |
| | Infiltration Basin | 0.52 | 0.5 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 2 | 1.3 | 1.2 | N/A |
| | Remaining Red. to Meet Target: | | 163.1 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA34-19 | Stony Brook | 2.9 | 0.2 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Basin | 0.2 | 0.2 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 1 | 0.2 | 0.2 | N/A |
| | Remaining Red. to Meet Target: | | 0.0 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA61-02 | Lee River | 30.4 | 15.5 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Basin | 4.5 | 3.7 | N/A |
| | Infiltration Basin | 0.7 | 0.6 | N/A |
| | Infiltration Basin | 5.6 | 4.6 | N/A |
| | Bioretention Basin | 0.1 | 0.1 | N/A |
| | Infiltration Basin | 0.2 | 0.2 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 5 | 11.0 | 9.2 | N/A |
| | Remaining Red. to Meet Target: | | 6.4 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA62-39 | Rumford River | 20.2 | 9.0 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Basin | 0.2 | 0.2 | N/A |
| | Infiltration Swale | 0.8 | 0.8 | N/A |
| | Infiltration Swale | 0.4 | 0.3 | N/A |
| | Infiltration Swale | 0.4 | 0.4 | N/A |
| | Infiltration Basin | 2.9 | 2.8 | N/A |
| | Infiltration Basin | 1.6 | 1.4 | N/A |
| | Infiltration Basin | 1.3 | 1.2 | N/A |
| | Infiltration Basin | 0.2 | 0.2 | N/A |

| | Total No. of BMPs | Total IC Area to BMP(s) (acres) | Total IC Red. (acres) | Total BMP P Red. (lbs/yr) |
|---|---|---|---|---|
| | 8 | 7.6 | 7.3 | N/A |
| | Remaining Red. to Meet Target: | | 1.8 | N/A |

| Waterbody ID | Waterbody Name | Direct IC WS (acres) | Target IC Red. (acres) | Target P Red. (lbs/yr) |
|---|---|---|---|---|
| MA71-02 | Mystic River | 125 | 104.0 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Basin | 1.3 | 1.3 | N/A |
| | Infiltration Basin | 1.2 | 1.1 | N/A |
| | Infiltration Basin | 2.3 | 1.9 | N/A |
| | Infiltration Basin | 1.1 | 1.1 | N/A |
| | Infiltration Swale | 0.8 | 0.7 | N/A |
| | Infiltration Basin | 1.0 | 0.9 | N/A |
| | Infiltration Swale | 0.6 | 0.6 | N/A |
| | Infiltration Basin | 0.1 | 0.1 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 8 | 8.3 | 7.6 | N/A |
| | Remaining Red. to Meet Target: | | 96.4 | N/A |

| Waterbody ID | Waterbody Name | Direct IC WS (acres) | Target IC Red. (acres) | Target P Red. (lbs/yr) |
|---|---|---|---|---|
| MA95-42 | New Bedford Inner Harbor | 37.0 | 32.0 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Constructed Stormwater Wetland | 0.7 | 0.4 | N/A |
| | Constructed Stormwater Wetland | 0.7 | 0.3 | N/A |
| | Constructed Stormwater Wetland | 3.4 | 1.7 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 3 | 4.7 | 2.4 | N/A |
| | Remaining Red. to Meet Target: | | 29.6 | N/A |

| Waterbody ID | Waterbody Name | Direct IC WS (acres) | Target IC Red. (acres) | Target P Red. (lbs/yr) |
|---|---|---|---|---|
| MA73-04 | Neponset River | 65.2 | 52.9 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Swale | 3.7 | - | N/A |
| | Infiltration Basin | 2.1 | 2.1 | N/A |
| | Infiltration Basin | 0.8 | 0.8 | N/A |
| | Other | 2.4 | - | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 4 | 9.1 | 2.9 | N/A |
| | Remaining Red. to Meet Target: | | 50.0 | N/A |

| Waterbody ID | Waterbody Name | Direct IC WS (acres) | Target IC Red. (acres) | Target P Red. (lbs/yr) |
|---|---|---|---|---|
| MA74-04 | Mill River | 24.3 | 11.5 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Basin | 3.2 | 3.2 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 1 | 3.2 | 3.2 | N/A |
| | Remaining Red. to Meet Target: | | 8.3 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA61-04 | Cole River | 16.9 | 8.6 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Infiltration Swale | - | - | N/A |
| | Infiltration Swale | - | - | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 2 | 0.0 | 0.0 | N/A |
| | Remaining Red. to Meet Target: | | 8.6 | N/A |
| **Waterbody ID** | **Waterbody Name** | **Direct IC WS (acres)** | **Target IC Red. (acres)** | **Target P Red. (lbs/yr)** |
| MA71-04 | Alewife Brook | 1.1 | 0.9 | N/A |
| | **BMP Type** | **BMP IC WS (acres)** | **IC Reduction (acres)** | **P Reduction (lbs/yr)** |
| | Leaching Catch Basin | 0.1 | 0.1 | N/A |
| | Leaching Catch Basin | 0.1 | 0.1 | N/A |
| | Leaching Catch Basin | 0.1 | 0.1 | N/A |
| | Leaching Catch Basin | 0.1 | 0.1 | N/A |
| | Leaching Catch Basin | 0.1 | 0.1 | N/A |
| | **Total No. of BMPs** | **Total IC Area to BMP(s) (acres)** | **Total IC Red. (acres)** | **Total BMP P Red. (lbs/yr)** |
| | 5 | 0.4 | 0.3 | N/A |
| | Remaining Red. to Meet Target: | | 0.6 | N/A |

[1] In some cases, the predicted effective IC is determined by comparing the BMP's calculated median annual discharge volume, runoff flow/duration relationship, median annual phosphorus load, and median annual total suspended solids load to predicted discharge values for benchmark watersheds with the same size and varying percent IC. For cases following this approach where analysis predicts that BMPs would discharges less runoff volume and pollutant mass than those predicted for a 0% IC (pervious, woods in good condition) benchmark watershed, then the predicted effective IC removal would be greater than 100% and reduction of effective IC area will be greater than the BMP contributing IC area.

# Attachment A: IWP Project Summary Sheets

# Drainage Repairs and Improvements (Greenwood Pond) Stormwater Retrofit Project at Route 2

**MassDOT Project #:** 607001.1
**Project Town:** Templeton
**MassDOT District:** 2
**Water Body Name:** Greenwood Pond
**Water Body ID:** MA35026

**Project Description:**

A section of MassDOT's Route 2 in Templeton discharges stormwater to Greenwood Pond (MA35026). As part of the Impaired Waters Program, the assessment of Greenwood Pond identified water quality impairments and any existing stormwater Best Management Practices (BMPs) and identified recommendations for proposed BMPs to provide additional stormwater runoff treatment to meet the program goal of effective impervious cover (IC) and total phosphorus (TP) reduction.

**Site Description:**

This project is located along Route 2, south of the intersection with Route 2A in Templeton. Stormwater runoff from Route 2 is collected by stormwater collection systems that discharge to outfalls along either side of Route 2, some of which discharge directly to Greenwood Pond. Greenwood Pond is listed on the *2012 Integrated List of Waters* as a Category 4a impaired water, indicating the waterbody has a completed TMDL. Greenwood Pond is covered under the *Total Maximum Daily Load of Phosphorus for selected Miller Basin Lakes* (CN 123.2). Greenwood Pond is impaired for aquatic plants (macrophytes).

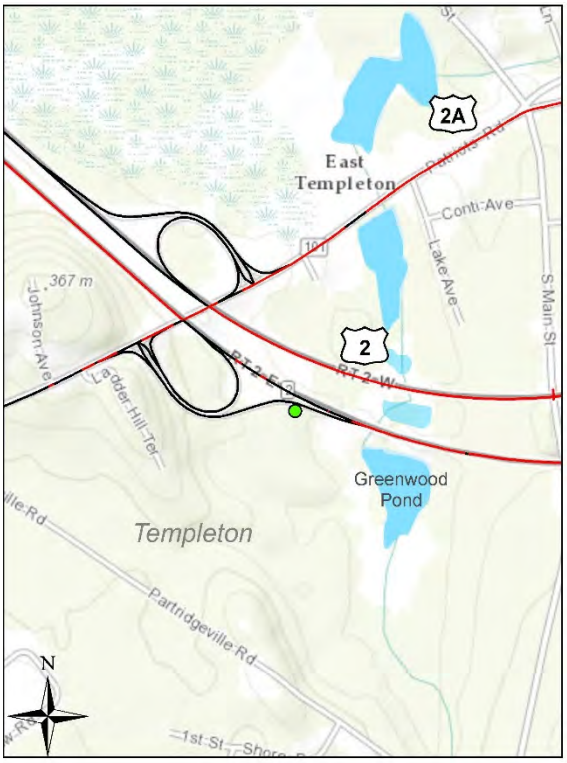
**Project Goal:**

MassDOT's directly discharging area to Greenwood Pond is 0.4 acres and no existing BMPs are in place to reduce the phosphorus load from MassDOT properties to the Greenwood Pond. In order to meet the TP load reduction target developed in the TMDL, the receiving water assessment recommended a target reduction of 71% in TP loading or 0.4 lbs/yr.

**Stormwater Management Improvements:**

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed survey of the project area. During design it was determined that there was limited workable right-of-way area along Route 2A. Exploratory test pits on the westbound shoulder of Route 2 yielded shallow groundwater tables, but MassDOT was able to design **1 new stormwater BMP**, an **Infiltration Swale**, to treat stormwater from the eastbound on-ramp from Route 2A onto Route 2 prior to draining to Greenwood Pond. The swale consists of three check dams to provide stormwater storage and treatment behind each check dam.

The retrofit project began in March 2016 and is currently in construction scheduled to be completed in the summer of 2016. The BMP provides approximately 0.63 lbs of TP reduction per year that would otherwise drain directly to Greenwood Pond. Once this BMP is complete, MassDOT will have met the TP load reduction target of 0.4 lb/yr so there is no need for additional BMPs. The construction cost of the retrofit project is estimated to be $185,000.




***Project Limits and BMP Locations***

**MassDOT BMPs**
- Infiltration Swale

# Drainage Repairs and Improvements Stormwater Intersection Project in Barnstable

**MassDOT Project #:** 606394
**Project Town:** Barnstable
**MassDOT District:** 5

**Water Body Name:** Lewis Bay
**Water Body ID:** MA96-36

**Project Description:**

A section of MassDOT's Route 28 in Barnstable is within the groundwatershed to Lewis Bay (MA96-36). As part of the Impaired Waters Program, the assessment of the Lewis Bay identified water quality impairments and any existing stormwater Best Management Practices (BMPs) within the Lewis Bay groundwatershed. The assessment identified MassDOT's contribution of nitrogen to Lewis Bay as negligible and did not recommend specific structure BMPs to implement; however, a MassDOT intersection project within the groundwatershed was planned and drainage repairs and stormwater improvements were incorporated to provide additional stormwater runoff treatment.

**Site Description:**

This project is located along Route 28 at the intersection with Bearses Way, which is west of Route 132. Stormwater runoff from Route 28 is collected by a network of catch basins and pipes and discharges to Fresh Pond within the Lewis Bay groundwatershed. Lewis Bay is listed on the *2012 Integrated List of Waters* as a Category 5 impaired water, indicating the waterbody is impaired and requires a TMDL. Lewis Bay is covered under the *Final Pathogen TMDL for the Cape Cod Watershed* (CN 252.0) and the *draft TMDL for Total Nitrogen in the Lewis Bay System, Massachusetts* (CN 314). Lewis Bay is impaired for total nitrogen and fecal coliform.

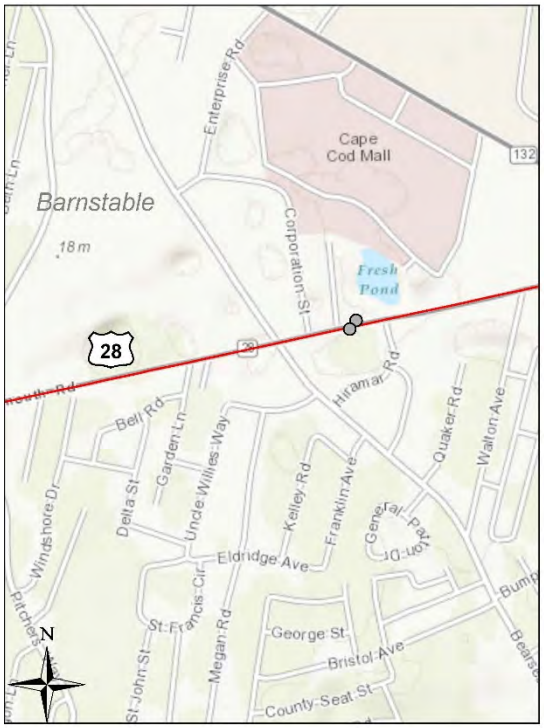
**Project Goal:**

MassDOT's directly discharging area to Lewis Bay is 60.8 acres and no existing BMPs are in place to reduce the nitrogen load from MassDOT properties to the Lewis Bay. Although no nitrogen reduction target is recommended for MassDOT, stormwater BMPs were implemented to the maximum extent practicable in the intersection project to provide additional stormwater treatment and to mitigate for increased impervious cover.

**Stormwater Management Improvements:**

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed a capacity analysis of the existing drainage system. During design it was determined that the existing stormwater system was under capacity. The widening of Rt.28 from two to four lanes limited the area within the right-of-way to install BMP's. However, MassDOT was able to design and permit **2 permeable pavement sidewalks** totaling 3,670 ft² to treat stormwater from Route 28 prior to draining to Lewis Bay.

The Route 28 widening programmed project is to begin in the 2016 construction season. The total construction cost of the programmed project is estimated to be $6,069,591 which includes the stormwater improvements.




***Project Limits and BMP Locations***

**MassDOT BMPs**
- Permeable Pavement

# Drainage Repairs and Improvements (Unnamed Tributary) Stormwater Retrofit Project at Route 60

**MassDOT Project #:** 607174
**Project Town:** Revere
**MassDOT District:** 4

**Water Body Name:** Unnamed Tributary
**Water Body ID:** MA93-51

**Project Description:**

A section of MassDOT's Route 60 in Revere discharges stormwater to the Unnamed Tributary (MA93-51), also known as "Town Line Brook". As part of the Impaired Waters Program, the assessment of Unnamed Tributary identified water quality impairments and any existing stormwater Best Management Practices (BMPs) and identified recommendations for proposed BMPs to provide additional stormwater runoff treatment to meet the program goal of effective impervious cover (IC) reduction.

**Site Description:**

The Unnamed Tributary project is located along Squire Road (Route 60) at the Route 1 Rotary in Revere. Previously, stormwater drained from this section of road through catch basins into a trunk line which then directly discharged into the Unnamed Tributary. The Unnamed Tributary is listed on the *2012 Integrated List of Waters* as a Category 5 impaired water, indicating the waterbody is impaired and requires a TMDL. This segment of the Unnamed Tributary is covered under the *Final Pathogen TMDL for the North Coastal Watershed* (CN 155.0). The Unnamed Tributary is impaired for taste and odor, fecal coliform, and other non-stormwater related pollutants.

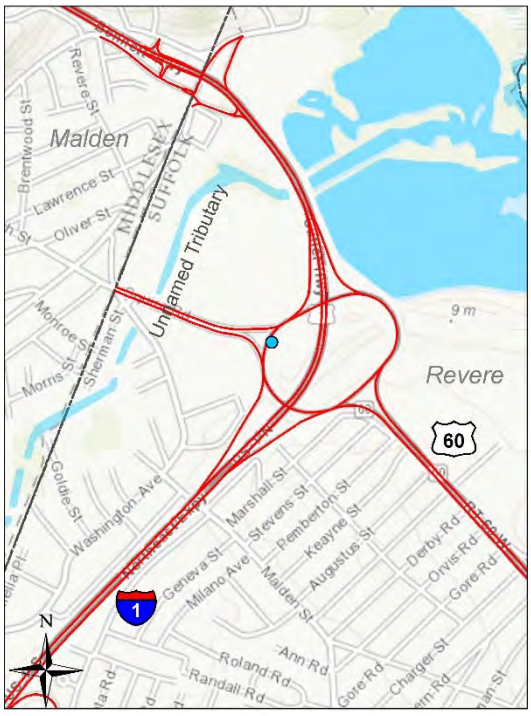
**Project Goal:**

MassDOT's directly discharging area to Unnamed Tributary is 2.1 acres and no existing BMPs were in place to treat stormwater runoff from MassDOT properties to the Unnamed Tributary. In order to meet the water quality goal, the assessment recommended an effective IC reduction target of 1.7 acres.

**Stormwater Management Improvements:**

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed survey of the project area. During design it was determined that available space to incorporate stormwater treatment was limited due to right-of-way constraints and dense urban development in the area. Several existing utilities, including a 24-inch MWRA water main encased in a 30-inch steel pipe, created limitations when navigating the proposed drainage network within Squire Road (Route 60), but MassDOT was able to design **1 new stormwater BMP,** an **Infiltration Basin**, to treat stormwater from Squire Road (Route 60) prior to draining to the Unnamed Tributary. The basin consists of a granite block lined forebay to aid in sediment removal, and an overflow spillway to regulate the basin water elevation and treatment volume.

The stormwater BMP construction was included in a resurfacing project and is scheduled to begin in July 2016. The proposed BMP provides approximately 1.0 acre of effective IC reduction that would drain directly to the Unnamed Tributary. Once the infiltration basin is completed, MassDOT would need to reduce the effective IC by 0.7 acres to meet the target; however, BMPs were implemented to the maximum extent practicable. The construction cost of the retrofit project is estimated to be $355,000.




***Project Limits and BMP Locations***

**MassDOT BMPs**
- Infiltration Basin

# Drainage Repairs and Improvements (Bass River) Stormwater Resurfacing Project at Route 128

**MassDOT Project #:** 607891
**Project Town:** Beverly
**MassDOT District:** 4

**Water Body Name: Bass River**
**Water Body ID: MA93-07**

**Project Description:**

A section of MassDOT's Route 128 in Beverly discharges stormwater to the Bass River (MA93-07). As part of the Impaired Waters Program, the assessment of the Bass River identified water quality impairments and any existing stormwater Best Management Practices (BMPs) and identified recommendations for proposed BMPs to provide additional stormwater runoff treatment to meet the program goal of effective impervious cover reduction.

**Site Description:**

This project is located in the right-of-way along Route 128 at the crossing of Bass River, west of Route 1A. Stormwater runoff from approximately 3,000 feet of Route 128 drains directly to Bass River. Stormwater runoff from Route 1A does not discharge to the Bass River. The Bass River (MA93-07) is listed on the *2012 Integrated List of Waters* as a Category 5 impaired water, indicating the waterbody is impaired and requires a TMDL. The Bass River is impaired for a fish-passage barrier and turbidity.

**Project Goal:**

MassDOT's directly discharging area to Bass River is 6.7 acres and no existing BMPs were in place to treat stormwater runoff from MassDOT properties to the Bass River. In order to meet the water quality goal, the assessment recommended an effective IC reduction target of 5 acres.

**Stormwater Management Improvements:**

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed survey of the project area. During design it was determined that there was a limitation in available right-of-way as well as constructability conflicts due to the urbanized area, stormwater infrastructure and grading limitations, but MassDOT was able to design **2 stormwater BMPs** consisting of **1 Infiltration Swale and 1 Infiltration Basin** to treat stormwater from Route 128 prior to draining to the Bass River.

The retrofit project began in Summer 2015 and is currently in construction. The BMPs provide approximately 4.6 acres of effective IC reduction that would otherwise drain directly to the Bass River. With these BMPs complete, MassDOT would need to reduce effective IC by an additional 0.4 acres to meet the target but BMPs were implemented to the maximum extent practicable. The construction cost of the retrofit project is estimated to be $220,000.


***Project Limits and BMP Locations***

**MassDOT BMPs**
- Infiltration Basin
- Infiltration Swale

# Drainage Repairs and Improvements (Shawsheen River) Stormwater Resurfacing Project at I-495

**MassDOT Project #:** 607985
**Project Town:** North Andover and Lawrence
**MassDOT District:** 4
**Water Body Name:** Shawsheen River
**Water Body ID:** MA83-19

**Project Description:**

Sections of MassDOT's I-495 in North Andover and Lawrence discharge stormwater to the Shawsheen River (MA83-19). As part of the Impaired Waters Program, the assessment of the Shawsheen River identified water quality impairments and any existing stormwater Best Management Practices (BMPs) and identified recommendations for proposed BMPs to provide additional stormwater runoff treatment to meet the program goal of effective impervious cover (IC) reduction.

**Site Description:**

The Shawsheen River project is located along I-495 near the town lines of North Andover and Lawrence. Stormwater runoff from I-495 discharges to the Shawsheen River through various means depending on the location along I-495. The Shawsheen River is listed on the *2012 Integrated List of Waters* as a Category 5 impaired water, indicating the waterbody is impaired and requires a TMDL. This segment of the Shawsheen River is covered under the *Bacteria TMDL for the Shawsheen River Basin* (CN 122.0). The Shawsheen River is impaired for fecal coliform and dissolved oxygen.

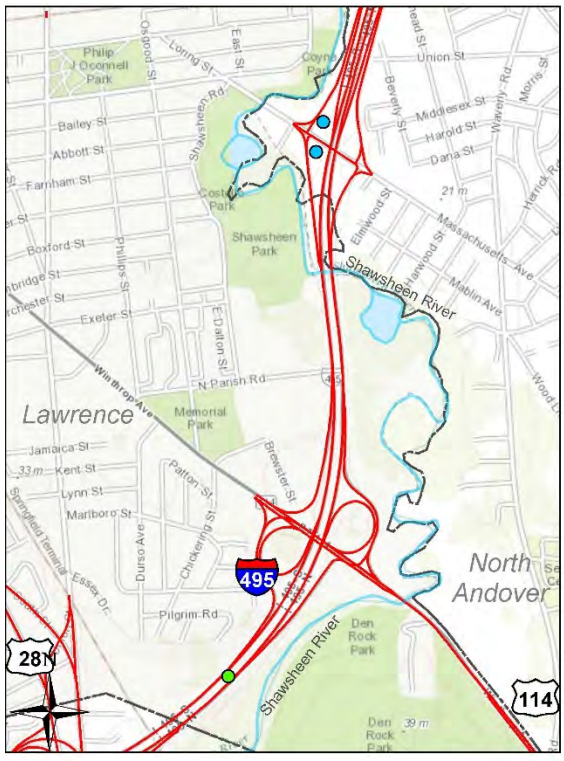
**Project Goal:**

MassDOT's directly discharging area to Shawsheen River is 58.3 acres and no existing BMPs are in place that qualify as reducing effective impervious cover from MassDOT properties before draining to the Shawsheen River. In order to meet the water quality goal, the assessment recommended an effective IC target reduction of 39.3 acres.

**Stormwater Management Improvements:**

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed survey of the project area. During design it was determined that MassDOT was able to design **3 stormwater BMPs** consisting of **1 Infiltration Swale and 2 Infiltration Basins** to treat stormwater from I-495 prior to draining to the Shawsheen River. This project was included in a district resurfacing project and included retrofitting an existing swale with check dams to provide treatment and proposing 2 infiltration basins with treatment swales flowing into the basins and an outlet control structure.

The retrofit project will begin in the spring of 2016 as part MassDOT Project No. 607985 with a slated completion date of spring 2017. The BMPs provide approximately 1.7 acres of effective IC reduction that would otherwise drain directly to the Shawsheen River. With these BMPs complete, MassDOT would need to reduce the effective IC by an additional 37.6 acres to meet the target but BMPs were implemented to the maximum extent practicable. The construction cost of the entire MassDOT project is $6.9M and the stormwater retrofit portion is $148,000.




***Project Limits and BMP Locations***

# Drainage Repairs and Improvements (Nashua River) Stormwater Retrofit Project at Route 2A

**MassDOT Project #:** 607002.3
**Project Town:** Shirley
**MassDOT District:** 3

**Water Body Name: Nashua River**
**Water Body ID: MA81-05**

**Project Description:**

Sections of MassDOT's Route 2 and 2A in the towns of Devens, Harvard, Lancaster, and Shirley generate stormwater runoff that discharges to the Nashua River (MA81-05). As part of the Impaired Waters Program, the assessment of the Nashua River identified water quality impairments and any existing stormwater Best Management Practices (BMPs) and identified recommendations for proposed BMPs to provide additional stormwater runoff treatment to meet the program goal of effective impervious cover (IC) reduction.

**Site Description:**

The project is located along Route2A where it passes over the Nashua River. Stormwater runoff from Route 2A is collected by a series of paved waterways that discharge runoff directly to the Nashua River. The Nashua River is listed on the *2012 Integrated List of Waters* as a Category 5 impaired water, indicating the waterbody is impaired and requires a TMDL. This segment of the Nashua River is covered under the *Draft Pathogen TMDL for the Nashua River Watershed* and the *Draft Nashua River TMDL for the Nutrient Phosphorus.* The Nashua River (MA81-05) is impaired for aquatic macroinvertebrate bioassessments, sediment bioassays, total phosphorus, and Escherichia coli.

**Project Goal:**

MassDOT's directly discharging area to the Nashua River is 24.4 acres. In order to meet the water quality goal, the assessment recommended an effective IC target reduction of 5.2 acres; however, three existing BMPs (2 water quality swales and 1 sedimentation basin) were identified that treat stormwater to the Nashua River, collectively providing a reduction of 2.55 acres of effective IC and reducing the target reduction to 2.65 acres.

**Stormwater Management Improvements:**

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed survey of the project area. During design it was determined that there was a limitation in available right-of-way as well as constructability conflicts due to grading limitations, proximity of wetland resource areas, and soil conditions, but MassDOT was able to design **3 stormwater BMPs** consisting of **1 Infiltration Swale** and **2 Leaching Basins** along Route 2A to treat stormwater prior to draining to the Nashua River.

The retrofit project began in Spring 2016 and is currently in construction with an estimated completion date of July 2017. The BMPs provide approximately 0.44 acres of effective IC reduction that would otherwise drain directly to the Nashua River. With these BMPs complete, MassDOT would need to reduce the effective IC by another 2.21 acres to meet the target. MassDOT is planning to incorporate more BMPs with future programmed projects. The construction cost of this retrofit project is estimated to be $193,000.


***Project Limits and BMP Locations***

**MassDOT BMPs**
- Infiltration Swale
- Leaching Catch Basin

# Drainage Repairs and Improvements (Town Brook) Stormwater Retrofit Project at Route 3 and I-93 Interchange

**MassDOT Project #:** 606997.1
**Project Town:** Braintree
**MassDOT District:** 6

**Water Body Name: Town Brook**
**Water Body ID: MA74-09**

**Project Description:**

Sections of MassDOT's Route 3 and I-93 in the town of Braintree discharge stormwater to Town Brook (MA74-09). As part of the Impaired Waters Program, the assessment of the Town Brook identified water quality impairments and any existing stormwater Best Management Practices (BMPs) and identified recommendations for proposed BMPs to provide additional stormwater runoff treatment to meet the program goal of effective impervious cover (IC) reduction.

**Site Description:**

This project is located in Braintree at the town boundary with Quincy where Route 3 and I-93 meet. Town Brook starts at the Old Quincy Reservoir (MA74017) in Braintree and flows to Town River Bay (MA74-15) in Quincy. Stormwater runoff, mainly from the ramps of the interchange, flows through catch basins into paved ditches that guide the stormwater to the Town Brook. Town Brook is listed on the *2012 Integrated List of Waters* as a Category 5 impaired water, indicating the waterbody is impaired and requires a TMDL. This segment of Town Brook is covered under the *Draft Pathogen TMDL for the Boston Harbor Watershed*. Town Brook is impaired for aquatic macroinvertebrate bioassessments and fecal coliform.

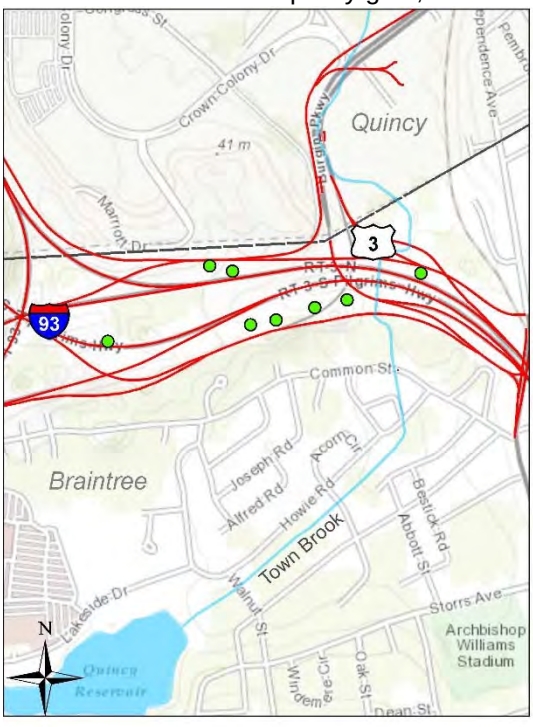
**Project Goal:**

MassDOT's directly discharging area to Town Brook is 34.7 acres and no existing BMPs were in place to treat stormwater runoff from MassDOT properties to the Town Brook. In order to meet the water quality goal, the assessment recommended an effective IC reduction target of 27.1 acres.

**Stormwater Management Improvements:**

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed survey of the project area. During design it was determined that MassDOT was able to design and upgrade **8 stormwater BMPs** consisting of all **Infiltration Swales** to treat stormwater from Route 3 prior to draining to Town Brook. The project included adding stone check dams, removing concrete swales and replacing with grass swales, and erosion/velocity protection as needed.

The retrofit project was awarded in October 2015, with construction starting in spring of 2016. It is anticipated that this retrofit project will be completed in winter 2016. The BMP provides approximately 5.5 acres of effective IC reduction that would otherwise drain directly to Town Brook. With these BMPs complete, MassDOT would need to reduce the effective IC by an additional 21.6 acres to meet the targets but BMPs were implemented to the maximum extent practicable. This project was constructed under the same contract as the improvements for Mill River (MA74-04) and Neponset River (MA73-04) (see separate cut sheets for those water bodies). The total construction cost of the retrofit project was awarded with a cost of $1,125,000.




***Project Limits and BMP Locations***

# Drainage Repairs and Improvements (Mill River) Stormwater Retrofit Project at Route 3

**MassDOT Project #:** 606997.2
**Project Town:** Weymouth
**MassDOT District:** 6

**Water Body Name: Mill River**
**Water Body ID: 74-04**

**Project Description:**

A section of MassDOT's Route 3 in Weymouth discharges stormwater to the Mill River (MA74-04). As part of the Impaired Waters Program, the assessment of the Mill River identified water quality impairments and any existing stormwater Best Management Practices (BMPs) and identified recommendations for proposed BMPs to provide additional stormwater runoff treatment to meet the program goal of effective impervious cover (IC) reduction.

**Site Description:**

This project is located at the intersection of Route 3 and Route 18 which passes over the Mill River. Stormwater runoff from Route 3 is collected by catch basins and discharges to wetlands on the outer side of the ramps that are connected to Mill River. Mill River is listed on the *2012 Integrated List of Waters* as a Category 5 impaired water, indicating the waterbody is impaired and requires a TMDL. This segment of the Mill River is covered under the *Draft Pathogen TMDL for the Boston Harbor Watershed*. The Mill River is impaired for nutrient/eutrophication biological indicators and fecal coliform.

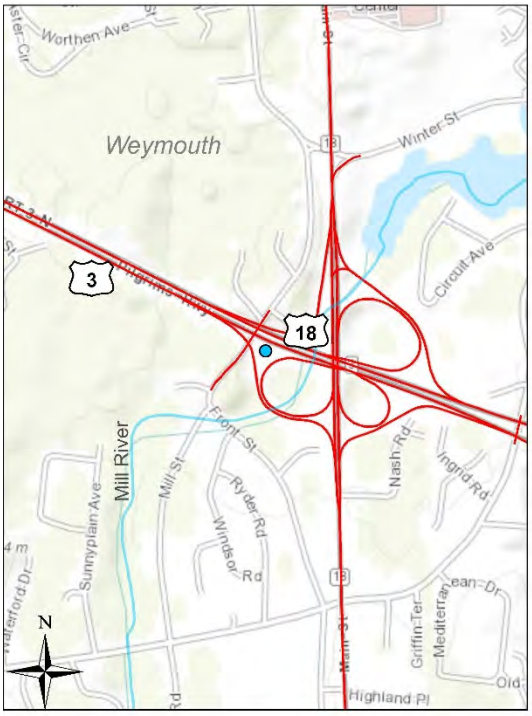
**Project Goal:**

MassDOT's directly discharging area to Mill River is 24.3 acres and no existing BMPs are in place to treat stormwater runoff from MassDOT properties to the Mill River. In order to meet the water quality goal, the assessment recommended an effective IC reduction target reduction of 11.5 acres. The Route 3 and Route 18 interchange falls within a DEP Zone II wellhead protection area which was taken into account during design.

**Stormwater Management Improvements:**

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed survey of the project area. During design it was determined that MassDOT was able to design **1 stormwater BMP** consisting of **1 Infiltration basin** to treat stormwater from Route 3 prior to draining to the Mill River. The infiltration basin includes: a sediment forebay, removal of two paved swales in the infiltration basin, and a new outlet control structure.

The retrofit project was awarded in October 2015, with construction starting in spring of 2016. It is anticipated that this retrofit project will be completed in winter 2016. The BMP provides approximately 3.18 acres of effective IC reduction that would otherwise drain directly to the Mill River. With this BMP complete, MassDOT would need to reduce the effective IC by an additional 8.3 acres to meet the target but BMPs were implemented to the maximum extent practicable. This project will be constructed under the same contract as the improvements for Town Brook (MA74-09) and Neponset River (MA73-04) (see separate cut sheets for those water bodies). The total construction cost of the retrofit project was awarded with a cost of $1,125,000.




***Project Limits and BMP Locations***

# Drainage Repairs and Improvements (Neponset River) Stormwater Retrofit Project at I-93

**MassDOT Project #:** 606997.3
**Project Towns:** Milton and Boston
**MassDOT District:** 6

**Water Body Name: Neponset River**
**Water Body ID: MA73-04**

## Project Description:

Sections of MassDOT's I-93 in the towns of Milton and Boston discharge stormwater to the Neponset River (MA73-04). As part of the Impaired Waters Program, the assessment of the Neponset River identified water quality impairments and any existing stormwater Best Management Practices (BMPs) and identified recommendations for proposed BMPs to provide additional stormwater runoff treatment to meet the program goal of effective impervious cover (IC) reduction.

## Site Description:

This project is located along I-93 spanning across Milton and Boston. Although most of the stormwater from these sections of I-93 flow into a municipal stormwater system, these sections of roadway are considered to be a direct discharge to the Neponset River because the distance that the flow travels in municipal system is small before ultimately discharging into the Neponset River. The Neponset River is listed on the *2012 Integrated List of Waters* as a Category 5 impaired water, indicating the waterbody is impaired and requires a TMDL. This segment of the Neponset River is covered under the *Final TMDLs of Bacteria for Neponset River* (CN 121.0) The Neponset River is impaired for enterococcis, fecal coliform, PCB in fish tissue, dissolved oxygen, turbidity, and other non-stormwater impairments.

## Project Goal:

MassDOT's directly discharging area to Neponset River is 65.2 acres and no existing BMPs were in place to treat stormwater runoff from MassDOT properties to the Neponset River. In order to meet the water quality goal, the assessment recommended an effective IC reduction target of 52.9 acres.

## Stormwater Management Improvements:

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed survey of the project area. During design it was determined that MassDOT was able to design **4 stormwater BMPs** consisting of **1 Infiltration Swale and 2 Infiltration Basins, as well as 1 retrofit to an existing retention basin** to treat stormwater from I-93 prior to draining to the Neponset River. The retrofits include constructing check dams, flow divider, sediment forebay, infiltration basins, rock spillways, piping modifications, and landscaping.

The retrofit project was awarded in October 2015, with construction starting in spring of 2016. It is anticipated that this retrofit project will be completed in winter 2016. The BMPs provide approximately 9.1 acres of effective IC reduction that would otherwise drain directly to the Neponset River. With these BMPs complete, MassDOT would need to reduce the phosphorus loading by an additional 43.8 acres of IC to meet the targets but BMPs were implemented to the maximum extent practicable. This project was constructed under the same contract as the improvements for Town Brook (MA74-09) and Mill River (MA74-04) (see separate cut sheets for those water bodies). The total construction cost of the retrofit project was awarded with a cost of $1,125,000.


***Project Limits and BMP Locations***

**MassDOT BMPs**
- Infiltration Basin
- Infiltration Swale
- Other

# Drainage Repairs and Improvements (Charles River) Stormwater Retrofit Project at I-95 North

**MassDOT Project #:** 606282.2
**Project Town:** Newton
**MassDOT District:** 6

**Water Body Name: Charles River**
**Water Body ID: MA72-07**

### Project Description:

A section of MassDOT's I-95 in Newton discharges stormwater to the Charles River (MA72-07). As part of the Impaired Waters Program, the assessment of the Charles River identified water quality impairments and any existing stormwater Best Management Practices (BMPs) and identified recommendations for proposed BMPs to provide additional stormwater runoff treatment to meet the program goal of effective impervious cover (IC) and total phosphorus (TP) reduction.

### Site Description:

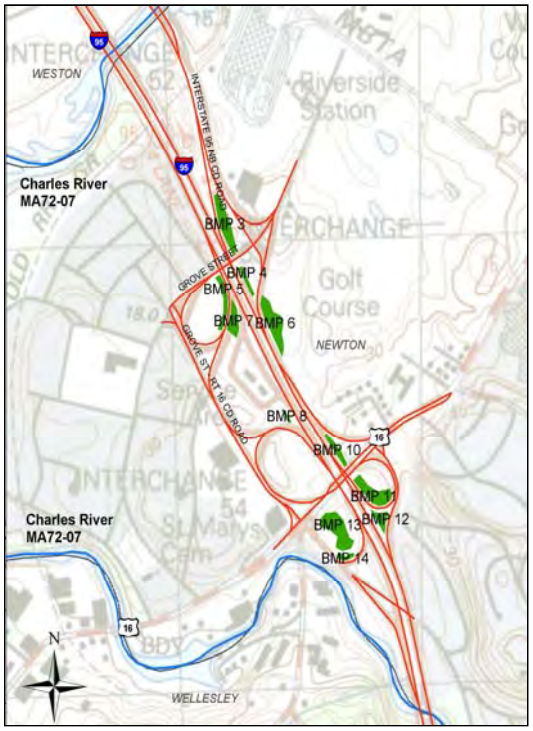
The Charles River at I-95 North project is located along I-95 between the Charles River crossing at the Weston/Newton line and the Charles River crossing at the Newton/Wellesley line. Stormwater runoff from I-95 flows through a closed drainage system and seventeen outfalls to the Charles River. The Charles River is listed on the 2012 Integrated List of Waters as a Category 5 impaired water, indicating the waterbody is impaired and requires a TMDL. This segment of the Charles River is covered under the *Total Maximum Daily Load for Nutrients in the Upper/Middle Charles River* (CN 272.0) and *the Final Pathogen TMDL Reports for the Charles River Watershed* (CN 156.0). The Charles River is impaired for DDT, fishes bioassessments, PCB in fish tissue, non-native aquatic plants, eurasion water milfoil, myriophyllum spectrum, fish-passage barrier, other flow regime alterations, nutrient/eutrophication biological indicators, total phosphorus, and Escherichia coli.

### Project Goal:

MassDOT directly discharges to Charles River and no existing BMPs are in place to reduce the phosphorus load from MassDOT properties to the Charles River. In order to meet the phosphorus load reduction target developed in the TMDL, the receiving water assessment recommended a phosphorus target reduction of 307 lbs/yr.

### Stormwater Management Improvements:

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed survey of the project area. During design it was determined that limited right-of-way, abutting railroad, and sound barriers constrained the area available for construction, but MassDOT was able to design **10 stormwater BMPs** consisting of **1 Infiltration Swale, 8 Infiltration Basins, and 1 Infiltration Trench** to treat stormwater from I-95 prior to draining to the Charles River.




***Project Limits and BMP Locations***

The retrofit project began in Fall 2014 and completed construction in Fall 2015. The BMPs provide approximately 22.8 lbs of total phosphorus reduction per year (and 5.2 acres of effective IC reduction) that would otherwise drain directly to the Charles River. With these BMPs complete, MassDOT would need to reduce the phosphorus loading by an additional 284 lbs/yr to meet the target. MassDOT broke up this waterbody into multiple projects in order to implement BMPs to the maximum extent practicable and there are future projects planned to provide additional load reductions. The construction cost of the retrofit project was $970,000.

Photo 1. BMP 13, Infiltration Basin – Looking West

Photo 2. BMP 13, Infiltration Basin – Looking North

# Drainage Repairs and Improvements (Tatnuck Brook) Stormwater Retrofit Project at Route 122

**MassDOT Project #:** 607002.2
**Project Town:** Worcester
**MassDOT District:** 3

**Water Body Name: Tatnuck Brook**
**Water Body ID: MA51-15**

**Project Description:**

A section of MassDOT's Route 122 in Worcester discharges stormwater to the Tatnuck Brook (MA51-15). As part of the Impaired Waters Program, the assessment of the Tatnuck Brook identified water quality impairments and any existing stormwater Best Management Practices (BMPs) and identified recommendations for proposed BMPs to provide additional stormwater runoff treatment to meet the program goal of effective impervious cover (IC) reduction.

**Site Description:**

The Route 122 project is located in Worcester where Route 122 crosses Tatnuck Brook after Tatnuck Brook flows through Cook Pond. Three outfalls along Route 122 contribute stormwater runoff directly to Tatnuck Brook. Tatnuck Brook is listed on the *2012 Integrated List of Waters* as a Category 5 impaired water, indicating the waterbody is impaired and requires a TMDL. Tatnuck Brook is impaired for aquatic macroinvertebrate bioassessments, sedimentation/siltation, turbidity, and other non-stormwater impairments.

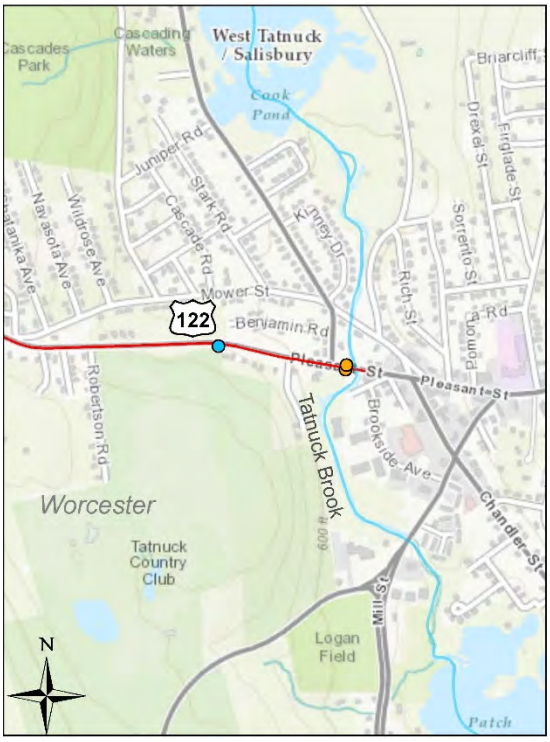
**Project Goal:**

MassDOT's directly discharging area to Tatnuck Brook is 2.0 acres and no existing BMPs were in place to treat stormwater runoff from MassDOT properties to the Tatnuck Brook. In order to meet the water quality goal, the assessment recommended an effective IC reduction target of 0.2 acres.

**Stormwater Management Improvements:**

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed survey of project area. During design it was determined that limited right of way and the existing drainage system inverts limited the potential number of BMPs that could be installed. MassDOT was able to design **3 stormwater BMPs** consisting of **1 Infiltration Basin and 4 Leaching Catch Basins** to treat stormwater from Route 122 prior to draining to Tatnuck Brook.

The retrofit project began Spring 2016 and is still in construction. The BMPs provide approximately 0.62 acres of effective IC reduction that would otherwise drain directly to the Tatnuck Brook. Once these BMPs are complete, MassDOT will have met the effective IC reduction target of 0.2 acres so there is no need for additional BMPs. The construction cost of the retrofit project is estimated to be $178,000.




***Project Limits and BMP Locations***

**MassDOT BMPs**

- Infiltration Basin
- Leaching Catch Basin

# Drainage Repairs and Improvements (Mumford River) Stormwater Retrofit Project at Route 146

**MassDOT Project #:** 607002.1
**Project Town:** Uxbridge
**MassDOT District:** 3

**Water Body Name: Mumford River**
**Water Body ID: MA51-14**

**Project Description:**

A section of MassDOT's Route 146 in the towns of Douglas and Uxbridge discharges stormwater to the Mumford River (MA51-14). As part of the Impaired Waters Program, the assessment of the Mumford River identified water quality impairments and any existing stormwater Best Management Practices (BMPs) and identified recommendations for proposed BMPs to provide additional stormwater runoff treatment to meet the program goal of effective impervious cover reduction (IC).

**Site Description:**

The Mumford River project is located at the interchange of Route 146 and Lackey Dam Road, where the towns of Douglas and Uxbridge meet. Direct stormwater runoff from MassDOT's roadway enters segment MA51-14 at three main locations: the Route 146/Lackey Dam Road interchange in Uxbridge, the Route 122 Bridge crossing in Uxbridge, and the Route 16 Bridge crossing in Uxbridge. The Mumford River is listed on the *2012 Integrated List of Waters* as a Category 5 impaired water, indicating the waterbody is impaired and requires a TMDL. This segment of the Mumford River is covered under the *Draft Pathogen TMDL for the Blackstone River Watershed*. The Mumford River is impaired for aquatic plants (macrophytes), copper, dissolved oxygen, fecal coliform, lead, low pH and other non-stormwater impairments.

**Project Goal:**

MassDOT's directly discharging area to Mumford River is 19.5 acres and no existing BMPs were in place to treat stormwater runoff from MassDOT properties to the Mumford River. In order to meet the water quality goal, the assessment recommended an effective IC reduction target of 7.8 acres.

**Stormwater Management Improvements:**

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed survey of project area. During design it was determined that limited right of way at the Route 122 Bridge Crossing and Route 16 Bridge Crossing would not allow for the design of any BMPs at these locations. At the Route 146/Lackey Dam Road interchange, area within the layout was available for BMPs. MassDOT was able to design **6 stormwater BMPs** consisting of **1 Water Quality Swale with Check Dams, 1 Infiltration Swale with Check Dams, and 4 Infiltration Basins** to treat stormwater from Route 146 prior to draining to Mumford River. Shallow groundwater and steep slopes prevented the design of additional BMPs at this location.

The retrofit project began in Spring 2017 and is still in construction with an estimated completion date of July 2017. The BMPs provide approximately 4.3 acres of effective IC reduction that would otherwise drain directly to the Mumford River. With these BMPs complete, MassDOT would need to reduce the effective IC by an additional 3.5 acres to meet the targets but BMPs were implemented to the maximum extent practicable. The construction cost of the retrofit project is estimated to be $405,000.


***Project Limits and BMP Location***

**MassDOT BMPs**

- Infiltration Basin
- Infiltration Swale
- Other

# Drainage Repairs and Improvements (Connecticut River – Subbasins C and D) Stormwater Retrofit Project at I-91 and Route 5

| | | | |
|---|---|---|---|
| **MassDOT Project #:** | **607001.3** | **Water Body Name:** | **Connecticut River** |
| **Project Town:** | **Springfield and Longmeadow** | **Water Body ID:** | **MA34-05** |
| **MassDOT District:** | **2** | | |

**Project Description:**

Sections of MassDOT's I-91 and Route 5 in Springfield and Longmeadow discharge stormwater to the Connecticut River (MA34-05). As part of the Impaired Waters Program, the assessment of the Connecticut River identified water quality impairments and existing stormwater Best Management Practices (BMPs) and identified recommendations for proposed BMPs to provide additional stormwater runoff treatment to meet the program goal of effective impervious cover reduction.

**Site Description:**

This project is located along I-91 in the towns of Springfield and Longmeadow, MA. Stormwater runoff from I-91 and Route 5 is collected by catch basins and discharge through outfalls along I-91 directly to the Connecticut River. The Connecticut River is listed on the *2012 Integrated List of Waters* as a Category 5 impaired water, indicating the waterbody is impaired and requires a TMDL. The Connecticut River is impaired for PCB in fish tissue, total suspended solids, and Escherichia coli.

**Project Goal:**

MassDOT's directly discharging area to Connecticut River is 237.8 acres and no existing BMPs were in place to treat stormwater runoff from MassDOT properties to the Connecticut River. In order to meet the water quality goal, the assessment recommended an effective IC target reduction of 164.3 acres.

**Stormwater Management Improvements:**

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed survey of the project area. During design it was determined that there was a limitation in available right-of-way, as well as constructability conflicts due to grading limitations, proximity of wetland resource areas, soil conditions, and combined sewer and stormwater infrastructure, but MassDOT was able to design **2 stormwater BMPs** consisting of **2 Infiltration Basins** to treat stormwater from Route 5 and I-91 prior to draining to the Connecticut River.

The retrofit project began in Fall 2015 and is still in construction. **The BMPs provide approximately 5.72 acres of effective IC reduction** that would otherwise drain directly to the Connecticut River. With these BMPs complete, MassDOT would need to reduce the effective IC by an additional 232.1 acres to meet the target. MassDOT divided the retrofit projects to provide water quality treatment for this waterbody into multiple projects due to the length of the water body. Additional future retrofit projects are planned to meet the target. The construction cost of this retrofit project is $418,000.


***Project Limits and BMP Locations***

**MassDOT BMPs**
- Infiltration Basin

# Drainage Repairs and Improvements (Westfield River) Stormwater Retrofit Project at Route 20

**MassDOT Project #:** 607001.2
**Project Town:** Westfield
**MassDOT District:** 2

**Water Body Name: Westfield River**
**Water Body ID: MA32-05**

**Project Description:**

A section of MassDOT's Route 20 in Westfield discharges stormwater to the Westfield River (MA32-05). As part of the Impaired Waters Program, the assessment of the Westfield River identified water quality impairments and any existing stormwater Best Management Practices (BMPs) and identified recommendations for proposed BMPs to provide additional stormwater runoff treatment to meet the program goal of effective impervious cover (IC) reduction.

**Site Description:**

This project is located along a stretch of Route 20 that runs adjacent to the Westfield River. Portions of Route 20 directly contribute stormwater runoff to the Westfield River. The Westfield River is listed on the *2012 Integrated List of Waters* as a Category 5 impaired water, indicating the waterbody is impaired and requires a TMDL. The Westfield River is impaired for aquatic macroinvertebrate bioassessments, excess algal growth, taste and odor, and turbidity.

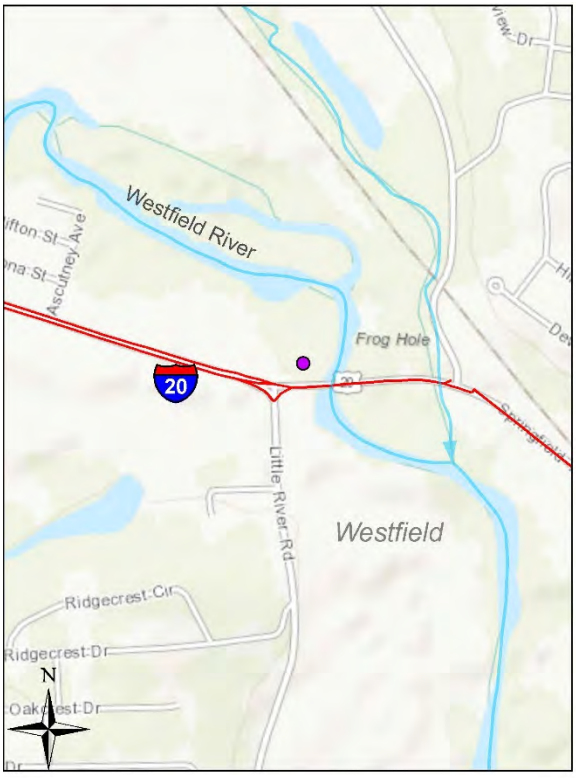
**Project Goal:**

MassDOT's directly discharging area to Westfield River is 25.0 acres and no existing BMPs are in place that qualify as reducing effective impervious cover from MassDOT properties before draining to the Westfield River. In order to meet the water quality goal, the assessment recommended an effective IC reduction target of 1.6 acres.

**Stormwater Management Improvements:**

MassDOT reviewed the directly contributing area for potential locations to install treatment BMPs and performed survey of the project area. During design it was determined that a shallow groundwater table in the area may limit feasible treatment options. The proximity to the Westfield River posed compensatory flood storage issues with certain BMP types, but MassDOT was able to design **1 new stormwater BMP**, an **Extended Detention Constructed Wetland Basin,** to treat stormwater from Route 20 prior to draining to the Westfield River. The basin consists of a granite block lined forebay to aid in sediment removal, an overflow control structure to regulate the basin water elevation, and a maintenance access ramp from the adjacent roadway.

The retrofit project began in March 2016 and is currently in construction scheduled to be completed in the summer of 2016. The BMP provides approximately 3.0 acres of effective IC reduction that would otherwise drain directly to the Westfield River. Once this BMP is complete, MassDOT will have met the effective IC reduction target of 1.6 acres so there is no need for additional BMPs. The construction cost of the retrofit project is estimated to be $312,000.




***Project Limits and BMP Locations***

# Appendix E: Water Quality Data Forms Submitted in Permit Year 13

25% Submissions

# 25% Submissions

| Project Number | Project Type | Project Name | Project Road | Location | District | Final Ownership | SW into outside Organization | Project located in WS with TMDL | No. of 303d list Waterbodies that receive runoff | WBID #1 | WB #1 Name | WB #1 Status | Impairments | WB #1 Final TMDL | WBID #2 | WB #2 Name | WB #2 Status | WB #2 Impairments | WB #2 TMDL | WBID #3 | WB #3 Name | WB #3 Status | WB #3 Impairments | WB #3 TMDL | WBID #4 | WB #4 Name | WB #4 Status | WB #4 Impair me | WB #4 TMDL | Date Submitted to MassDOT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 604810 | Highway Reconstruction | RECONSTRUCTION OF ROUTE 85 (MAPLE STREET) | Route 85 (Maple Street) | Marlborough | 3 | Municipality | Yes | Yes | 1 | MA82106 | Sudbury Reservoir | Impaired | Mercury in Fish Tissue | N/A | | | | | | | | | | | | | | | | 03/05/15 |
| 606777 | Bridge | NEWTON-BRIDGE REHABILITATION ALONG I-90, N-12-065, RAMPS A & B, STRUCTURE L-50 OVER CHARLES RIVER | I-90 | Newton, Weston | 6 | MassDOT | No | Yes | 1 | MA72-07 | Charles River | Impaired | (Fish-Passage Barrier*), (Non-Native Aquatic Plants*), (Other flow regime alterations*), DDT, Escherichia coli, (Eurasian Water Milfoil, Myriophyllum spicatum*), Fishes Bioassessments, Nutrient/Eutrophication Biological Indicators, PCB in Fish Tissue, Phosphorus (Total) | Bacteria/Pathogens, Phosphorus | | | | | | | | | | | | | | | | | 04/17/15 |
| 607580 | Other | DISTRICT 2 - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90 | I-90 | Statewide | 2 | MassDOT | No | No | 1 | MA32-09 | Powdermill Brook | Impaired | Excess Algal Growth, Sedimentation/Siltation, Turbidity | N/A | | | | | | | | | | | | | | | | | 01/15/15 |
| 607580 | Other | DISTRICT 2 - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90 | I-90 | Statewide | 2 | MassDOT | No | No | 1 | MA34-05 | Connecticut River | Impaired | Escherichia coli, PCB in Fish Tissue, Total Suspended Solids (TSS) | N/A | | | | | | | | | | | | | | | | | 01/15/15 |
| 607580 | Other | DISTRICT 2 DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90 | I-90 | STATEWIDE | 2 | MassDOT | No | No | 2 | MA36-24 | Chicopee River | Impaired | Fecal Coliform | N/A | MA36-25 | Chicopee River | Impaired | Escherichia coli | N/A | | | | | | | | | | | 01/15/15 |
| 607581 | Other | DISTRICT 2B - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90, PLAZA NO. 6 IN CHICOPEE, MA | I-90 | Statewide | 2 | MassDOT | No | No | 1 | MA36-24 | Chicopee River | Impaired | Fecal Coliform | N/A | | | | | | | | | | | | | | | | | 03/26/15 |
| 607581 | Other | DISTRICT 2B - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90, PLAZA NO. 7 IN LUDLOW, MA | I-90 | Statewide | 2 | MassDOT | No | No | 1 | MA36069 | Haviland Pond | Not Impaired | N/A | N/A | | | | | | | | | | | | | | | | | 03/26/15 |
| 607581 | Other | DISTRICT 2B - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90, PLAZA NO. 8 IN PALMER, MA | I-90 | Statewide | 2 | MassDOT | No | No | 0 | | | | | N/A | | | | | | | | | | | | | | | | | 03/26/15 |
| 604597 | Highway Reconstruction | NORTHAMPTON - I-91 INTERCHANGE 19 IMPROVEMENTS AT ROUTE 9 AND DAMON RD | Bridge Street (Route 9), Damon Road, I-91 | Northampton | 2 | MassDOT | No | Yes | 1 | MA34-04 | Connecticut River | Impaired | Escherichia coli, PCB in Fish Tissue | N/A | | | | | | | | | | | | | | | | | 05/04/15 |
| 604838 | Bridge | WINCHENDON-SUPERSTRUCTURE OR BRIDGE REPLACEMENT, W-39-001, HARRIS ROAD OVER TARBELL BROOK | Harris Road | Winchendon | 2 | Municipality | No | No | 1 | MA35-01 | Millers River | Impaired | Ambient Bioassays -- Chronic Aquatic Toxicity, Fecal Coliform, PCB in Fish Tissue, Phosphorus (Total) | N/A | | | | | | | | | | | | | | | | | 10/14/14 |
| 607442 | Highway Reconstruction | NORTHBOROUGH/SHREWSBURY - RECONSTRUCTION ON ROUTE 9 & ROUTE 20 RAMP IMPROVEMENTS | Route 9, Route 20 | Northborough, Shrewsbury | 3 | MassDOT | No | Yes | 1 | MA82099 | Smith Pond | Not Impaired | N/A | N/A | | | | | | | | | | | | | | | | | 03/04/15 |
| 607428 | Intersection | MILFORD - RESURFACING & INTERSECTION IMPROVEMENTS ON ROUTE 16 (MAIN STREET), FROM WATER STREET TO THE HOPEDALE T.L. | Route 16 (Main Street) | Milford | 3 | Municipality | Yes | Yes | 1 | MA72-33 | Charles River | Impaired | (Physical substrate habitat alterations*), Escherichia coli, Nutrient/Eutrophication Biological Indicators | Bacteria/Pathogens, Phosphorus | | | | | | | | | | | | | | | | | 11/06/14 |

# 25% Submissions

| Project Number | Project Type | Project Name | Project Road | Location | District | Final Ownership | SW into outside Organization | Project located in WS with TMDL | No. of 303d list Waterbodies that receive runoff | WBID #1 | WB #1 Name | WB #1 Status | Impairments | WB #1 Final TMDL | WBID #2 | WB #2 Name | WB #2 Status | WB #2 Impairments | WB #2 TMDL | WBID #3 | WB #3 Name | WB #3 Status | WB #3 Impairments | WB #3 TMDL | WBID #4 | WB #4 Name | WB #4 Status | WB #4 Impair me | WB #4 TMDL | Date Submitted to MassDOT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 604468 | Bridge | BRIDGE REPLACEMENT, W-19-008, WICKABOAG VALLEY ROAD OVER SUCKER BROOK | Wickaboag Valley Road over Sucker Brook | West Brookfield | 2 | MassDOT | No | Yes | 1 | MA36166 | Wickaboag Pond | Impaired | Aquatic Plants (Macrophytes), Turbidity | Phosphorus | | | | | | | | | | | | | | | | 09/18/15 |
| 606372 | Bridge | WAREHAM- BRIDGE REPLACEMENT, W-06-002, PAPER MILL ROAD OVER THE WEWEANTIC RIVER | Paper Mill Road | Wareham | 5 | MassDOT | Yes | Yes | 1 | MA95-04 | Weweantic River | Not Impaired | N/A | N/A | | | | | | | | | | | | | | | | 05/28/15 |
| 607851 | Other | DISTRICT 3 - DEMONLITION OF LEGACY TOLL PLAZAS ALONG I-90, TOLL PLAZA NO. 13 IN FRAMINGHAM, MA. | I-90 | Framingham, MA | 3 | MassDOT | No | Yes | 3 | MA82A-22 | Unnamed Tributary | Impaired | Aquatic Macroinvertebrate Bioassessments, Nutrient/Eutrophication Biological Indicators | N/A | MA82020 | Lake Cochituate | Impaired | (Eurasian Water Milfoil, Myriophyllum spicatum*), Oxygen, Dissolved, PCB in Fish Tissue | N/A | MA82125 | Lake Cochituate | Impaired | (Eurasian Water Milfoil, Myriophyllum spicatum*), (Non-Native Aquatic Plants*), Enterococcus, Oxygen, Dissolved, PCB in Fish Tissue | N/A | | | | | | 04/20/15 |
| 607392 | Other | SEEKONK - INTERSECTION IMPROVEMENTS & RELATED WORK AT FALL RIVER AVENUE (ROUTE 114A) AND COUNTY STREET | FALL RIVER AVENUE (ROUTE 114A), COUNTY STREET | TOWN OF SEEKONK | 5 | MassDOT | Yes | Yes | 1 | MA53-01 | Runnins River | Impaired | (Debris/Floatables/Trash*), Aquatic Macroinvertebrate Bioassessments, Fecal Coliform, Mercury in Fish Tissue, Nutrient/Eutrophication Biological Indicators, Oil and Grease, Oxygen, Dissolved | Bacteria/Pathogens | | | | | | | | | | | | | | | | 12/17/14 |
| 606912 | Highway Reconstruction | WORTHINGTON - RECONSTRUCTION & RELATED WORK ON ROUTE 143 | Route 143 (Old North Road and Williamsburg Road) | Worthington | 1 | Municipality | No | No | 3 | MA32-02 | Middle Branch Westfield River | Not Impaired | N/A | N/A | MA32-13 | West Falls Branch | Not Impaired | N/A | N/A | MA32-15 | Wards Stream | Not Impaired | N/A | N/A | | | | | | 04/06/15 |
| 604699 | Highway Reconstruction | STERLING - INTERSECTION IMPROVEMENTS AT ROUTE 12 AND CHOCKSETT ROAD | Route 12, Chocksett Road | Sterling | 3 | MassDOT | No | No | 1 | MA81008 | Bartlett Pond | Impaired | Escherichia coli | N/A | | | | | | | | | | | | | | | | 11/14/14 |
| 607922 | Bridge | BRIDGE L-06-017 RAWSON STREET OVER CEDAR MEADOW POND INLET BRIDGE REPLACEMENT PROJECT | Rawson Road | Leicester | 3 | MassDOT | Yes | Yes | 1 | MA42009 | Cedar Meadow Pond | Impaired | (Non-Native Aquatic Plants*), Aquatic Plants (Macrophytes) | Phosphorus | | | | | | | | | | | | | | | | 06/12/15 |
| 607251 | Other | WESTFORD - INTERSECTION AND SIGNAL IMPORVEMENTS @ ROUTE 110 AND TADMUCK ROAD | Route 110 and Tadmuck Road | Westford | 3 | Municipality | No | Yes | 0 | | | | | N/A | | | | | | | | | | | | | | | | 06/08/15 |
| 606548 | Bridge | GREENFIELD - SUPERSTRUCTURE REPLACEMENT, G-12-052 (0XR) & G-12-053 (0XT), I-91 (NB & SB) OVER BMRR | I-91 NB, I-91SB | Greenfield | 2 | MassDOT | No | No | 1 | MA33-30 | Green River | Impaired | Fecal Coliform | N/A | | | | | | | | | | | | | | | | 02/17/15 |
| 608041 | Highway Reconstruction | WEST BOYLSTON - STORMWATER IMPROVEMENTS ON BEAMAN STREET (ROUTE 140) AT THE WACHUSETT RESERVOIR | Beaman Street / Route 140 | West Boylston | 3 | Other Agency | Yes | Yes | 1 | MA81147 | Wachusett Reservoir | Impaired | (Eurasian Water Milfoil, Myriophyllum spicatum*), (Non-Native Aquatic Plants*), Mercury in Fish Tissue | N/A | | | | | | | | | | | | | | | | 12/19/14 |
| 607852 | Other | DISTRICT 6 - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90, TOLL PLAZA NO. 30 (SUMNER TUNNEL), BOSTON, MA | I-90 | Boston, MA | 6 | MassDOT | No | Yes | 1 | MA70-02 | Boston Inner Harbor | Impaired | Enterococcus, Fecal Coliform, Other, Oxygen, Dissolved, PCB in Fish Tissue | Bacteria/Pathogens | | | | | | | | | | | | | | | | 06/05/15 |

# 25% Submissions

| Project Number | Project Type | Project Name | Project Road | Location | District | Final Ownership | SW into outside Organization | Project located in WS with TMDL | No. of 303d list Waterbodies that receive runoff | WBID #1 | WB #1 Name | WB #1 Status | Impairments | WB #1 Final TMDL | WBID #2 | WB #2 Name | WB #2 Status | WB #2 Impairments | WB #2 TMDL | WBID #3 | WB #3 Name | WB #3 Status | WB #3 Impairments | WB #3 TMDL | WBID #4 | WB #4 Name | WB #4 Status | WB #4 Impairme | WB #4 TMDL | Date Submitted to MassDOT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 607745 | Highway Reconstruction | INTERSECTION AND SIGNAL IMPROVEMENTS | Intersection Route 7&20@Walker Street | Lenox | 1 | MassDOT | No | No | 1 | MA21057 | Laurel Lake | Impaired | (Eurasian Water Milfoil, Myriophyllum spicatum*), (Non-Native Aquatic Plants*), (Zebra mussel, Dreissena polymorph*), Dissolved oxygen saturation, Oxygen, Dissolved, Phosphorus (Total) | N/A | | | | | | | | | | | | | | | 03/12/15 |
| 604732 | Bridge | HUDSON BRIDGE REPLACEMENT, H-25-003, STATE RTE 85 (WASHINGTON ST.) OVER THE ASSABET RIVER | State Rte 85 (Washington St.) | Hudson | 3 | MassDOT | No | Yes | 1 | MA82B-04 | Assabet River | Impaired | Aquatic Macroinvertebrate Bioassessments, Aquatic Plants (Macrophytes), Excess Algal Growth, Fecal Coliform, Fishes Bioassessments, Oxygen, Dissolved, Phosphorus (Total) | Bacteria/Pathogens, Phosphorus | | | | | | | | | | | | | | | 06/24/15 |
| 607573 | Highway Reconstruction | HAVERHILL-RECONSTRUCTION ON ROUTE 97 (BROADWAY), FROM SILVER BIRCH LANE TO RESEARCH DRIVE | Route 97 (Broadway) | Haverhill | 4 | Municipality | Yes | Yes | 1 | MA84A-37 | Creek Brook | Impaired | Escherichia coli | N/A | | | | | | | | | | | | | | | | 05/01/15 |
| 607581 | Other | DISTRICT 3 - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90, PLAZA NO. 9 IN STURBRIDGE, MA | I-90 | Statewide | 3 | MassDOT | No | No | 1 | MA41052 | Walker Pond | Impairment Not Caused By Pollutant | (Non-Native Aquatic Plants*) | N/A | | | | | | | | | | | | | | | | 02/12/15 |
| 607581 | Other | DISTRICT 3 - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90, TOLL PLAZA NO. 10A IN MILLBURY, MA | I-90 | Statewide/Millbury, MA | 3 | MassDOT | No | Yes | 1 | MA51-03 | Blackstone River | Impaired | (Debris/Floatables/Trash*), (Other flow regime alterations*), (Physical substrate habitat alterations*), Ambient Bioassays -- Chronic Aquatic Toxicity, Aquatic Macroinvertebrate Bioassessments, Escherichia coli, Excess Algal Growth, Fishes Bioassessments, Foam/Flocs/Scum/Oil Slicks, Lead, Nutrient/Eutrophication Biological Indicators, Other, Oxygen, Dissolved, Phosphorus (Total), Sedimentation/Siltation, Taste and Odor, Turbidity | Bacteria/Pathogens | | | | | | | | | | | | | | | | 02/13/15 |
| 607851 | Other | DISTRICT 3 - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90, TOLL PLAZA NO. 12 IN FRAMINGHAM, MA | I-90 | Framingham, MA | 3 | MassDOT | No | No | 1 | MA82046 | Framingham Reservoir #3 | Impairment Not Caused By Pollutant | (Eurasian Water Milfoil, Myriophyllum spicatum*) | N/A | | | | | | | | | | | | | | | | 04/20/15 |
| 607852 | Other | DISTRICT 6 - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90, TOLL PLAZA NO. 37 (TED WILLIAMS TUNNELL/LOGAN AIRPORT), EAST BOSTON, MA | I-90 | Boston, MA | 6 | MassDOT | No | Yes | 1 | MA70-02 | Boston Inner Harbor | Impaired | Enterococcus, Fecal Coliform, Other, Oxygen, Dissolved, PCB in Fish Tissue | Bacteria/Pathogens | | | | | | | | | | | | | | | | 04/20/15 |
| 606895 | Intersection | GRANBY INTERSECTION IMPROVEMENTS @ 2 LOCATIONS ON ROUTE 202: SCHOOL STREET & FIVE CORNERS | East State Street, School Street | Granby | 2 | MassDOT | No | No | 1 | MA34024 | Forge Pond | Impaired | (Non-Native Aquatic Plants*), Nutrient/Eutrophication Biological Indicators | N/A | | | | | | | | | | | | | | | | 01/23/15 |
| 606895 | Intersection | GRANBY INTERSECTION IMPROVEMENTS @ 2 LOCATIONS ON ROUTE 202: SCHOOL STREET & FIVE CORNERS | West State Street, Pleasant Street, Amherst Street | Granby | 2 | MassDOT | No | No | 1 | MA34-19 | Stony Brook | Impaired | (Non-Native Aquatic Plants*), Escherichia coli, Turbidity | N/A | | | | | | | | | | | | | | | | 01/23/15 |

# 25% Submissions

| Project Number | Project Type | Project Name | Project Road | Location | District | Final Ownership | SW into outside Organization | Project located in WS with TMDL | No. of 303d list Waterbodies that receive runoff | WBID #1 | WB #1 Name | WB #1 Status | Impairments | WB #1 Final TMDL | WBID #2 | WB #2 Name | WB #2 Status | WB #2 Impairments | WB #2 TMDL | WBID #3 | WB #3 Name | WB #3 Status | WB #3 Impairments | WB #3 TMDL | WBID #4 | WB #4 Name | WB #4 Status | WB #4 Impairme | WB #4 TMDL | Date Submitted to MassDOT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 607901 | Highway Reconstruction | DEDHAM - PEDESTRIAN IMPROVEMENTS ALONG ELM STREET & RUSTCRAFT ROAD CORRIDORS | Elm Street, Rustcraft Road | Dedham | 6 | Municipality | Yes | Yes | 1 | MA72-07 | Charles River | Impaired | (Fish-Passage Barrier*), (Non-Native Aquatic Plants*), (Other flow regime alterations*), DDT, Escherichia coli, (Eurasian Water Milfoil, Myriophyllum spicatum*), Fishes Bioassessments, Nutrient/Eutrophication Biological Indicators, PCB in Fish Tissue, Phosphorus (Total) | Bacteria/Pathogens, Phosphorus | | | | | | | | | | | | | | | | 03/27/15 |
| 607899 | Highway Reconstruction | DEDHAM - PEDESTRIAN IMPROVEMENTS ALONG BUSSEY STREET | Bussey Street | Dedham | 6 | Municipality | Yes | Yes | 1 | MA73-28 | Mother Brook | Impaired | (Low flow alterations*), Color, DDT, Escherichia coli, Fecal Coliform, Mercury in Fish Tissue, Oxygen, Dissolved, PCB in Fish Tissue, Phosphorus (Total), Taste and Odor | Bacteria/Pathogens | | | | | | | | | | | | | | | | 03/27/15 |
| 606036 | Intersection | BROCKTON- TRAFFIC SIGNAL AND INTERSECTION IMPROVEMENTS AT ROUTE 123 (BELMONT STREET)/LINWOOD STREET/LORRAINE AVENUE | Route 123 (Belmont Street), Linwood Street, Lorraine Avenue | Brockton | 5 | MassDOT | No | Yes | 2 | MA62-22 | Coweeset Brook | Not Impaired | N/A | N/A | MA62208 | West Meadow Pond | Impairment Not Caused By Pollutant | (Non-Native Aquatic Plants*) | N/A | | | | | | | | | | | 08/05/15 |
| 607581 | Other | DISTRICT 6 - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90, TOLL PLAZA #14, AND #15/#55 IN WESTON, MA | I-90 | Weston | 6 | MassDOT | No | Yes | 1 | MA72-07 | Charles River | Impaired | (Fish-Passage Barrier*), (Non-Native Aquatic Plants*), (Other flow regime alterations*), DDT, Escherichia coli, (Eurasian Water Milfoil, Myriophyllum spicatum*), Fishes Bioassessments, Nutrient/Eutrophication Biological Indicators, PCB in Fish Tissue, Phosphorus (Total) | Bacteria/Pathogens, Phosphorus | | | | | | | | | | | | | | | | 06/10/15 |
| 607960 | Intersection | ASHBURNHAM-INTERSECTION IMPROVEMENTS AT ROUTE 101 & WILLIAMS & COREY HILL ROAD | ROUTE 101, WILLIAMS ROAD, COREY HILL ROAD | ASHBURNHAM | 3 | Municipality | Yes | Yes | 4 | MA81-11 | Whitman River | Not Impaired | N/A | N/A | MA81109 | Whitmanville Reservoir | Not Impaired | N/A | N/A | MA81025 | Crocker Pond | Not Impaired | N/A | N/A | MA81-12 | Phillips Brook | Not Impaired | N/A | N/A | 07/20/15 |
| 608036 | Intersection | WESTFORD - INTERSECTION IMPROVEMENTS @ GROTON ROAD (ROUTE 40) & OAK HILL ROAD | GROTON ROAD (ROUTE 40) & OAK HILL ROAD | WESTFORD | 3 | Municipality | Yes | Yes | 1 | MA84B-04 | Stony Brook | Impaired | Aquatic Macroinvertebrate Bioassessments, Escherichia coli | Bacteria/Pathogens | | | | | | | | | | | | | | | | 04/28/15 |
| 607582 | Other | DISTRICT 6 - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90, TOLL PLAZAS #18, #19, AND #20 IN ALLSTON BRIGHTON/BOSTON, MA | I-90 | Boston | 6 | MassDOT | No | Yes | 2 | MA72-36 | Charles River | Impaired | (Fish-Passage Barrier*), (Non-Native Aquatic Plants*), (Other flow regime alterations*), Other, Chlorophyll-a, DDT, Escherichia coli, Fishes Bioassessments, Nutrient/Eutrophication Biological Indicators, Oil and Grease, Oxygen, Dissolved, PCB in Fish Tissue, pH, High, Phosphorus (Total), Secchi disk transparency, Sediment Bioassays -- Acute Toxicity Freshwater | Bacteria/Pathogens, Phosphorus | MA72-38 | Charles River | Impaired | (Other flow regime alterations*), Salinity, Sediment Screening Value (Exceedance), Chlorophyll-a, Combined Biota/Habitat Bioassessments, DDT, Dissolved oxygen saturation, Escherichia coli, | Phosphorus | | | | | | | | | | 06/11/15 |
| 607582 | Other | DISTRICT 6 - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90, TOLL PLAZA NO. 30 (SUMNER TUNNEL), BOSTON, MA | I-90 | Boston, MA | 6 | MassDOT | No | Yes | 1 | MA70-02 | Boston Inner Harbor | Impaired | Enterococcus, Fecal Coliform, Other, Oxygen, Dissolved, PCB in Fish Tissue | Bacteria/Pathogens | | | | | | | | | | | | | | | | 06/05/15 |

# 25% Submissions

| Project Number | Project Type | Project Name | Project Road | Location | District | Final Ownership | SW into outside Organization | Project located in WS with TMDL | No. of 303d list Waterbodies that receive runoff | WBID #1 | WB #1 Name | WB #1 Status | Impairments | WB #1 Final TMDL | WBID #2 | WB #2 Name | WB #2 Status | WB #2 Impairments | WB #2 TMDL | WBID #3 | WB #3 Name | WB #3 Status | WB #3 Impairments | WB #3 TMDL | WBID #4 | WB #4 Name | WB #4 Status | WB #4 Impairme | WB #4 TMDL | Date Submitted to MassDOT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 606507 | Highway Reconstruction | HIGHWAY RECONSTRUCTION AND TRAFFIC CALMING ON ROUTE 2 ADJACENT TO THE DEERFIELD RIVER, OVER RICE BROOK C-05-018 AND MILL BROOK C-05-011 | Route 2 | Charlemont | 1 | MassDOT | No | No | 2 | MA33-02 | Deerfield River | Not Impaired | N/A | N/A | MA33-14 | Mill Brook | Not Impaired | N/A | N/A | | | | | | | | | | | 07/08/14 |
| 606303 | Bridge | RUTLAND - BRIDGE REPLACEMENT, R-14-004, INTERVALE ROAD OVER EAST BRANCH OF WARE RIVER | Intervale Road | Rutland | 3 | MassDOT | No | No | 2 | MA36-01 | East Branch Ware River | Impaired | Oxygen, Dissolved | N/A | MA36-27 | Ware River | Impaired | Oxygen, Dissolved, Temperature, water | N/A | | | | | | | | | | | 08/14/15 |
| 607529 | Bridge | WINCHENDON - BRIDGE REPLACEMENT, W-39-015, NORTH ROYALSTON ROAD OVER WEST BRANCH MILLERS RIVER | North Royalston Road | Winchendon | 2 | MassDOT | No | No | 1 | MA35-01 | Millers River | Impaired | Ambient Bioassays -- Chronic Aquatic Toxicity, Fecal Coliform, PCB in Fish Tissue, Phosphorus (Total) | N/A | | | | | | | | | | | | | | | | | 08/14/15 |
| 607524 | Bridge | BRIDGE DEMOLITION OF W-07-012, OLD BOSTON POST ROAD OVER NAULTAUG BROOK | Old Boston Post Road | Warren, Connecticut | 2 | MassDOT | No | No | 0 | | | | | N/A | | | | | | | | | | | | | | | | 04/15/15 |
| 607971 | Other | DISTRICT 1 - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90 | I-90 | Statewide | 3 | MassDOT | No | No | 2 | MA21-06 | Williams River | Not Impaired | N/A | N/A | MA21015 | Card Pond | Not Impaired | N/A | N/A | | | | | | | | | | | 12/07/15 |
| 604531 | Other | ACTON- MAYNARD-ASSABET RIVER RAIL TRAIL CONSTRUCTION, INCLUDES BRIDGES, A-02-042 & M-10-012, A-02-034 & MPB WALL | Old Rail Bed | Maynard, Acton | 3 | Municipality | Yes | Yes | 3 | MA82B-08 | Taylor Brook | Not Impaired | N/A | N/A | MA82B-05 | Assabet River | Impaired | (Debris/Floatables/Trash*), (Non-Native Aquatic Plants*), Aquatic Plants (Macrophytes), Excess Algal Growth, Fecal Coliform, Nutrient/Eutrophication Biological Indicators, Oxygen, Dissolved, Phosphorus (Total), Taste and | Bacteria/Pathogens, Phosphorus | MA82B-13 | Fort Pond Brook | Not Impaired | N/A | N/A | | | | | | 04/17/15 |
| 607116 | Bridge | FLORIDA- BRIDGE REPLACEMENT, F-05-002, SOUTH COUNTY ROAD OVER THE COLD RIVER. THIS PROJECT WILL REPLACE THE STRUCTURE CARRYING SOUTH COUNTY ROAD OVER THE COLD RIVER. | South County Road | Florida | 1 | MassDOT | No | No | 0 | | | | | N/A | | | | | | | | | | | | | | | | 10/15/15 |
| 603449 | Highway Reconstruction | WESTFIELD - ROUTE 20 ACCESS IMPROVEMENTS ON COURT STREET & WESTERN AVENUE, FROM LLEWELLYN DRIVE EASTERLY TO LLOYDS HILL ROAD (PHASE I) | Western Avenue & Lloyds Hill Road | Westfield | 2 | Municipality | Yes | No | 1 | MA32-05 | Westfield River | Impaired | Aquatic Macroinvertebrate Bioassessments, Excess Algal Growth, Taste and Odor, Turbidity | N/A | | | | | | | | | | | | | | | | | 11/20/14 |

# 25% Submissions

| Project Number | Project Type | Project Name | Project Road | Location | District | Final Ownership | SW into outside Organization | Project located in WS with TMDL | No. of 303d list Waterbodies that receive runoff | WBID #1 | WB #1 Name | WB #1 Status | Impairments | WB #1 Final TMDL | WBID #2 | WB #2 Name | WB #2 Status | WB #2 Impairments | WB #2 TMDL | WBID #3 | WB #3 Name | WB #3 Status | WB #3 Impairments | WB #3 TMDL | WBID #4 | WB #4 Name | WB #4 Status | WB #4 Impair me | WB #4 TMDL | Date Submitted to MassDOT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 607900 | Intersection | PITTSFIELD- TRAFFIC SIGNAL AND INTERSECTION IMPROVEMENTS AT CENTER STREET AND WEST HOUSATONIC STREET (ROUTE 20) | West Housatonic, Center Street, Elizabeth Street | Pittsfield | 1 | Municipality | Yes | No | 1 | MA21-18 | West Branch Housatonic River | Impaired | Combined Biota/Habitat Bioassessments, (Debris/Floatables/Trash*), Fecal Coliform, Polychlorinated biphenyls, Taste and Odor | N/A | | | | | | | | | | | | | | | | 09/25/15 |
| 605679 | Intersection | INTERSECTION IMPROVEMENTS AT COUNTY STREET (ROUTE 140) AND HART STREET | County Street (Route 140), Hart Street | Taunton | 5 | Municipality | No | Yes | 1 | MA62-03 | Taunton River | Impaired | Fecal Coliform, Oxygen, Dissolved | Bacteria/Pathogens | | | | | | | | | | | | | | | | 08/14/15 |
| 605350 | Bridge | BRIDGE REPLACEMENT | Summit Hill Road over CSX R.R | Washington | 1 | MassDOT | Yes | No | 1 | MA32-17 | Depot Brook | Not Impaired | N/A | N/A | | | | | | | | | | | | | | | | 07/29/15 |
| 606910 | Highway Reconstruction | NEW BEDFORD - CORRIDOR IMPROVEMENTS AND RELATED WORK ON COGGESHALL STREET, FROM PURCHASE STREET TO MITCHELL AVENUE | Coggeshall Street, from Purchase Street to Mitchell Avenue | City of New Bedford | 5 | MassDOT | Yes | Yes | 2 | MA95-33 | Acushnet River | Impaired | (Debris/Floatables/Trash*), Color, Fecal Coliform, Nitrogen (Total), Oil and Grease, Other, Oxygen, Dissolved, Polychlorinated biphenyls, Taste and Odor | Bacteria/Pathogens | MA95-42 | New Bedford Inner Harbor | Impaired | (Debris/Floatables/Trash*), Fecal Coliform, Nitrogen (Total), Oil and Grease, Other, Oxygen, Dissolved, PCB in Fish Tissue, Polychlorinated biphenyls, Taste and Odor | Bacteria/Pathogens | | | | | | | | | | 10/30/15 |
| 601368 | Highway Reconstruction | RESURFACING & RELATED WORK ON ROUTE 122 (GRAFTON STREET) FROM WASHINGTON SQUARE TO RICE SQUARE (1.4 MILES) | Grafton Street, Hamilton Street, Winter Street, Acton Street, Massasoit Road | Worcester | 3 | Municipality | Yes | Yes | 1 | MA51-08 | Unnamed Tributary | Impaired | (Debris/Floatables/Trash*), (Physical substrate habitat alterations*), Ammonia (Un-ionized), Aquatic Plants (Macrophytes), Fecal Coliform, Foam/Flocs/Scum/Oil Slicks, Nutrient/Eutrophication Biological Indicators, Other, Sedimentation/Siltation, Taste and Odor, Turbidity | Bacteria/Pathogens, Phosphorus | | | | | | | | | | | | | | | | 11/12/15 |
| 607860 | Intersection | WHITMAN- TRAFFIC SIGNAL IMPROVEMENTS & RELATED WORK ON BEDFORD STREET (ROUTE 18) AT 2 LOCATIONS: AUBURN STREET (ROUTE 14) & TEMPLE STREET (ROUTE 27) | Bedford Street (Route 18), Auburn Street (Route 14), and Temple Street (Route 27) | Town of Whitman | 5 | MassDOT | Yes | Yes | 1 | MA62-38 | Meadow Brook | Impaired | Fecal Coliform | Bacteria/Pathogens | | | | | | | | | | | | | | | | 11/04/15 |
| 605328 | Bridge | RAYNHAM- BRIDGE REPLACEMENT, R-02-013 (3PA), US 44 (CAPE HIGHWAY) OVER SR 24 | US 44 (Cape Highway) over SR 24 | Raynham | 5 | MassDOT | No | Yes | 1 | MA62-02 | Taunton River | Impaired | Fecal Coliform | Bacteria/Pathogens | | | | | | | | | | | | | | | | 10/20/15 |
| 607987 | Highway Reconstruction | INTERSECTION IMPROVEMENTS @ MAIN STREET, WEST STREET, NORTH STREET, SOUTH STREET & CHURCH STREET | Main Street (Rt. 9), North Street, West Street, South Street / Church Street | Ware | 2 | Municipality | Yes | No | 1 | MA21-20 | Housatonic River | Impaired | PCB in Fish Tissue | N/A | | | | | | | | | | | | | | | | 10/05/15 |
| 607971 | Other | DISTRICT 1 - DEMOLITION OF LEGACY TOLL PLAZAS ALONG I-90 | I-90 | Statewide | 3 | MassDOT | No | No | 1 | MA21-06 | Williams River | Not Impaired | N/A | N/A | | | | | | | | | | | | | | | | 10/30/14 |
| 607537 | Bridge | FALL RIVER- SUPERSTRUCTURE REPLACEMENT. F-02-040, AIRPORT ROAD OVER STATE ROUTE 24 | Airport Road over State Route 24 | Fall River | 5 | MassDOT | Yes | Yes | 1 | MA62-04 | Taunton River | Impaired | Fecal Coliform, Fishes Bioassessments, Oxygen, Dissolved | Bacteria/Pathogens | | | | | | | | | | | | | | | | 01/08/15 |

# 25% Submissions

| Project Number | Project Type | Project Name | Project Road | Location | District | Final Ownership | SW into outside Organization | Project located in WS with TMDL | No. of 303d list Waterbodies that receive runoff | WBID #1 | WB #1 Name | WB #1 Status | Impairments | WB #1 Final TMDL | WBID #2 | WB #2 Name | WB #2 Status | WB #2 Impairments | WB #2 TMDL | WBID #3 | WB #3 Name | WB #3 Status | WB #3 Impairments | WB #3 TMDL | WBID #4 | WB #4 Name | WB #4 Status | WB #4 Impairme | WB #4 TMDL | Date Submitted to MassDOT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 606159 | Highway Reconstruction | NORTH ANDOVER - INTERSECTION AND SIGNAL IMPROVEMENTS AT ROUTE 125 & MASSACHUSETTS AVENUE | Route 125, Massachusetts Avenue | North Andover | 4 | MassDOT | Yes | Yes | 2 | MA83-19 | Shawsheen River | Impaired | Fecal Coliform, Oxygen, Dissolved | Bacteria/Pathogens | MA84A-04 | Merrimack River | Impaired | Escherichia coli, PCB in Fish Tissue, Phosphorus (Total) | Bacteria/Pathogens | | | | | | | | | | | 09/30/15 |
| 606553 | Bridge | STATE ROUTE 3 OVER HIGH STREET & STATE ROUTE 123 (WEBSTER STREET) (BRIDGE NOS. N-24-003 &H-06-010) | Route 3, High Street, Webster Street | Norwell, Hanover | 5 | MassDOT | No | No | 1 | MA94077 | Jacobs Pond | Impairment Not Caused By Pollutant | (Non-Native Aquatic Plants*) | N/A | | | | | | | | | | | | | | | | 11/03/15 |
| 607411 | Highway Reconstruction | TISBURY- BIKE AND PEDESTRIAN IMPROVEMENTS ALONG BEACH ROAD, FROM THE TERMINATION OF THE EXISTING SHARED USE PATH WESTERLY TO THE FIVE CORNERS INTERSECTION | Beach Road | Town of Tisbury | 5 | MassDOT | No | Yes | 2 | MA97-09 | Vineyard Haven Harbor | Impaired | Fecal Coliform | Bacteria/Pathogens | MA97-11 | Lagoon Pond | Impaired | Estuarine Bioassessments, Fecal Coliform | Nitrogen | | | | | | | | | | | 05/15/15 |
| 607755 | Intersection | SIGNAL & INTERSECTION IMPROVEMENTS AT ROUTE 202 (GRANBY ROAD) & ROUTE 33 (LYMAN STREET) | Route 202 (Granby Road) & Route 33 (Lyman Street) | South Hadely | 2 | MassDOT | No | No | 2 | MA34040 | Leaping Well Reservoir | Impaired | (Non-Native Aquatic Plants*), Excess Algal Growth | N/A | MA34-42 | Buttery Brook | Impaired | Escherichia coli | N/A | | | | | | | | | | | 01/08/16 |
| 607524 | Bridge | BRIDGE DEMOLITION OF W-07-012, OLD BOSTON POST ROAD OVER NAULTAUG BROOK | Old Boston Post Road | Warren | 2 | MassDOT | No | No | 0 | | | | | N/A | | | | | | | | | | | | | | | 04/15/15 |
| 608228 | Highway Reconstruction | FRAMINGHAM- RECONSTRUCTION OF UNION AVENUE, FROM PROCTOR STREET TO MAIN STREET | Union Avenue | Framingham | 3 | Municipality | Yes | Yes | 3 | MA82A-26 | Sudbury River | Impaired | Aquatic Macroinvertebrate Bioassessments, Mercury in Fish Tissue | N/A | MA82069 | Learned Pond | Not Impaired | N/A | N/A | MA82035 | Farm Pond | Impaired | (Eurasian Water Milfoil, Myriophyllum spicatum*), (Non-Native Aquatic Plants*), Excess Algal Growth, Turbidity | N/A | | | | | | 09/11/15 |
| 608252 | Bridge | LUDLOW - WILBRAHAM - BRIDGE REHABILITATION, L-16-002=W-35-002, EAST ST OVER CHICOPEE RIVER | East Street and Red Bridge Road over Chicopee River | Town of Wilbraham and Town of Ludlow | 2 | Municipality | No | No | 1 | MA36-23 | Chicopee River | Not Impaired | N/A | N/A | | | | | | | | | | | | | | | | 02/09/16 |
| 607755 | Highway Reconstruction | WEYMOUTH - INTERSECTION IMPROVEMENTS AT 2 LOCATIONS: SR 53 (WASHINGTON STREET) AT MUTTON LANE & PLEASANT STREET | SR 53 (Washington Street), Mutton Lane, Pleasant Street | Weymouth | 6 | MassDOT | No | No | 1 | MA74025 | Whitmans Pond | Impaired | (Non-Native Aquatic Plants*) | N/A | | | | | | | | | | | | | | | | 01/15/16 |
| 608170 | Highway Reconstruction | STURBRIDGE - REHABILITATION & RELATED WORK ON BROOKFILE ROAD (ROUTE 148), FROM MAIN STREET (MM 0.0) TO TOWN LINE (MM 3.4) | Brookfield Road (Route 148) | Sturbridge | 3 | Municipality | Yes | No | 2 | MA41014 | East Brimfield Reservoir | Impaired | (Non-Native Aquatic Plants*), Mercury in Fish Tissue | N/A | MA41-26 | Unnamed Tributary | Not Impaired | N/A | N/A | | | | | | | | | | | 01/28/16 |
| 607036 | Other | DISTRICT 2 - ADA RETROFITS AT VARIOUS LOCATIONS | I-291, I-391, RTE. 5, 9,10, 32, 57, 116, 141, & 116 | Various Municipalities Throughout District 2 | 2 | MassDOT | No | No | 4 | MA34-04 | Connecticut River | Impaired | Escherichia coli, PCB in Fish Tissue | N/A | MA33-27 | West Branch North River | Not Impaired | N/A | N/A | MA36-06 | Ware River | Impaired | Fecal Coliform | N/A | MA36-17 | Quaboag River | Impaired | Escherichia coli | N/A | 02/02/16 |

# 25% Submissions

| Project Number | Project Type | Project Name | Project Road | Location | District | Final Ownership | SW into outside Organization | Project located in WS with TMDL | No. of 303d list Waterbodies that receive runoff | WBID #1 | WB #1 Name | WB #1 Status | Impairments | WB #1 Final TMDL | WBID #2 | WB #2 Name | WB #2 Status | WB #2 Impairments | WB #2 TMDL | WBID #3 | WB #3 Name | WB #3 Status | WB #3 Impairments | WB #3 TMDL | WBID #4 | WB #4 Name | WB #4 Status | WB #4 Impair me | WB #4 TMDL | Date Submitted to MassDOT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 604935 | Highway Reconstruction | WOBURN- RECONSTRUCTION OF MONTVALE AVENUE, FROM I-93 INTERCHANGE TO CENTRAL STREET (APPROX. 1,850 FT) | Montvale Avenue | Woburn | 4 | Municipality | Yes | Yes | 1 | MA71-01 | Aberjona River | Impaired | (Physical substrate habitat alterations*), Ammonia (Un-ionized), Aquatic Macroinvertebrate Bioassessments, Arsenic, Escherichia coli, Oxygen, Dissolved, Phosphorus (Total), Sediment Bioassays -- Chronic Toxicity Freshwater, Turbidity | Bacteria/Pathogens | | | | | | | | | | | | | | | | 06/12/15 |
| 607685 | Bridge | BRIDGE REHABILITATION, B-21-060 & B-21-061 | I-93/Route 128/Route 3 interchange | Braintree | 6 | MassDOT | No | Yes | 1 | MA74-09 | Town Brook | Impaired | (Other flow regime alterations*), (Physical substrate habitat alterations*), Aquatic Macroinvertebrate Bioassessments, Fecal Coliform | Bacteria/Pathogens | | | | | | | | | | | | | | | | 02/02/16 |
| 607337 | Intersection | PEMBROKE- INTERSECTION IMPROVEMENTS AND RELATED WORK AT WASHINGTON STREET (ROUTE 53) AND PLEASANT STREET | Washington Street (Route 53), Pleasant Street | Pembroke | 5 | MassDOT | No | No | 1 | MA94-05 | North River | Impaired | Fecal Coliform, Mercury in Fish Tissue | Bacteria/Pathogens | | | | | | | | | | | | | | | | |
| 603778 | Bridge | LANESBOROUGH - BRIDGE REPLACEMENT, L-03-024, NARRAGANSETT AVENUE OVER PONTOOSUC LAKE | NARRAGANSETT AVENUE | Lanesborough | 1 | Municipality | No | No | 1 | MA21083 | Pontoosuc Lake | Impaired | (Eurasian Water Milfoil, Myriophyllum spicatum*), (Non-Native Aquatic Plants*), DDT, Mercury in Fish Tissue | N/A | | | | | | | | | | | | | | | | 01/15/16 |
| 607217 | Highway Reconstruction | EASTON- CORRIDOR IMPROVEMENTS ON DEPOT STREET (ROUTE 123), FROM NEWELL CIRCLE TO WASHINGTON STREET (ROUTE 138) | Depot Street (Route 123) | Easton | 5 | Municipality | Yes | Yes | 2 | MA62-21 | Queset Brook | Not Impaired | N/A | N/A | MA62106 | Little Cedar Swamp | Not Impaired | N/A | N/A | | | | | | | | | | 10/10/14 |
| 608169 | Highway Reconstruction | DUDLEY- REHABILITATION & RELATED WORK ON DRESSER HILL ROAD (ROUTE 31), FROM STATE LINE (MM 0.0) TO TOWN LINE (MM 4.1) | DRESSER HILL ROAD (ROUTE 31) | DUDLEY | 3 | Municipality | No | No | 0 | | | | | N/A | | | | | | | | | | | | | | | | 12/11/15 |
| 607732 | Other | NATICK-COCHITUATE RAIL-TRAIL CONSTRUCTION | N/A | Natick | 3 | Municipality | No | Yes | 3 | MA82125 | Lake Cochituate | Impaired | (Eurasian Water Milfoil, Myriophyllum spicatum*), (Non-Native Aquatic Plants*), Enterococcus, Oxygen, Dissolved, PCB in Fish Tissue | N/A | MA82126 | Lake Cochituate | Impaired | (Eurasian Water Milfoil, Myriophyllum spicatum*), (Non-Native Aquatic Plants*), PCB in Fish Tissue | N/A | MA82127 | Lake Cochituate | Impaired | (Eurasian Water Milfoil, Myriophyllum spicatum*), (Non-Native Aquatic Plants*), Oxygen, Dissolved, PCB in Fish Tissue | N/A | | | | | | 07/31/15 |
| 607524 | Bridge | BRIDGE DEMOLITION OF W-07-012, OLD BOSTON POST ROAD OVER NAULTAUG BROOK | Old Boston Post Road | Warren, Connecticut | 2 | MassDOT | No | No | 0 | | | | | N/A | | | | | | | | | | | | | | | | 04/15/15 |
| 607118 | Bridge | HEATH- BRIDGE REPLACEMENT- H-14-009, SADOGA ROAD OVER BURRINGTON BROOK | Sadoga Road | Heath | 1 | Municipality | No | No | 1 | MA33-27 | West Branch North River | Not Impaired | N/A | N/A | | | | | | | | | | | | | | | | 04/17/15 |
| 607524 | Bridge | DEMOLITION OF BRIDGE NO. B-05-023, WILSON STREET OVER NEW ENGLAND CENTRAL RAILROAD. | Wilson Street | Belchertown, Massachusetts | 2 | MassDOT | No | No | 0 | | | | | N/A | | | | | | | | | | | | | | | | 04/15/15 |

# 25% Submissions

| Project Number | Project Type | Project Name | Project Road | Location | District | Final Ownership | SW into outside Organization | Project located in WS with TMDL | No. of 303d list Waterbodies that receive runoff | WBID #1 | WB #1 Name | WB #1 Status | Impairments | WB #1 Final TMDL | WBID #2 | WB #2 Name | WB #2 Status | WB #2 Impairments | WB #2 TMDL | WBID #3 | WB #3 Name | WB #3 Status | WB #3 Impairments | WB #3 TMDL | WBID #4 | WB #4 Name | WB #4 Status | WB #4 Impair me | WB #4 TMDL | Date Submitted to MassDOT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 604952 | Bridge | LYNN-SAUGUS-BRIDGE REPLACEMENT, L-18-016=S-05-008, ROUTE 107 OVER THE SAUGUS RIVER (AKA - BELDEN G. BLY BRIDGE) | Route 107 | Lynn and Saugus | 4 | MassDOT | Yes | Yes | 1 | MA93-44 | Saugus River | Impaired | (Other flow regime alterations*), Fecal Coliform, Oil and Grease, Temperature, water | Bacteria/Pathogens | | | | | | | | | | | | | | | 02/13/15 |
| 605189 | Other | CONCORD- BRUCE FREEMAN RAIL TRAIL CONSTRUCTION, FROM COMMONWEALTH AVENUE TO POWDER MILL ROAD, INCLUDES 2 RAILROAD BRIDGES & 1 CULVERT (PHASE II-C) | Abandoned Rail Corridor | Concord | 4 | Municipality | Yes | Yes | 3 | MA82B-07 | Assabet River | Impaired | Fecal Coliform, Phosphorus (Total) | Bacteria/Pathogens, Phosphorus | MA82A-04 | Sudbury River | Impaired | (Non-Native Aquatic Plants*), Mercury in Fish Tissue | N/A | MA82118 | White Pond | Not Impaired | N/A | N/A | | | | | | 06/12/15 |
| 608000 | Highway Reconstruction | BEDFORD-IMPROVEMENTS AT JOHN GLENN MIDDLE (SRTS) | Great Road, Mudge Way | Bedford | 4 | Municipality | Yes | Yes | 2 | MA83-05 | Elm Brook | Impaired | (Physical substrate habitat alterations*), Fecal Coliform, Turbidity | Bacteria/Pathogens | MA83-17 | Shawsheen River | Impaired | Fecal Coliform, Oxygen, Dissolved | Bacteria/Pathogens | | | | | | | | | | 10/27/15 |
| 608207 | Highway Maintenance | LONGMEADOW, SPRINGFIELD - I-91 PAVEMENT PRESERVATION | Interstate I-91 in Longmeadow and Springfield MA and associated Ramps | Longmeadow and Springfield | 2 | MassDOT | Yes | Yes | 4 | MA34-20 | Cooley Brook | Not Impaired | N/A | N/A | MA34-05 | Connecticut River | Impaired | Escherichia coli, PCB in Fish Tissue, Total Suspended Solids (TSS) | N/A | MA34-29 | Mill River | Impaired | Escherichia coli | N/A | MA34-21 | Longmeadow Brook | Not Impaired | N/A | N/A | 11/05/15 |
| 608022 | Resurfacing | BRIMFIELD-STURBRIDGE-RESURFACING & RELATED WORK ON ROUTE 20, FROM EAST OF NEW HOLLAND ROAD IN BRIMFIELD (MM 87.8) ENDING WEST OF GALILEO DRIVE IN STURBRIDGE (MM 91.9) | Route 20 | Town of Brimfield, Town of Sturbridge | 2 | MassDOT | No | No | 2 | MA41-27 | Unnamed Tributary | Not Impaired | N/A | N/A | MA41014 | East Brimfield Reservoir | Impaired | (Non-Native Aquatic Plants*), Mercury in Fish Tissue | N/A | | | | | | | | | | | 04/28/15 |
| 607671 | Bridge | HEATH - BRIDGE REPLACEMENT, H-14-001, SR 8A (JACKSONVILLE STREET) OVER MILL BROOK | SR 8A (Jacksonville Stage Road) | Heath | 1 | Municipality | No | No | 1 | MA33-14 | Mill Brook | Not Impaired | N/A | N/A | | | | | | | | | | | | | | | | 10/01/15 |
| 606189 | Intersection | LOWELL-IMPROVEMENTS ON ROUTE 38 AT FOUR INTERSECTIONS INCLUDING SIGNALS. | Rogers St, Nesmith St, Chestnut St, E. Merrimack St, Stackpole St, Andover St | Lowell | 4 | Municipality | Yes | Yes | 2 | MA82A-09 | Concord River | Impaired | (Debris/Floatables/Trash*), Excess Algal Growth, Fecal Coliform, Mercury in Fish Tissue, Phosphorus (Total) | Bacteria/Pathogens | MA84A-02 | Merrimack River | Impaired | (Low flow alterations*), Escherichia coli, Mercury in Fish Tissue, Phosphorus (Total) | Bacteria/Pathogens | | | | | | | | | | | 02/26/16 |
| 606780 | Bridge | NEWTON-BRIDGE REHABILITATION, N-12-027 ROUTE 16 (WASHINGTON STREET) OVER I-90, MBTA/CSX | Route 16 (Washington Street) | Newton | 6 | MassDOT | Yes | Yes | 0 | | | | | N/A | | | | | | | | | | | | | | | | 07/01/15 |

# 25% Submissions

| Project Number | Project Type | Project Name | Project Road | Location | District | Final Ownership | SW into outside Organization | Project located in WS with TMDL | No. of 303d list Waterbodies that receive runoff | WBID #1 | WB #1 Name | WB #1 Status | Impairments | WB #1 Final TMDL | WBID #2 | WB #2 Name | WB #2 Status | WB #2 Impairments | WB #2 TMDL | WBID #3 | WB #3 Name | WB #3 Status | WB #3 Impairments | WB #3 TMDL | WBID #4 | WB #4 Name | WB #4 Status | WB #4 Impairme | WB #4 TMDL | Date Submitted to MassDOT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 606527 | Bridge | NEW BEDFORD - SUPERSTRUCTURE REPLACEMENT, N-06-020, I-195 (EB & WB) RAMP C & F OVER SR 18, COUNTY STREET, STATE STREET, CSX RAILROAD, PURCHASE STREET AND WELD STREET | I-195 | New Bedford | 5 | MassDOT | Yes | Yes | 1 | MA95-33 | Acushnet River | Impaired | (Debris/Floatables/Trash*), Color, Fecal Coliform, Nitrogen (Total), Oil and Grease, Other, Oxygen, Dissolved, Polychlorinated biphenyls, Taste and Odor | Bacteria/Pathogens | | | | | | | | | | | | | | | | 02/24/16 |

75% Submissions

# 75% Submissions

| Project Number | Project Type | Project Name | Project Road | Project Towns | District | WPA Filing | Change Impervious | Impacted Impaired Waterbodies | Date Submitted | WBID #1 | WB #1 Name | WB#1 Status | WB #1 BMPs | WB #1 DSCBs | WBID #2 | WB #2 Name | WB #2 Status | WB #2 BMPs | WB #2 DSCBs | WBID #3 | WB #3 Name | WB #3 Status | WB #3 BMPs | WB #3 DSCBs | WBID #4 | WB #4 Name | WB #4 Status | WB #4 BMPs | WB #4 DSCBs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 607121 | Bridge | SAVOY-SUPERSTRUCTURE REPLACEMENT, 2-06-004, RIVER ROAD OVER THE WESTFIELD RIVER | River Road | Savoy | 1 | Bridge Exempt | -161 | TRUE | 3/20/2015 | MA32-04 | Westfield River | Not Impaired | 2 | 2 | | | | | | | | | | | | | | | |
| 604838 | Bridge | WINCHENDON-SUPERSTRUCTURE OR BRIDGE REPLACEMENT, W-39-001, HARRIS ROAD OVER TARBELL BROOK | Harris Road, West Street | Winchendon | 2 | Bridge Exempt | 16,546 | FALSE | 3/17/2015 | MA35-01 | Millers River | Impaired | 0 | 6 | | | | | | | | | | | | | | | |
| 602320 | Bridge | DEERFIELD - BRIDGE REPLACEMENT D-06-023, MCCLELLAND FARM ROAD OVER THE B&M RAILROAD | McClelland Farm Road | Deerfield | 2 | None | 14,549 | FALSE | 3/30/2015 | MA33-04 | Deerfield River | Not Impaired | 1 | 6 | MA34-04 | Connecticut River | Impaired | 0 | 0 | | | | | | | | | | | |
| 604739 | Intersection | WEST BROOKFIELD - RECONSTRUCTION ON ROUTE 9, ROUTE 67 & INTERSECTIONS AT SCHOOL STREET | North Main St (Rte 67), East Main St (Rte 9), Church St, School St | West Brookfield, MA | 3 | None | -3,960 | TRUE | 4/3/2015 | MA36-14 | Quaboag River | Not Impaired | 0 | 16 | MA36166 | Wickaboag Pond | Impaired | 0 | 7 | | | | | | | | | | | |
| 603682 | Bridge | AMESBURY - BRIDGE REPLACEMENT, A-07-026, ROUTE I-495 (NB & SB) OVER THE BIKEWAY (ABANDONED B&M RR LINE) | Interstate 495 | Amesbury | 4 | None | -1,070 | TRUE | 4/17/2015 | MA84A-08 | Powwow River | Impaired | 0 | 2 | | | | | | | | | | | | | | | |
| 602932 | Bridge | LOWELL- BRIDGE REPLACEMENT, L-15-058, VFW HIGHWAY OVER BEAVER BROOK | VFW Highway | Lowell | 4 | Bridge Exempt | 59,398 | FALSE | 6/11/2015 | MA84A-02 | Merrimack River | Impaired | 1 | 25 | | | | | | | | | | | | | | | |
| 604732 | Bridge | HUDSON BRIDGE REPLACEMENT, H-25-003, STATE RTE 85 (WASHINGTON ST.) OVER THE ASSABET RIVER | State Rte 85 (Washington St.) | Husdon | 3 | Bridge Exempt | 1,916 | FALSE | 6/24/2015 | MA82B-04 | Assabet River | Impaired | 0 | 4 | | | | | | | | | | | | | | | |
| 606284 | Highway Reconstruction | BOSTON-BROOKLINE-IMPROVEMENTS TO COMMONWEALTH AVENUE, FROM AMORY STREET TO ALCORN STREET | Commonwealth Ave | Boston, Brookline | 6 | None | 0 | FALSE | 7/1/2015 | MA72-38 | Charles River | Impaired | 6 | 61 | | | | | | | | | | | | | | | |
| 606346 | Other | LEICESTER- RESURFACING & RELATED WORK ON ROUTE 56 (PAXTON STREET), FROM MAIN STREET TO HYLAND AVENUE | Paxton Street (Route 56) From Main Street to Hyland Avenue | Town of Leicester | 3 | NOI | 10,303 | TRUE | 6/25/2015 | MA42025 | Henshaw Pond | Not Impaired | 1 | 30 | | | | | | | | | | | | | | | |
| 606036 | Intersection | BROCKTON - TRAFFIC SIGNAL AND INTERSECTION IMPROVEMENTS AT ROUTE 123 (BELMONT STREET) / LINWOOD STREET / LORRAINE AVENUE | Route 123 (Belmont Street), Linwood Street, Lorraine Avenue | Brockton | 5 | None | 18,600 | FALSE | 8/5/2015 | MA62-22 | Coweeset Brook | Not Impaired | 0 | 20 | MA62208 | West Meadow Pond | Impairment Not Caused By Pollutant | 0 | 6 | | | | | | | | | | | |
| 607524 | Bridge | BRIDGE DEMOLITION OF W-07-012, OLD BOSTON POST ROAD OVER NAULTAUG BROOK | Old Boston Post Road | Warren | 2 | None | -1,819 | TRUE | 11/18/2015 | ma36-15 | Quaboag River | Not Impaired | 0 | 0 | | | | | | | | | | | | | | | |
| 605189 | Other | CONCORD- BRUCE FREEMAN RAIL TRAIL CONSTRUCTION, FROM COMMONWEALTH AVENUE TO POWDER MILL ROAD, INCLUDES 2 RAILROAD BRIDGES & 1 CULVERT (PHASE II-C) | Abandoned Rail Corridor | Concord | 4 | NOI | 171,400 | TRUE | 6/12/2015 | MA82B-07 | Assabet River | Impaired | 8 | 4 | MA82A-04 | Sudbury River | Impaired | 2 | 5 | MA82118 | White Pond | Not Impaired | 0 | 0 | | | | | |

# 75% Submissions

| Project Number | Project Type | Project Name | Project Road | Project Towns | District | WPA Filing | Change Impervious | Impacted Impaired Waterbodies | Date Submitted | WBID #1 | WB #1 Name | WB#1 Status | WB #1 BMPs | WB #1 DSCBs | WBID #2 | WB #2 Name | WB #2 Status | WB #2 BMPs | WB #2 DSCBs | WBID #3 | WB #3 Name | WB #3 Status | WB #3 BMPs | WB #3 DSCBs | WBID #4 | WB #4 Name | WB #4 Status | WB #4 BMPs | WB #4 DSCBs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 606433 | Other | NANTUCKET - MULTI USE PATH CONSTRUCTION FROM WASHINGTON STREET TO ORANGE STREET | Washington Street, Goose Pond Lane, Orange Street | Nantucket | 5 | NOI | 8,750 | FALSE | 1/24/2014 | MA97-01 | Nantucket Harbor | Impaired | 0 | 1 | | | | | | | | | | | | | | | |
| 607889 | Highway Reconstruction | NEEDHAM- INTERSECTION IMPROVEMENTS AT HIGHLAND AVENUE AND FIRST AVENUE | FIRST AVENUE, HIGHLAND AVENUE | NEEDHAM | 6 | NOI | 7,997 | TRUE | 7/31/2015 | MA72-07 | Charles River | Impaired | 1 | 22 | | | | | | | | | | | | | | | |
| 607246 | Intersection | ERVING ROUTE 2/ROUTE 2A INTERSECTION RECONSTRUCTION | ROUTE 2A AT ROUTE 2 | ERVING | 2 | RDA | 230 | TRUE | 7/15/2015 | MA35-04 | Millers River | Impaired | 3 | 0 | | | | | | | | | | | | | | | |
| 604531 | Other | ACTON- MAYNARD-ASSABET RIVER RAIL TRAIL CONSTRUCTION, INCLUDES BRIDGES, A-02-042 & M-10-012, A-02-034 & MPB WALL | Old Rail Bed | Maynard, Acton | 3 | NOI | 198,722 | FALSE | 4/17/2015 | MA82B-08 | Taylor Brook | Not Impaired | 0 | 0 | MA82B-05 | Assabet River | Impaired | 0 | 1 | MA82B-06 | Assabet River | Impaired | 0 | 1 | MA82B-13 | Fort Pond Brook | Not Impaired | 1 | 1 |
| 608071 | Other | ADAMS-ASHUWILLTICOOK RAIL TRAIL, PHASE III EXTENSION | Hoosac St. to Lime Street | ADAMS | 1 | NOI | 59,000 | FALSE | 6/29/2015 | MA11-03 | Hoosic River | Impaired | 0 | 2 | | | | | | | | | | | | | | | |
| 604446 | Highway Reconstruction | WESTFIELD- RECONSTRUCTION OF ROUTE 187 (LITTLE RIVER ROAD) & SHAKER ROAD, FROM 300 METERS SOUTH OF ROUTE 20 TO 460 METERS EAST OF SHAKER ROAD (.8 MILES) | Little River Road (Route 187) & Shaker Road & Ridgecrest Drive | Westfield | 2 | NOI | 147,886 | FALSE | 6/24/2015 | MA32-06 | Westfield River | Not Impaired | 2 | 37 | MA32-25 | Great Brook | Not Impaired | 1 | 6 | | | | | | | | | | |
| 604968 | Other | WESTFIELD- COLUMBIA GREENWAY RAIL TRAIL CONSTRUCTION (NORTH SECTION) | Westfield River Bridge | Westfield | 2 | Bridge Exempt | 1,556 | FALSE | 9/18/2015 | MA32-05 | Westfield River | Impaired | 0 | 0 | | | | | | | | | | | | | | | |
| 605299 | Bridge | GREAT BARRINGTON - BRIDGE REPLACEMENT, G-11-005, SR 183 (PARK STREET) OVER | Route 183 (Park Street) | Great Barrington | 1 | Bridge Exempt | 1,883 | TRUE | 6/12/2015 | MA21-19 | Housatonic River | Impaired | 0 | 7 | | | | | | | | | | | | | | | |
| 607869 | Highway Reconstruction | BOSTON ROAD (ROUTE 20) RECONSTRUCTION (FROM 200 FEET WEST OF HATCH STREET TO 400 FEET EAST OF DUMAINE STREET | Boston Road (Route 20) | Wilbraham | 2 | None | 23,800 | FALSE | 7/20/2015 | MA36-24 | Chicopee River | Impaired | 0 | 5 | | | | | | | | | | | | | | | |
| 605679 | Intersection | INTERSECTION IMPROVEMENTS AT COUNTY STREET (ROUTE 140) AND HART STREET | County Street (Route 140), Hart Street | Taunton | 5 | None | 14,500 | FALSE | 8/14/2015 | MA62-03 | Taunton River | Impaired | 0 | 19 | | | | | | | | | | | | | | | |
| 600518 | Highway Reconstruction | HINGHAM- INTERSECTION IMPROVEMENTS AT DERBY STREET, WHITING STREET (ROUTE 53) AND GARDNER STREET. | Derby Street, Whiting Street (Route 53) and Gardner Street | Hingham | 5 | RDA | 17,222 | FALSE | 9/21/2015 | MA74-01 | Crooked Meadow River | Impaired | 0 | 11 | | | | | | | | | | | | | | | |
| 605350 | Bridge | BRIDGE REPLACEMENT | Summit Hill Road over CSX R.R | Washington | 1 | Bridge Exempt | 0 | FALSE | 7/29/2015 | MA32-17 | Depot Brook | Not Impaired | 0 | 0 | | | | | | | | | | | | | | | |
| 605351 | Bridge | WEST BRIDGEWATER- BRIDGE REPLACEMENT, W-18-012, ROUTE 106 (WEST CENTER STREET) OVER THE HOCKOMOCK RIVER | West Center Street | West Bridgewater | 5 | Bridge Exempt | 12,632 | FALSE | 7/29/2015 | MA62-35 | Hockomock River | Not Impaired | 0 | 19 | | | | | | | | | | | | | | | |

# 75% Submissions

| Project Number | Project Type | Project Name | Project Road | Project Towns | District | WPA Filing | Change Impervious | Impacted Impaired Waterbodies | Date Submitted | WBID #1 | WB #1 Name | WB#1 Status | WB #1 BMPs | WB #1 DSCBs | WBID #2 | WB #2 Name | WB #2 Status | WB #2 BMPs | WB #2 DSCBs | WBID #3 | WB #3 Name | WB #3 Status | WB #3 BMPs | WB #3 DSCBs | WBID #4 | WB #4 Name | WB #4 Status | WB #4 BMPs | WB #4 DSCBs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 601368 | Highway Reconstruction | RESURFACING & RELATED WORK ON ROUTE 122 (GRAFTON STREET) FROM WASHINGTON SQUARE TO RICE SQUARE (1.4 MILES) | Grafton Street, Hamilton Street, Winter Street, Acton Street, Massasoit | Worcester | 3 | None | 600 | FALSE | 10/16/2015 | ma51-08 | Unnamed Tributary | Impaired | 0 | 34 | | | | | | | | | | | | | | | |
| 607242 | Highway Reconstruction | FITCHBURG- SAFE ROUTES TO SCHOOLS (SOUTH STREET ELEMENTARY SCHOOL) | South Street, Electric Avenue | Fitchburg | 3 | RDA | 1,220 | TRUE | 12/30/2015 | MA81-03 | North Nashua River | Impaired | 0 | 10 | | | | | | | | | | | | | | | |
| 602261 | Highway Reconstruction | WALPOLE - RECONSTRUCTION ON ROUTE 1A (MAIN STREET), FROM THE NORWOOD T.L. TO ROUTE 27, INCLUDES W-03-024 OVER THE NEPONSET RIVER | Route 1A (Main Street) | Walpole | 5 | NOI | 39,640 | FALSE | 1/20/2016 | MA73-01 | Neponset River | Impaired | 4 | 152 | MA73009 | Cobbs Pond | Impaired | 0 | 0 | | | | | | | | | | | |
| 607036 | Other | DISTRICT 2 - ADA RETROFITS AT VARIOUS LOCATIONS | I-291, I-391, RTE. 5, 9,10, 32, 57, 116, 141, & 116 | Various Municipalities Throughout District 2 | 2 | None | 0 | FALSE | 1/19/2016 | MA35-01 | Millers River | Impaired | 0 | 0 | | | | | | | | | | | | | | | |
| 601607 | Highway Reconstruction | HULL - RECONSTRUCTION OF ATLANTIC AVENUE AND RELATED WORK FROM NANTASKET AVENUE TO COHASSET TOWN LINE | Atlantic Avenue | Hull | 5 | NOI | 1,248 | FALSE | 12/31/2015 | MA74-11 | Weir River | Impaired | 0 | 75 | | | | | | | | | | | | | | | |
| 606303 | Bridge | RUTLAND - BRIDGE REPLACEMENT, R-14-004, INTERVALE ROAD OVER EAST BRANCH OF WARE RIVER | Intervale Road | Rutland | 3 | Bridge Exempt | 3,486 | FALSE | 2/2/2016 | MA36-01 | East Branch Ware River | Impaired | 0 | 0 | MA36-27 | Ware River | Impaired | 0 | 0 | | | | | | | | | | | |
| 608252 | Bridge | LUDLOW - WILBRAHAM - BRIDGE REHABILITATION, L-16-002=W-35-002, EAST ST OVER CHICOPEE RIVER | East Street and Red Bridge Road | Town of Wilbraham and Town of Ludlow | 2 | NOI | 0 | FALSE | 2/9/2016 | MA36-23 | Chicopee River | Not Impaired | 0 | 0 | | | | | | | | | | | | | | | |
| 608000 | Highway Reconstruction | BEDFORD-IMPROVEMENTS AT JOHN GLENN MIDDLE (SRTS) | Great Road, Mudge Way | Bedford | 4 | None | 1,230 | TRUE | 10/27/2015 | MA83-05 | Elm Brook | Impaired | 0 | 4 | MA83-17 | Shawsheen River | Impaired | 0 | 4 | | | | | | | | | | | |
| 604468 | Bridge | BRIDGE REPLACEMENT - WICKABOAG VALLEY ROAD OVER SUCKER BROOK (W-19-008) | WICKABOAG VALLEY ROAD | WEST BROOKFIELD | 2 | Bridge Exempt | 1,849 | FALSE | 1/27/2016 | MA36166 | Wickaboag Pond | Impaired | 0 | 0 | | | | | | | | | | | | | | | |
| 606599 | Intersection | CHICOPEE - TRAFFIC SIGNAL IMPROVEMENTS & RAMP RESURFACING @ I-90 (INTERCHANGE 6) | INTERSTATE 90, INTERSTATE 291, BURNETT ROAD | CHICOPEE | 2 | RDA | 64,520 | FALSE | 7/20/2015 | MA36-24 | Chicopee River | Impaired | 0 | 0 | | | | | | | | | | | | | | | |
| 608207 | Highway Maintenance | LONGMEADOW - SPRINGFIELD, PAVEMENT PRESERVATION ON INTERSTATE I-91 | Interstate I-91 and Related Ramps | Longmeadow and Springfield | 2 | RDA | 0 | FALSE | 11/5/2015 | MA34-20 | Cooley Brook | Not Impaired | 0 | 0 | MA34-05 | Connecticut River | Impaired | 0 | 0 | MA34-29 | Mill River | Impaired | 0 | 0 | MA34-21 | Longmeadow Brook | Not Impaired | 0 | 0 |

# 75% Submissions

| Project Number | Project Type | Project Name | Project Road | Project Towns | District | WPA Filing | Change Impervious | Impacted Impaired Waterbodies | Date Submitted | WBID #1 | WB #1 Name | WB#1 Status | WB #1 BMPs | WB #1 DSCBs | WBID #2 | WB #2 Name | WB #2 Status | WB #2 BMPs | WB #2 DSCBs | WBID #3 | WB #3 Name | WB #3 Status | WB #3 BMPs | WB #3 DSCBs | WBID #4 | WB #4 Name | WB #4 Status | WB #4 BMPs | WB #4 DSCBs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 608022 | Resurfacing | BRIMFIELD- STURBRIDGE- RESURFACING & RELATED WORK ON ROUTE 20, FROM EAST OF NEW HOLLAND ROAD IN BRIMFIELD (MM 87.8) ENDING WEST OF GALILEO DRIVE IN STURBRIDGE (MM 91.9) | Route 20 | Town of Brimfield, Town of Sturbridge | 2 | RDA | 0 | FALSE | 4/28/2015 | MA41-27 | Unnamed Tributary | Not Impaired | 0 | 0 | MA41014 | East Brimfield Reservoir | Impaired | 0 | 0 | | | | | | | | | | |
| 606110 | Intersection | INTERSECTION IMPROVEMENTS AT ROUTE 146 AND BOSTON ROAD | Route 146, Boston Road | Sutton | 3 | NOI | 65,340 | FALSE | 9/4/2014 | MA5100 2 | Aldrich Pond | Impaired | 2 | 5 | MA51053 | Girard Pond | Impairment Not Caused By Pollutant | 1 | 12 | MA511 85 | Woodbury Pond | Impaired | 1 | 27 | | | | | |
| 605385 | Highway Reconstruction | SPRINGFIELD- SIGNAL & INTERSECTION IMPROVEMENTS @ ROOSEVELT AVENUE & ISLAND POND ROAD, ROOSEVELT AVENUE & ALDEN STREET | Roosevelt Ave, Island Pond Rd, Alden St | Springfield | 2 | RDA | 566 | FALSE | 3/21/2016 | MA3409 9 | Watershops Pond | Impaired | 0 | 11 | | | | | | | | | | | | | | |
| 606346 | Other | LEICESTER- RESURFACING & RELATED WORK ON ROUTE 56 (PAXTON STREET), FROM MAIN STREET TO HYLAND AVENUE | Paxton Street (Route 56) From Main Street to Hyland Avenue | Town of Leicester | 3 | NOI | 10,303 | TRUE | 6/25/2015 | MA4202 5 | Henshaw Pond | Not Impaired | 1 | 30 | | | | | | | | | | | | | | |
| 607731 | Bridge | BRIDGE PRESERVATION ON A SECTION OF INTERSTATE I-91 (BRIDGE NO. S-24-061) | I-91, I-291, E/W Columbus Avenue | Springfield | 2 | Bridge Exempt | 900 | FALSE | 7/7/2014 | MA34-05 | Connecticut River | Impaired | 9 | 11 | | | | | | | | | | | | | | |

# Appendix F: Design Public Hearings Table

Design Public Hearings

| Date | Event | Event Type | Location |
|---|---|---|---|
| 03/04/2015 | SOMERVILLE - SAFE ROUTES TO SCHOOL | Design Public Hearing | Healey School School Cafeteria 5 Meacham Street Somerville, MA 02145 |
| 03/10/2015 | GREAT BARRINGTON- BRIDGE REPLACEMENT, G-11-005, SR 183 (PARK STREET) OVER HOUSATONIC RIVER | Design Public Hearing | Great Barrington Fire Department Building Training Room, 37 State Road, Great Barrington, MA 01230 |
| 03/11/2015 | SOUTHBOROUGH - RECONSTRUCTION OF MAIN STREET (ROUTE 30) FROM SEARS ROAD TO PARK STREET | Public Information Meeting | Southborough Senior Center 9 Cordaville Road Southborough, MA 01772 |
| 03/17/2015 | LOWELL - MARKET STREET BRIDGE (L-15-045) REPLACEMENT OVER THE WESTERN CANAL | Design Public Hearing | Pollard Memorial Library, Meeting Room 401 Merrimack Street Lowell, MA 01852 |
| 03/19/2015 | AMESBURY – BRIDGE REPLACEMENT, A-07-026, ROUTE I-495 (NB&SB) OVER THE BIKEWAY ABANDONED B&M RR LINE | Design Public Hearing | City Hall Auditorium, 62 Friend Street, Amesbury, MA 01913 |
| 03/19/2015 | MATTAPAN - INTERSECTION IMPROVEMENTS AT GALLIVAN BOULEVARD (RTE 203) AND MORTON STREET | Design Public Hearing | Mildred Avenue K-8 School, 5 Mildred Avenue Mattapan, MA 02126 |
| 3/25/2015 | BOSTON - BRIDGE REHABILITATION, B-16-237, MASSACHUSETTS AVENUE (ROUTE 2A) OVER COMMONWEALTH AVENUE | Design Public Hearing | Boston Central Library, Commonwealth Salon, 700 Boylston Street, Copley Square, Boston, MA 02116 |
| 3/26/2015 | WORCESTER - BLACKSTONE VISITOR CENTER AT WORCESTER PHASE 1 | Design Public Hearing | Quinsigamond School (Cafeteria) 14 Blackstone River Road Worcester, MA 01607 |
| 3/31/2015 | LAWRENCE - LAWRENCE STREET/PARK STREET INTERSECTION | Design Public Hearing | Lawrence City Council Chambers 200 Common Street Lawrence, MA 01840 |
| 4/2/2015 | HOLDEN - BRIDGE REPLACEMENT, H-18-020, RIVER STREET OVER QUINAPOXET RIVER | Design Public Hearing | Memorial Hall, 1196 Main Street, Holden, MA 01520 |
| 04/06/2015 | FRANKLIN - PEDESTRIAN BRIDGE CONSTRUCTION, F-08-005, OLD SR 140 OVER MBTA/CSX | Design Public Hearing | Council Chambers, 2nd Floor, Municipal Building, 355 East Central Street, Franklin, MA 02038 |
| 04/09/2015 | CHELMSFORD - BRIDGE SUPERSTRUCTURE REPLACEMENT, C-08-048, HUNT ROAD OVER I-495 | Design Public Hearing | Chelmsford Town Manager's Offices, 50 Billerica Road, 2nd Floor, Room 205, Chelmsford, MA 01824 |
| 04/14/2015 | HOLYOKE - I-95 INTERCHANGE 16 AT ROUTE 202 (CHERRY STREET) INTERSECTION IMPROVEMENTS | Public Information Meeting | Soldier's Home in Holyoke, 2nd Floor Canteen 110 Cherry Street Holyoke, MA 01040-7002 |
| 04/15/2015 | SOUTHWICK - INTERSECTION IMPROVEMENTS AT 4 LOCATIONS ON ROUTE 57 | Design Public Hearing | Southwick Town Hall Auditorium 454 College Highway Southwick, MA 01077 |
| 04/28/2015 | HAWLEY - BRIDGE REPLACEMENT, H-13-003, SAVOY ROAD OVER THE CHICKLEY RIVER | Design Public Hearing | Hawley Town Hall, 8 Pudding Hollow Road, Hawley, MA 01339 |
| 04/13/2016 | HEATH- BRIDGE REPLACEMENT, H-14-009, SADOGA ROAD OVER THE BURRINGTON BROOK | Design Public Hearing | Town of Heath, Heath Community Hall, 1 West Main Street, Heath, MA 01346 |
| 04/14/2016 | MASSDOT OFFICE OF OUTDOOR ADVERTISING PUBLIC HEARING | Public Hearing | 10 Park Plaza, Conference Rooms 5 & 6 (2nd floor), Boston, MA 02116 |
| 04/21/2016 | SUTTON- BRIDGE REPLACEMENT, S-33-005, BLACKSTONE STREET OVER BLACKSTONE RIVER | Design Public Hearing | Town Hall, Wally Johnson Memorial Meeting Room, 3rd Floor, 4 Uxbridge Road, Sutton, MA 01590 |
| 04/28/2016 | LANESBOROUGH- BRIDGE REPLACEMENT, L-03-024, NARRAGANSETT AVENUE OVER PONTOOSUC LAKE | Design Public Hearing | Newton Memorial Town Hall – Town Community Room, 83 North Main Street, Lanesborough, MA 01237 |
| 04/28/2016 | HANOVER- NORWELL- SUPERSTRUCTURE REPLACEMENT, H-06-010, ST 3 OVER ST 123 (WEBSTER STREET) & N-24-00 | Design Public Hearing | Hanover Town Hall, Large Hearing Room, 1st Floor, 550 Hanover Street, Hanover, MA 02339 |
| 04/28/2016 | PRINCETON - ROUTE 140 RECONSTRUCTION PROJECT | Design Public Hearing | Town Hall Annex 4 Town Hall Drive Princeton, MA 01541 |

Design Public Hearings

| | | | |
|---|---|---|---|
| 05/05/2015 | CHATHAM - IMPROVEMENTS ON WEST MAIN STREET (RTE. 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD | Public Information Meeting | Town Offices Annex - Large Meeting Room 261 George Ryder Road Chatham, MA |
| 05/07/2015 | LEXINGTON - MASSACHUSETTS AVENUE (MASS AVE) ROADWAY RECONSTRUCTION | Design Public Hearing | Samuel Hadley Public Services Building Room No. 126, 201 Bedford Street, Lexington, MA 02116 |
| 05/07/2015 | PAXTON - ROUTE 31 (HOLDEN ROAD) RECLAMATION PROJECT | Design Public Hearing | John Bauer Senior Center 17 West Street, Paxton, MA 01612 |
| 05/20/2015 | LOWELL - BRIDGE REPLACEMENT, L-15-058, VFW HIGHWAY OVER BEAVER BROOK | Design Public Hearing | Pollard Memorial Library Meeting Room, 401 Merrimack Street, Lowell, MA 01852 |
| 05/27/2015 | TAUNTON - HARTS FOUR CORNERS | Design Public Hearing | Taunton Temporary City Hall Chester R. Martin Council Chambers 141 Oak Street Taunton, MA 02780 |
| 05/28/2015 | PERFORMANCE AND ASSET MANAGEMENT ADVISORY COUNCIL | Public Meeting | Board Room - Suite 3830 10 Park Plaza Boston, MA 02116 |
| 06/10/2015 | WESTFIELD - ROUTE 187, LITTLE RIVER ROAD RECONSTRUCTION | Public Information Meeting | Westfield City Hall City Council Chambers 59 Court Street Westfield, Massachusetts |
| 06/16/2015 | CAMBRIDGE-ARLINGTON IMPROVEMENTS AT ROUTE 2 & ROUTE 16 PROJECT | Public Information Meeting | The Café 60 Acorn Park Cambridge,MA 02140 |
| 06/16/2015 | WEST SPRINGFIELD - CONNECTICUT RIVERWALK AND BIKEWAY PROJECT | Public Information Meeting | West Springfield Town Hall Auditorium 26 Central Street West Springfield, MA 01089 |
| 06/17/2015 | ALLSTON- I-90 INTERCHANGE PROJECT | Public Information Meeting | The Jackson Mann Community Center 500 Cambridge Street, Allston MA 02134 |
| 06/23/2015 | WAREHAM- BRIDGE REPLACEMENT (W-06-022) PAPER MILL ROAD OVER WEWEANTIC RIVER | Design Public Hearing | Wareham Town Hall, Bottom Floor Cafeteria 54 Marion Road Wareham, MA 02576 |
| 06/25/2015 | DALTON - HOUSATONIC ROAD RECONSTRUCTION | Public Information | Nessacus Regional Middle School Auditorium 35 Fox |
| 07/08/2015 | NEW BEDFORD - COGGESHALL STREET IMPROVEMENTS | Design Public Hearing | PAACA Center 360 Coggeshall Street New Bedford, MA 02740 |
| 07/08/2015 | READING - INTERSECTION AT ROUTE 28 AND HOPKINS STREET | Design Public Hearing | Reading Senior Center – Great Room 44 Pleasant Street Reading, MA 01867 |
| 07/14/2015 | NEW BEDFORD - RECONSTRUCTION OF RTE 18 (JFK HIGHWAY)FROM COVEN ST. TO GRIFFIN ST. (PHASE II) | Design Public Hearing | Alfred J. Gomes Elementary School 286 S. 2nd Street New Bedford, MA 02740 |
| 07/22/2015 | FITCHBURG, LUNENBERG AND LEOMINSTER - RECONSTRUCTION OF SUMMER STREET AND NORTH STREET | Design Public Hearing | Lunenburg High School Auditorium 1079 Massachusetts Avenue Lunenburg, MA 01462 |
| 07/30/2015 | PERFORMANCE AND ASSET MANAGEMENT ADVISORY COUNCIL | Public Meeting | Board Room, Suite 3830 10 Park Plaza Boston, MA |
| 08/10/2015 | WEST BOYLSTON - REHABILITATION & STORMWATER IMPROVEMENTS ON STERLING ST. (ROUTE 12/140) | Design Public Hearing | Town of West Boylston, Board Meeting Room, 140 Worcester Street, West Boylston, MA 01583 |
| 08/19/2015 | ALLSTON I-90 INTERCHANGE IMPROVEMENT PROJECT TASKFORCE MEETING | Public Meeting | Fiorentino Center located at 123 Antwerp Street just off Western Avenue |
| 08/27/2015 | PERFORMANCE AND ASSET MANAGEMENT ADVISORY COUNCIL | Public Meeting | Transportation Building - Board Room Suite 3830 - 10 Park Plaza - Boston, MA 02116 |
| 08/31/2015 | BROCKTON - PEDESTRIAN IMPROVEMENTS | Design Public Hearing | City of Brockton, GAR Room of City Hall, Second Floor 45 School Street Brockton, MA 02301 |
| 09/03/2015 | WARREN- BRIDGE DEMOLITION, W-07-012, OLD BOSTON POST ROAD OVER NAULTAUG BROOK | Design Public Hearing | Board of Selectmen's Meeting Room, Shepard Municipal Building, 48 High Street, Warren, MA 010830-1585 |
| 09/09/2015 | MILTON - EAST MILTON SQUARE RECONSTRUCTION PROJECT | Design Public Hearing | Milton Council on Aging 10 Walnut Street Milton, MA 02186 |
| 09/10/2015 | BELCHERTOWN- BRIDGE DEMOLITION, B-05-023, WILSON STREET OVER NECRR | Design Public Hearing | Selectmen's Meeting Room, 1st Floor, Lawrence Memorial Hall – Town Hall, 2 Jabish Street, Belchertown, MA 01007 |

Design Public Hearings

| | | | |
|---|---|---|---|
| 09/30/2015 | PEMBROKE - INTERSECTION IMPROVEMENTS AND RELATED WORK AT WASHINGTON ST. (RTE 53) AND PLEASANT ST. | Design Public Hearing | Pembroke Town Hall, Veterans Memorial Hall 100 Center Street Pembroke, MA 02359 |
| 10/08/2015 | SHREWSBURY - PROPOSED ROUTE 9 ROADWAY MODIFICATIONS | Public Information Meeting | Shrewsbury Town Hall Selectmen's Meeting Room 100 Maple Avenue, Shrewsbury, MA |
| 10/15/2015 | I-90 ALLSTON INTERCHANGE IMPROVEMENT PROJECT TASKFORCE MEETING | Public Meeting | Fiorentino Community Center - 123 Antwerp Street, Boston (Allston), MA |
| 10/22/2015 | ANDERSON GRADE SEPARATED PATH PROJECT | Public Information Meeting | Fiorentino Community Center 123 Antwerp Street, Allston 02134 |
| 10/22/2015 | UPTON - RECONSTRUCTION OF HARTFORD AVENUE NORTH, HIGH STREET AND HOPKINTON ROAD | Design Public Hearing | Nipmuc Regional High School 90 Pleasant Street Upton, MA 01568 |
| 10/26/2015 | ASHBURNHAM - ROUTE 101 & WILLIAMS & COREY HILL ROAD INTERSECTION IMPROVEMENTS | Design Public Hearing | Public Safety Building, Training Room 99 Central Street Ashburnham, MA 01430 |
| 10/27/2015 | SOUTHBOROUGH - RESURFACING & RELATED WORK ON RTE 9, FROM FRAMINGHAM TOWN LINE TO WHITE BAGLEY ROAD | Design Public Hearing | Cordaville Hall Main Hall (Rooms A & B) 9 Cordaville, Road Southborough, MA 01772 |
| 10/29/2015 | PERFORMANCE AND ASSET MANAGEMENT ADVISORY COUNCIL MEETING | Public Meeting | MassDOT Board Room, 10 Park Plaza, 3rd Floor, 3830 |
| 10/29/2015 | I-90 ALLSTON INTERCHANGE IMPROVEMENT PROJECT TASKFORCE MEETING | Public Meeting | Conference Room 1, MassDOT's State Transportation Building, 10 Park Plaza |
| 10/29/2015 | NEW BEDFORD - JOHN F. KENNEDY BOULEVARD (ROUTE 18) PHASE II REHABILITATION | Design Public Hearing | Alfred J. Gomes Elementary School 286 S.2nd Street New Bedford, MA 02740 |
| 11/04/2015 | WESTFORD - INTERSECTION & SIGNAL IMPROVEMENTS AT ROUTE 110 & TADMUCK ROAD | Design Public Hearing | Westford Town Hall, 2nd Floor Meeting Room 55 Main Street Westford, MA 01886 |
| 11/04/2015 | NORTHBOROUGH-RECONSTRUCTION ON ROUTE 9 AND ROUTE 20 RAMP IMPROVEMENTS IN N.BOROUGH AND SHREWSBURY | Design Public Hearing | Board of Selectmen’s Room Northborough Town Offices 63 Main Street Northborough, MA 01532 |
| 11/05/2015 | DENNIS - STREETSCAPE IMPROVEMENTS ON MAIN ST. (RTE 28) FROM DENNIS COMMONS DRIVE TO UPPER COUNTY RD. | Design Public Hearing | Dennis Police Station 90 Bob Crowell Road South Dennis, MA 02660 |
| 11/09/2015 | ROUTE 20 IMPROVEMENTS IN THE TOWNS OF OXFORD AND CHARLTON - PUBLIC INFORMATION MEETING | Public Information Meeting | Oxford High School, 495 Main Street, Oxford, MA 01540 |
| 11/10/2015 | NEWTON- BRIDGE REHABILITATION ALONG I-90, N-12-065, RAMPS A & B, STRUCTURE L-50 OVER CHARLES RIVER | Design Public Hearing | Weston Public Library, Community Room, 87 School Street, Weston, MA 02493 |
| 11/12/2015 | I-290/BELMONT STREET BRIDGE PROJECT PUBLIC INFORMATION MEETING | Public Information Meeting | Knowles Hall, UMass Memorial Medical Center, 119 Belmont Street, Worcester, MA |
| 11/16/2015 | LAMAR CENTRAL OUTDOOR - APPEAL OF ELECTRONIC BILLBOARD PERMIT APPLICATION | Public Hearing | Office of the Administrative Law Judge, 10 Park Plaza, Suite 6620 MassDOT |
| 11/16/2015 | HAVERHILL- SUPERSTRUCTURE REPLACEMENT, H-12-039, I-495 (NB & SB) OVER MERRIMACK RIVER | Design Public Hearing | City Hall, Room 301, 4 Summer Street, Haverhill, MA 01830 |
| 11/17/2015 | NEEDHAM - INTERSECTION IMPROVEMENTS AT HIGHLAND AVENUE AND FIRST AVENUE | Design Public Hearing | Needham Town Hall Powers Hall Meeting Room 1471 Highland Avenue Needham, MA 02492 |
| 11/18/2015 | HAVERHILL - MAIN STREET IMPROVEMENT PROJECT | Design Public Hearing | City Hall, Room 301 4 Summer Street Haverhill, MA 01830 |
| 11/18/2015 | FRAMINGHAM- BRIDGE BETTERMENT, F-07-045, I-90 OVER MDC RESERVOIR | Design Public Hearing | Framingham Town Hall – Memorial Building, Ablondi Room, 150 Concord Street, Framingham, MA 01702 |
| 11/19/2015 | I-90 ALLSTON INTERCHANGE IMPROVEMENT PROJECT TASKFORCE MEETING | Public Meeting | Fiorentino Community Center – 123 Antwerp Street, Boston (Allston), MA |

Design Public Hearings

| | | | |
|---|---|---|---|
| 11/19/2015 | DUDLEY- BRIDGE DEMOLITION, D-12-009, CARPENTER ROAD OVER QUINNEBAUG RAIL TRAIL | Design Public Hearing | Municipal Complex, Room 315, 71 West Main Street, Dudley, MA 01571 |
| 12/01/2015 | PERFORMANCE AND ASSET MANAGEMENT ADVISORY COUNCIL MEETING | Public Meeting | Transportation Library, 10 Park Plaza, 2nd Floor |
| 12/01/2015 | MARLBOROUGH - RECONSTRUCTION OF ROUTE 85 (MAPLE STREET) | Design Public Hearing | City Hall, in Memorial Hall 140 Main Street Marlborough, MA 01752 |
| 12/01/2015 | RUTLAND- BRIDGE REPLACEMENT, R-14-004, INTERVALE ROAD OVER EAST BRANCH OF WARE RIVER | Design Public Hearing | Rutland Public Library, Lower Level Meeting Room, 280 Main Street, Rutland, MA 01543 |
| 12/07/2015 | APPEAL OF P. GIOIOSO & SONS CONSTRUCTION CLAIM #5-73891-001/ITEM 952 STEEL SHEETING | Public Hearing | Office of the Administrative Law Judge MassDOT - Room 6620 10 Park Plaza |
| 12/08/2015 | BOSTON- I-90 INTERCHANGE IMPROVEMENT PROJECT | Public Information Meeting | The Jackson Mann Community Center Auditorium, 500 Cambridge Street, Allston, Massachusetts, 02134 |
| 12/09/2015 | WORCESTER - STREETSCAPE PROJECT IN THE MAIN STREET BUSINESS DISTRICT | Design Public Hearing | Worcester Public Library, Saxe Room 3 Salem Street Worcester, MA 01608 |
| 12/10/2015 | GREENFIELD – BRIDGE REPLACEMENT, G-12-052 (0XR) & G-12-053 (0XT), I-91 (NB & SB) OVER BMRR | Design Public Hearing | Greenfield Town Hall, Second Floor Meeting Room, 14 Court Square, Greenfield, MA 01301 |
| 12/14/2015 | WASHINGTON – WASHINGTON – BRIDGE REPLACEMENT, W-09-006, SUMMIT HILL ROAD OVER CSX R.R | Design Public Hearing | Washington Town Hall, 8 Summit Hill Road, Washington, MA 01223 |
| 12/16/2015 | PITTSFIELD - PROPOSED INTERSECTION IMPROVEMENTS AT CENTER AND WEST HOUSATONIC STREET (ROUTE 20) | Design Public Hearing | Pittsfield City Hall 70 Allen Street Pittsfield, MA 01201 |
| 12/17/2015 | I-90 ALLSTON INTERCHANGE IMPROVEMENT PROJECT TASKFORCE MEETING #18 | Public Information Meeting | Fiorentino Community Center - 123 Antwerp Street, Boston (Allston), MA |
| 01/06/2016 | PERFORMANCE AND ASSET MANAGEMENT ADVISORY COUNCIL MEETING | Public Meeting | MBTA Board Room, Board Room Suite 3830, 3rd floor, 10 Park Plaza, Boston |
| 01/14/2016 | MASSDOT OFFICE OF OUTDOOR ADVERTISING PUBLIC HEARING | Public Hearing | 10 Park Plaza, Conference Rooms 5 & 6 (2nd floor), Boston, MA 02116 |
| 01/20/2016 | FLORIDA- BRIDGE REPLACEMENT, F-05-002, SOUTH COUNTY ROAD OVER THE COLD RIVER | Design Public Hearing | Town of Florida, 379 Mohawk Trail, Drury, MA 01343 |
| 01/27/2016 | SPRINGFIELD - SIGNAL & INTERSECTION IMPROVEMENTS@ ROOSEVELT AVE & ISLAND POND RD. & ALDEN ST. | Design Public Hearing | Mary A. Dryden Veterans Memorial School (Cafeteria) 190 Surrey Road Springfield, MA 01118 |
| 02/09/2016 | BRIMFIELD - RESURFACING & RELATED WORK ON ROUTE 20 | Public Information Meeting | Town Hall-Great Hall 21 Main Street Brimfield, MA 01010 |
| 02/09/2016 | HEATH- BRIDGE REPLACEMENT, H-14-001, SR 8A (JACKSONVILLE STREET) OVER MILL BROOK | Design Public Hearing | Heath Community Hall, 1 East Main Street, Heath, MA 01346 |
| 02/10/2016 | DEDHAM - PEDESTRIAN IMPROVEMENTS ALONG ELM STREET & RUSTCRAFT CORRIDORS | Design Public Hearing | Dedham Town Hall Lower Conference Room 26 Bryant Street Dedham, MA 02026 |
| 02/11/2016 | MASSDOT OFFICE OF OUTDOOR ADVERTISING PUBLIC HEARING | Public Hearing | 10 Park Plaza, Conference Rooms 5 & 6 (2nd floor), Boston, MA 02116 |
| 02/22/2016 | ROUTE 20 CHARLTON-OXFORD PROPOSED ROADWAY RECONSTRUCTION PROJECT | Public Information Meeting | Charlton Middle School Auditorium 2 Oxford Road Charlton, MA 01507 |
| 02/23/2016 | SHELBURNE - INTERSECTION IMPROVEMENTS ROUTE 2@ COLRAIN - SHELBURNE ROAD | Design Public Hearing | Town of Shelburne Town Hall 51 Bridge Street Shelburne, MA 01370 |
| 02/24/2016 | FITCHBURG - SAFE ROUTES TO SCHOOL | Design Public Hearing | South Street Elementary School Cafeteria 376 South Street Fitchburg, MA 01420 |
| 02/25/2016 | COHASSET- SUPERSTRUCTURE REPLACEMENT & SUBSTRUCTURE REHABILITATION, C-17-002, ATLANTIC AVENUE OVER | Design Public Hearing | Wilcutt Commons, Cohasset Senior Center, 90 Sohier Street, Cohasset, MA 02025 |

Design Public Hearings

| | | | |
|---|---|---|---|
| 03/03/2016 | BRAINTREE- BRIDGE REHABILITATION, B-21-060 AND B-21-061, ST 3 (SB) AND ST 3 (NB) OVER RAMP C | Design Public Hearing | The Cahill Auditorium, Braintree Town Hall, 1 JFK Memorial Drive, Braintree, MA |
| 03/10/2016 | MASSDOT OFFICE OF OUTDOOR ADVERTISING PUBLIC HEARING | Public Hearing | 10 Park Plaza, Conference Rooms 5 & 6 (2nd floor), Boston, MA 02116 |
| 03/10/2016 | SPRINGFIELD- NORTH END PEDESTRIAN PATH CONSTRUCTION (UNDER PAN-AM RAILROAD), BETWEEN PLAINFIELD STR | Public Information Meeting | Brightwood Public Library, Community Room, 359 Plainfield Street, Springfield, MA 01107 |
| 03/10/2016 | I-90 ALLSTON INTERCHANGE IMPROVEMENT PROJECT TASKFORCE MEETING #24 | Public Information Meeting | Fiorentino Community Center – 123 Antwerp Street, Boston (Allston), MA |
| 03/15/2016 | BROCKTON - STORMWATER IMPROVEMENTS ALONG ROUTE 28 | Design Public Hearing | Brockton City Hall, G.A.R. Conference Room, 45 School Street, Brockton, MA 02301 |
| 03/22/2016 | BOSTON- LEVERETT CIRCLE PEDESTRIAN BRIDGE OVER ROUTE 28, I-93 RAMPS & STORROW DRIVE | Design Public Hearing | The West End Museum, 150 Staniford Street, Boston, MA 02114 |
| 03/24/2016 | LUDLOW- WILBRAHAM- BRIDGE PRESERVATION, L-16-002=W-35-002 (0MA), EAST STREET OVER THE CHICOPEE RIVER | Public Information Meeting | Town of Wilbraham, 240 Springfield Street, Selectmen Meeting Room, Wilbraham, MA 01095 |
| 03/28/2016 | POSTPONED: I-90 ALLSTON INTERCHANGE IMPROVEMENT PROJECT TASKFORCE MEETING #25 | Public Information Meeting | Fiorentino Community Center – 123 Antwerp Street, Boston (Allston), MA |
| 03/29/2016 | WORCESTER - HARDING STREET RESURFACING AND STREETSCAPE | Design Public Hearing | Central Massachusetts Regional Planning Commission 2 Washington Square, Union Station Worcester, MA 01604 |

## Appendix G: Active MassDOT Construction NOIs in Permit Year 13

| Tracking Number | Owner/Operator | Project/Site Name | Project State | Project City | Status | Date Submitted | Date of Coverage |
|---|---|---|---|---|---|---|---|
| MAR12BG30 | MASSDOT D2 | Roadway Reconstruction along Sections of Route 67 and 19 (Main and Maple Street) | Massachusetts | Warren | Submitted to EPA | 3/14/2016 | - |
| MAR12BG21 | MASSDOT | Dalton (602280) Reconstruction of Housatonic Street | Massachusetts | Dalton | Active | 3/11/2016 | 3/25/2016 |
| MAR12BF92 | MASSDOT D2 | Northampton, MA – Reconstruction (Roundabout) on Pleasant Street (Rte 5) and Conz Street | Massachusetts | Northampton | Active | 3/11/2016 | 3/25/2016 |
| MAR12BF95 | MassDOT Highway | Interim Improvements Along Cambridge – River Street | Massachusetts | Cambridge | Active | 3/03/2016 | 3/17/2016 |
| MAR12BF49 | MassDOT Highway Division | Resurfacing, Median Barrier, Replacement & Related Work along Sections of Roadway | Massachusetts | Millbury – Sutton | Active | 2/22/2016 | 3/01/2016 |
| MAR12BF13 | MASSDOT D2 | Intersection Improvements & Related Work at Route 5/10 (Deerfield Street) and Cheapside Street – Greenfield, MA | Massachusetts | Greenfield | Active | 2/16/2016 | 3/01/2016 |
| MAR12BF03 | MassDOT Highway Division | Ashuwilltocook Bikeway Rail Trail | Massachusetts | Adams | Active | 2/08/2016 | 2/23/2016 |
| MAR12BE66 | MassDOT D2 | Stormwater improvements in LONG, SPFLD, Templeton, and Westfield | Massachusetts | LONG, SPFDL, Westfield, Templeton | Active | 2/03/2016 | 2/18/2016 |
| MAR12BD73 | MassDOT Highway | Bridge replacement: Needham St over great ditch | Massachusetts | Dedham | Active | 12/18/2015 | 1/1/2016 |
| MAR12BE01 | MassDOT Highway Division District 5 | Brockton – Reconstruction and related work of a section of West Elm Street | Massachusetts | Brockton | Active | 12/18/2015 | 1/1/2016 |
| MAR12BD96 | MassDOT Highway Division District 5 | Hanover-Route 53 reconstruction | Massachusetts | Hanover | Active | 12/18/2015 | 1/1/2016 |
| MAR12BD85 | MassDOT Highway Division | Quequechan River Rail Trail Phase 3 | Massachusetts | Fall River | Active | 12/11/2015 | 12/25/2015 |
| MAR12BB13 | MassDOT Highway | Parking lot under expressway, Boston | Massachusetts | Boston | Active | 12/10/2015 | 12/24/2015 |
| MAR12BD81 | MassDOT Highway Division | Blackstone Visitor Center site remediation, grading, and related work along a section of Route 146 (Worcester-Providence Turnpike) Phase 1 | Massachusetts | Worcester | Active | 12/09/2015 | 12/23/2015 |
| MAR12BD63 | MassDOT Highway Division | Route 20 safety improvement project | Massachusetts | Charlton & Oxford | Active | 11/27/2015 | 12/11/2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| MAR12BD54 | MassDOT Highway Division | Roadway reconstruction Route 146 over West Main Street | Massachusetts | Millbury | Active | 11/23/2015 | 12/07/2015 |
| MAR12BD48 | MassDOT D2 | Pelham, MA roadway reconstruction and related work along a section of Amherst Road (Phase II) | Massachusetts | Pelham | Active | 11/23/2015 | 12/07/2015 |
| MAR12BD24 | MassDOT Highway Division District 5 | Bridge Replacement Br. No. R-04-002 Wheeler Street over the Palmer River | Massachusetts | Rehoboth | Active | 11/09/2015 | 11/23/2015 |
| MAR12BD06 | MassDOT Highway Division District 5 | Cape Cod Rail Trail extension Phase 1 | Massachusetts | Yarmouth | Active | 11/06/2015 | 11/20/2015 |
| MAR12BC72 | MassDOT Highway Division District 5 | Contract #85022 Westport, MA – Resurfacing and related work (including Repair of 3 bridges) along a section of Route 88 (Main Highway) | Massachusetts | Westport | Active | 10/16/2015 | 10/30/2015 |
| MAR12BC50 | MassDOT Highway Division District 5 | MassDOT Carver Route 58 | Massachusetts | Carver | Active | 10/16/2015 | 10/30/2015 |
| MAR12BC09 | MassDOT D2 | Roadway reconstruction and related work along a section of Hatchery Road and Ped Bridge replacement Br. No. M-28-009 (steel) Greenfield Road over Pam Am Railroad | Massachusetts | Montague | Active | 10/13/2015 | 10/27/2015 |
| MAR12B776 | MassDOT Highway Division | I-495 ATMS | Massachusetts | Littleton | Active | 10/06/2015 | 10/20/2015 |
| MAR12BB68 | MassDOT Highway Division | Water Street Reconstruction | Massachusetts | Clinton | Active | 10/02/2015 | 10/16/2015 |
| MAR12BB21 | MassDOT Highway Division | Construction of Bruce Freeman trail | Massachusetts | Acton | Active | 9/10/2015 | 9/24/2015 |
| MAR12BA77 | MassDOT | Washington Mountain Road | Massachusetts | Washington | Active | 9/02/2015 | 9/16/2015 |
| MAR12B974 | MassDOT D2 | Greenfield MA – Intersection improvements and related work (including signals) at Route 2A (Mohawk trail) and Shelburne Road/River Road | Massachusetts | Greenfield | Active | 7/31/2015 | 8/14/2015 |
| MAR12B956 | MassDOT D2 | Roadway reconstruction and related work along a section of Route 181 (Mill Valley Road and Franklin Street) in Belchertown, MA | Massachusetts | Belchertown | Active | 7/30/2015 | 8/13/2015 |
| MAR12B906 | MassDOT Highway Division | Bridge replacement Br. No. B-06-011 (concrete arch) Route 116 over a proposed rail trail | Massachusetts | Bellingham | Active | 7/29/2015 | 8/12/2015 |
| MAR12B944 | MassDOT D2 | Amherst, Northampton, | Massachusetts | Amherst, Northampton, | Active | 7/29/205 | 8/12/2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Southampton construction of sidewalks and wheelchair ramps on sections of Routes 5, 9, and 10 | | Southampton | | | |
| MAR12B143 | MassDOT D2 | Erving steel building replacement | Massachusetts | Erving | Active | 7/29/2015 | 8/12/2015 |
| MAR12B964 | MassDOT Highway Division | Paxton – resurfacing and related work on Route 122 from Route 31 to the Rutland T.L. | Massachusetts | Paxton | Active | 7/29/2015 | 8/12/2015 |
| MAR12B883 | MassDOT D2 | Springfield I-91 Viaduct Br. No. S-24-061 bridge deck replacement | Massachusetts | Springfield | Active | 7/9/2015 | 7/23/2015 |
| MAR12B874 | MassDOT Highway Division | Roadway reconstruction along a section of Lincoln Street (Route 70) Phase II; Worcester, MA | Massachusetts | Worcester | Active | 7/2/2015 | 7/16/2015 |
| MAR12B770 | MassDOT D2 | Chicopee intersection improvements and related work | Massachusetts | Chicopee | Active | 6/25/2015 | 7/9/2015 |
| MAR12B792 | MassDOT Highway Division | Center Road reconstruction project | Massachusetts | Dudley | Active | 6/17/2015 | 7/1/2015 |
| MAR12B740 | MassDOT Highway Division | Intersection Route 2 and 16 – Arlington – Cambridge | Massachusetts | Arlington | Active | 6/9/2015 | 6/23/2015 |
| MAR12B777 | MassDOT Highway Division | Resurfacing and related work along a section of Route 122A/146 | Massachusetts | Millbury – Worcester | Active | 6/9/2015 | 6/23/2015 |
| MAR12B675 | MassDOT D2 | Winchendon – North Central multi use pathway construction Phase V | Massachusetts | Winchendon | Active | 6/3/215 | 6/17/2015 |
| MAR12B661 | MassDOT Highway Division | Roadway reconstruction and related work (including bike path and retaining walls) along sections of Kilby and Gardner Streets | Massachusetts | Worcester | Active | 5/5/2015 | 5/19/2015 |
| MAR12B578 | MassDOT D2 | Reconstruction of Barre Town Common and related work | Massachusetts | Barre | Active | 4/16/2015 | 4/30/2015 |

# Appendix H: Maintenance Schedule Summary

**Summary of Compliance with Maintenance Matrix - Statewide Permit Year 12**

| | | Activity Schedule | | | | | Permit Year 12 Statewide | |
|---|---|---|---|---|---|---|---|---|
| **Drainage Asset** | **Area/ Note** | **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 | Maintenance and repairs done on an as needed basis. |
| Catch Basins | Roads/ Weigh Stations/ Rest Areas | -- | -- | Annually | ANI | ANI | Yes | |
| | Maintenance Facilities/ Material Storage Yards | Annually | -- | Annually (after snow melt) | ANI | ANI | Yes | Not applicable to all Districts. |
| Extended Detention Basins | Roads/ Weigh Stations/ Rest Areas | Annually | -- | Annually | ANI | ANI | Yes | Not applicable to all Districts. In one district 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. Not applicable to all Districts. |
| Water Quality Swales (including dry swales, bio-filter swales, and wet swales) | Roads/ Weigh Stations/ Rest Areas | -- | -- | Annually | ANI | ANI | Yes | |
| | 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 | |
| Channel Systems | | Annually | -- | -- | Annually | ANI | Yes | Not applicable to all Districts. |
| Outlet Sediment Traps | | -- | -- | Annually | ANI | -- | Yes | Not applicable to all Districts. |
| Vegetated Filters Strip | | Annually | -- | Annually | ANI | ANI | Yes | Not applicable to all Districts. |
| Wet Pond | | -- | -- | Annually | ANI | ANI | Yes | Not applicable to all Districts. |
| Enhanced Wet Pond | | -- | -- | Annually | ANI | ANI | Yes | Not applicable to all Districts. |
| Constructed Storm Water Wetlands | | -- | -- | Annually | ANI | ANI | Yes | Not applicable to all Districts. |
| Recharge Basin | | -- | -- | Twice per year | ANI | ANI | Yes | Maintenance and repairs done on an as needed basis. |
| Leaching Catch Basins | | -- | | Annually | ANI | ANI | Yes | Maintenance and repairs done on an as needed basis. |
| Subsurface Recharge Systems | | -- | -- | Twice annually | ANI | ANI | Yes | Not applicable to all Districts. |
| Recharge Trenches and Beds | | -- | -- | Annually | ANI | ANI | Yes | Not applicable to all Districts |
| Recharge Dry Wells and Galleys | | -- | -- | Annually | ANI | ANI | Yes | Not applicable to all Districts |
| 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 | Not applicable to all Distrcits. |
| Flow Splitters | | -- | -- | Annually | ANI | ANI | N/A | None known |
| Impoundment Structures | | -- | -- | Annually | ANI | ANI | N/A | None known |
| Check Dams | | -- | -- | Annually | ANI | ANI | Yes | Not all inspected, repaired and cleaned as needed in one district. |

**Summary of Compliance with Maintenance Matrix - Statewide Permit Year 12**

| | | Activity Schedule | | | | | Permit Year 12 Statewide | |
|---|---|---|---|---|---|---|---|---|
| **Drainage Asset** | **Area/ Note** | **Mow** | **Sweep** | **Inspect** | **Clean** | **Repair** | **Was Schedule Met?** | **Comments** |
| **OTHER** | | | | | | | | |
| Oil/ Water Separators | Self-test alarm, if so equipped | -- | -- | Weekly | -- | -- | Yes | Maintenance and repairs done on an as needed basis. |
| 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 inpections (based on historic review and usage). Tanks Equipped with High-Level Alarms |
| 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 | Both by MassDOT and Construction Contractor as required by SWPPP. |
| NPDES Construction Site - Repair of erosion controls | | -- | -- | Weekly | ANI | -- | Yes | Both by MassDOT and Construction Contractor as required by SWPPP. |
| NPDES Construction Site - Cleaning of storm water structures | | -- | -- | Weekly | ANI | -- | Yes | Both by MassDOT and Construction Contractor as required by SWPPP. |
| **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 | |

**Summary of Compliance with Maintenance Matrix - Statewide Permit Year 12**

| | | Activity Schedule | | | | | Permit Year 12 Statewide | |
|---|---|---|---|---|---|---|---|---|
| **Drainage Asset** | **Area/ Note** | **Mow** | **Sweep** | **Inspect** | **Clean** | **Repair** | **Was Schedule Met?** | **Comments** |
| **ANI** - As Needed per Inspection | | | | | | | | |
| **N/A** - Not Applicable | | | | | | | | |

# Appendix I: Public Well Supply Matrix and Salt Remediation Program

| ***Property Owner*** | ***Owner/Town*** | ***Address*** | ***Date of Initial Complaint*** | ***Last Data Point (mg/l)*** | ***General Comment Section*** |
|---|---|---|---|---|---|
| Andover | Andover | Chris Cronin, Acting Director Department of Public Works<br>397 Lowell Street<br>Andover, Ma 01810-4416<br>Telephone (978) 623-8350 | 2/22/2000 | March 2016<br>Raw: Na=50, Cl=90<br>Finished: Na=61, l=94 | 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 (RSZ). The RSZ was first implemented in 2005-2006 winter season. New salt shed at Andover River Road/93 was in use for the 2014/2015 winter season. I-93/I-495 has been decommissioned as an active depot. In the 2015-2016 season, MassDOT snow & ice ops eliminated the RSZ and is piloting 200 lb/lane mile application rate in this area. |
| Cambridge | Cambridge Reservoir | Timothy MacDonald, Director of Water Operations Cambridge Water Dept.<br>250 Fresh Pond Parkway<br>Cambridge, MA 02138<br>(671) 349-4773 | Regular monitoring began 1987 | February 2016<br>Hobbs Brook (at intake), Na=99, Cl=206<br>Stoney Brook (at intake) Na =72, Cl= 151<br>Fresh Pond(at intake) Na=96, Cl=188 | 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 of the water supply covering sections of Route 2, 2A and 128. MassDOT met with Cambridge Water Department in 2015. |

| | | | | | |
|---|---|---|---|---|---|
| Dedham/ Westwood | Dedham/West wood | Eileen Commane 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 | Dec 31, 2015<br>Well #5, Na = 106 Cl = 249 | 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 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. A tailgate training session was held at the Westwood depot on Dec 1, 2012. MassDOT committed to monitor BMP's and look for opportunities to improve our operations. Most recent tailgate training 10/24/2015. |
| 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 | 5/27/2015<br># 1 Na=173, Cl=346<br># 2 Na=95.2, Cl=240<br># 3 Na=131, Cl=306<br># 4 Na=166, Cl=379 | 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.<br>High arch gambrel salt shed constructed in fall 2011. |
| | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Auburn | Auburn | Kenneth R. Smith, Supt<br>Auburn Water District<br>P.O. Box 187<br>Auburn, MA 01501<br>(508)832-5336<br>ksmith@auburnwaer.com | 7/2013 | May 2015<br>Church 1 finished –Na= 189<br>Church 3 finished- Na= 190<br>Walsh finished (wells 4&13) Na =170 | Stream stage and conductivity data being logged at 6 locations within Dark Brook Watershed. Runoff discharge and conductivity data for I90 surface drainage outlet logged as well due to a result of elevated sodium concentrations in their public water supply well. |
| Middleboro | Middleboro | Joseph Silva, Water Superintendent<br>Dept. of Public Works<br>48 Wareham Street<br>Middleboro, MA<br>(508) 946-2482 | 8/15/1989 & 2/91 | February 2016<br>Miller Na =35.2 Cl = 56.9<br>Rock 1 Na = 71.4 Cl = 115<br>Rock 2 Na =89.2, Cl=156<br>Tispaquin Na=54.4, Cl=77.5<br>East Grove Na=113, Cl=201 | 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.<br>MassDOT continues to implement reduced salt zone in the area for 40 lane miles of Route 28 and 495.<br>Tailgate training session held in Middleboro on 11/21/13. Meeting between Town and MassDOT Ops/Env to discuss operation in the vicinity of the PWS wells held on 1/24/14. |
| Wilmington | Wilmington | Shelly Newhouse, R.S.<br>Director of Public Health<br>12 Glen Road,<br>Wilmington, MA 01887<br>(978) 658-4298 | 4/29/2005 & 10/19/2011 | December 2015<br>Browns Crossing (raw)<br>Na=152, Cl=344<br>Barrows (raw)<br>Na=175, Cl=423 | 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.. 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. A meeting was held with the Town of Wilmington and DEP on Nov 26, 2012 and we held a tailgate training on Dec 8, 2012 to discuss BMPs. Another meeting between the Town, DEP and MassDOT was held on 11/19/2013. Most recent training12/2014. |

# Appendix J: TMDL Review Table

## Appendix J Final TMDL Information

| Basin/TMDL Name | Pollutant of Concern | WLA Included? | MassDOT relevant BMP recommendations included? | If yes, what are the recommendations? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? |
|---|---|---|---|---|---|
| Blackstone River/ Final TMDLs of Phosphorus for Indian Lake **(BMP 7K)** | Phosphorus | Yes | Yes | TMDL suggests that MassDOT implement the following:<br>1. Reduce impervious surfaces, institute increased street sweeping and catch basin cleaning; install detention basins, etc.<br>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. | MassDOT' s Impaired Waters Program assessments includes 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. |
| 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."<br>2. MassDOT will also be required to apply for the EPA Phase II General Stormwater NPDES Permit by March 10 of 2003.<br>3. The regional office of MassDOT has offered to target high priority watersheds in the region of higher frequency of BMPs and maintenance.<br>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.<br>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.<br>6. Inspect and maintain all structural components of stormwater system on a yearly basis.<br>7. Develop methodology to calculate loadings from highways.<br>8. Conduct pilot project to assess loadings and test BMPs on highways<br>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. | MassDOT has received authorization from EPA to discharge storm water under the general permit for discharges in this watershed.<br>MassDOT' s Impaired Waters Program includes the review of the need for BMPs to address the TMDL. District 3 has agreed to increased maintenance schedule within this watershed.<br>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.<br>Projects are reviewed through MassDOT's Impaired Waters Program and the assessment methods have been developed and reviewed with EPA.<br>See response above (#7).<br>See response above (#4) regarding CBs. MassDOT' s Impaired Waters Program includes the review of the need for BMPs to address the TMDL. |
| Blackstone River/ Final TMDLs of Phosphorus for Leesville Pond **(BMP 7L)** | Phosphorus | Yes | Yes | TMDL suggests that:<br>1. MassDOT should conduct loading study and develop methodology to calculate loadings from highways.<br>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.<br>3. MassDOT and towns of Auburn, Leicester, Paxton, and Millbury should prepare Storm Water Management Plan for Phase II.<br>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. | USGS performed a loading study for MassDOT. The results have been used in the SELDM FHWA/ USGS model. Projects are reviewed through MassDOT's Impaired Waters Program and the assessment methods have been developed for the program and reviewed with EPA.<br>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. MassDOT' s Impaired Waters Program will include the review of the need for BMPs to address the TMDL.<br>MassDOT has received authorization from EPA and DEP to discharge storm water under the general permit for discharges in this watershed.<br>See response above (#2). |

## Appendix J Final TMDL Information

| Basin/TMDL Name | Pollutant of Concern | WLA Included? | MassDOT relevant BMP recommendations included? | If yes, what are the recommendations? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? |
|---|---|---|---|---|---|
| Blackstone River/ TMDLs of Phosphorus for Selected Northern Blackstone Lakes **(BMP 7N)** | Phosphorus | Yes | Yes | TMDL suggests that MassDOT should regulate road sanding, salting, regular sweeping, and installation of BMPs (for these impaired waterbodies). | 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. |
| Blackstone River/ Final TMDLs of Phosphorus for Salisbury Pond **(BMP 7O)** | Phosphorus | Yes | Yes | TMDL indicates that:<br><br>1. MassDOT should develop methodology to calculate loadings from highways and conduct pilot projects to assess loadings and test BMPs on highways.<br><br>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.<br><br>3. MassDOT will also be required to apply for the EPA Phase II General Stormwater NPDES Permit by March 10 of 2003. | <br><br>USGS performed a loading study for MassDOT. The results were used in the SELDM FHWA/ USGS model. Projects are reviewed through MassDOT's Impaired Waters Program and the assessment methods were developed for that program and reviewed with EPA.<br><br>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.<br><br>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. |
| Addendum: Final TMDL of Bacteria for Neponset River Basin (CN 121.5) | Bacteria | Yes | No | -- | -- |
| Buzzards Bay/Final TMDL of Total Phosphorus for White Island Pond | Phosphorus | Yes | No | -- | -- |
| Cape Cod/ Final Lagoon Pond TMDLs for Total Nitrogen | Total Nitrogen | Yes | No | -- | -- |
| Cape Cod/ Final Nutrient TMDL for Centerville River/East Bay | Total Nitrogen | Yes | No | -- | -- |
| Cape Cod /Final Nitrogen TMDL for Little Pond | Total Nitrogen | Yes | No | -- | -- |
| Cape Cod/ Final Nitrogen TMDL for Oyster Pond | Total Nitrogen | Yes | No | -- | -- |
| Cape Cod/ Final Nitrogen TMDL for Phinneys Harbor | Total Nitrogen | Yes | No | -- | -- |
| Cape Cod/Final Nitrogen TMDL for Pleasant Bay System | Total Nitrogen | Yes | No | -- | -- |
| Cape Cod/Final Nitrogen TMDL Report for Five Sub-Embayments of Popponesset Bay | Total Nitrogen | Yes | No | -- | -- |
| Cape Cod/Final Nitrogen TMDL Report for the Quashnet River, Hamblin Pond, Little River, Jehu Pond, and Great River in the Waquoit Bay System | Total Nitrogen | Yes | No | -- | -- |
| Cape Cod/Final Pathogen TMDL for the Three Bays Watershed | 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.<br><br>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 should also continue to identify and implement to the maximum extent practicable best management practices so that the water quality standard for bacteria in SA waters is met. | MassDOT has completed the statewide review of TMDL watersheds for the need for additional BMPs to meet the TMDL recommendations. If additional BMPs were identified, they have been or will be included in future construction projects.<br><br>MassDOT has completed the statewide review of TMDL watersheds for the need for additional BMPs to meet the TMDL recommendations. If additional BMPs were identified, they have been or will be included in future construction projects. |

## Appendix J Final TMDL Information

| Basin/TMDL Name | Pollutant of Concern | WLA Included? | MassDOT relevant BMP recommendations included? | If yes, what are the recommendations? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? |
|---|---|---|---|---|---|
| Cape Cod/Final Pathogen TMDL Report for the Cape Cod Watershed | Pathogens | Yes | No | 1. Development of comprehensive stormwater management programs, particulary in close proximity to each embayment, inlcuding identification and implementation of BMPs.<br><br>2. Illicit discharge detection and elimination (where applicable). | MassDOT has completed the statewide review of TMDL watersheds for the need for additional BMPs to meet the TMDL recommendations. If additional BMPs were identified, they have been or will be included in future construction projects.<br>MassDOT has reviewed outfalls for potential illicit discharges and found that the linear nature of their roads leads to minimal chances for illicit connections. MassDOT has focused on education of staff and following up on potential illicit connections and focusing reviews on sensitive receiving waters. MassDOT is currently prioritizing watersheds for focused illicit discharge review.<br>Remaining potential pollution sources to Oyster Pond are believed to be several large stormwater discharges discharging into the east end of the pond. These stormwater discharges drain from Route 28, and Main St. MassDOT has plans to fix the problems coming off Route 28, and the Town of Chatham has performed engineering projects to eliminate/treat the stormwater components coming off Main St. |
| Approval of the Pathogen TMDL Addendum for the Cape Cod Watershed | Bacteria | Yes | No | -- | -- |
| Cape Cod Final Nitrogen TMDL Report for the Three Bays System | Total Nitrogen | Yes | No | -- | -- |
| Cape Cod/Final Nitrogen TMDL for West Falmouth Harbor | Total Nitrogen | Yes | No | -- | -- |
| 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 | -- | -- |
| 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 i D(1-4), as it pertains to approved TMDLs." MassDEP has not deferred to the Route 28 reconstruction project since we do not have any information about the extent or the time schedule for it. MassDEP also suggests that the MassDOT Dept. work with the Town of Chatham to work out a reasonable schedule for these activities. | MassDOT has completed the statewide review of TMDL watersheds for the need for additional BMPs to meet the TMDL recommendations. If additional BMPs were identified, they have been or will be included in future construction projects. |
| Cape Cod/Final TMDLs of Nitrogen for Great, Green, and Bournes Pond Embayment Systems | Total Nitrogen | Yes | No | -- | -- |
| 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 i D(1-4), as it pertains to approved TMDLs." MassDEP has not deferred to the Route 28 reconstruction project since we do not have any information about the extent or the time schedule for it. MassDEP also suggests that the MassDOT Dept. work with the Town of Chatham to work out a reasonable schedule for these activities. | MassDOT has completed the statewide review of TMDL watersheds for the need for additional BMPs to meet the TMDL recommendations. If additional BMPs were identified, they have been or will be included in future construction projects. |

## Appendix J Final TMDL Information

| Basin/TMDL Name | Pollutant of Concern | WLA Included? | MassDOT relevant BMP recommendations included? | If yes, what are the recommendations? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? |
|---|---|---|---|---|---|
| Charles River/Final Phosphorus TMDL Report for the Lower Charles River Basin | Total Phosphorus | Yes | Yes | TMDL suggests MassDOT:<br>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.<br>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 includes the review of the need for BMPs to address the TMDL. |
| Charles River/ Final Pathogen TMDL Reports for the Charles River Watershed | Pathogens | Yes | No | -- | -- |
| Charles River/ TMDL for Nutrients in the Upper/Middle Charles River | Phosphorus | Yes | Yes | TMDL suggests MassDOT:<br>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.<br>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 assessments includes the review of the need for BMPs to address the TMDL. |
| Chicopee River/Final TMDLs of Phosphorus for Quaboag and Quacumquasit Ponds | Total Phosphorus | Yes | Yes | The TMDL suggests that MassDOT:<br>1. Regulate road sanding, salting, regular sweeping, and installation of BMPs. | 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. |
| | | | | 2. Perform roadway sweeping and catch basin inspection/cleaning twice a 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. |
| | | | | 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. | 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. |
| | | | | 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' s Impaired Waters Program assessments includes the review of the need for BMPs to address the TMDL. |
| Chicopee River /Final TMDLs of Phosphorus for Selected Chicopee Basin Lakes<br>**(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. |
| Connecticut River/ Final TMDLs of Phosphorus for Selected Connecticut Basin Lakes<br>**(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. | 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. |
| Edgartown Great Pond | Total Nitrogen | Yes | No | -- | -- |
| Farm Pond Estuarine System | Total Nitrogen | Yes | No | -- | -- |

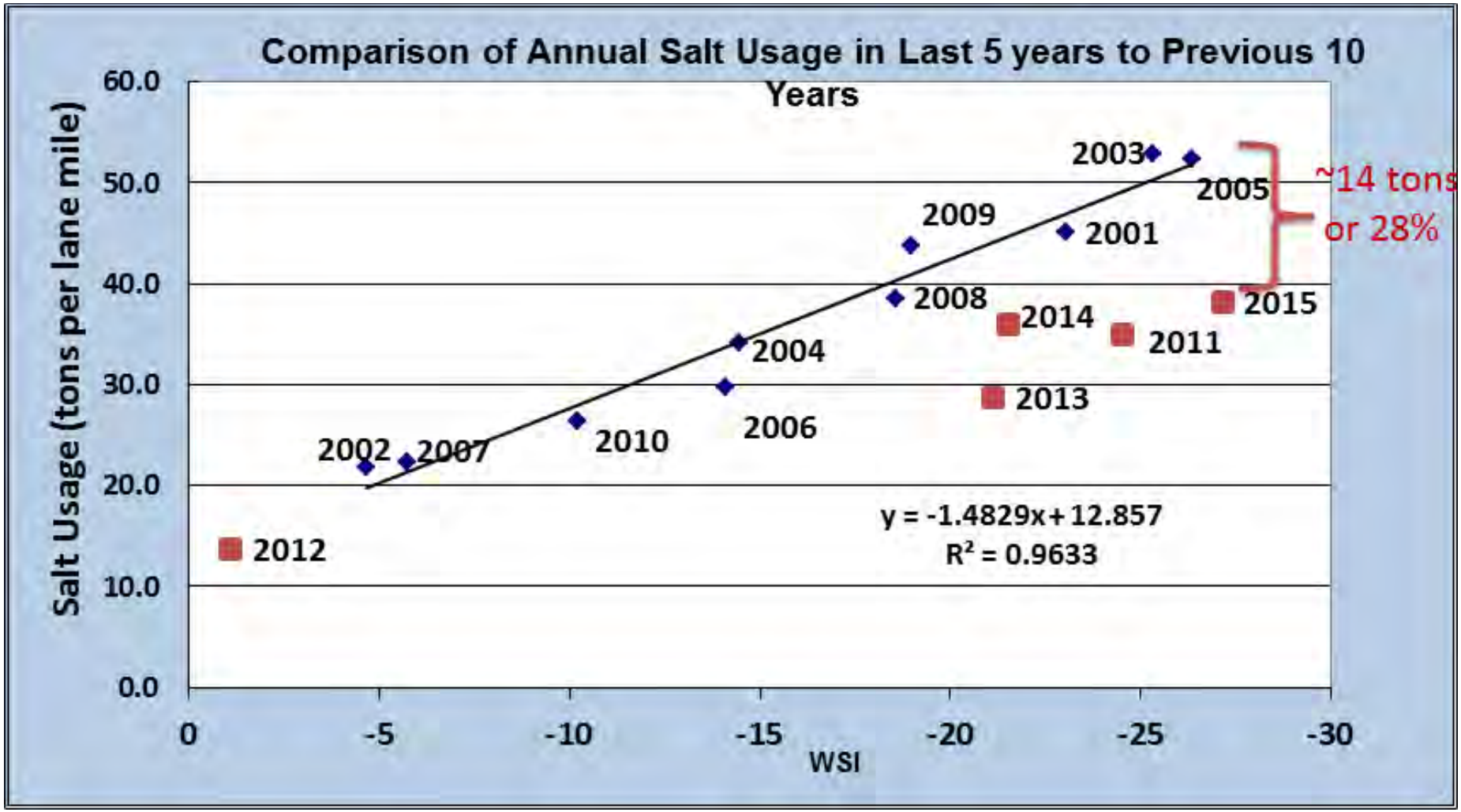
## Appendix J Final TMDL Information

| Basin/TMDL Name | Pollutant of Concern | WLA Included? | MassDOT relevant BMP recommendations included? | If yes, what are the recommendations? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? |
|---|---|---|---|---|---|
| Final Pathogen TMDL for the Buzzards Bay Watershed | Pathogens | Yes | Yes | Development of comprehensive storm water management programs including identification and implementation of BMPs | MassDOT has completed the statewide review of TMDL watersheds for the need for additional BMPs to meet the TMDL recommendations. If additional BMPs were identified, they have been or will be included in future construction projects. |
| | | | | 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 has reviewed outfalls for potential illicit discharges and found that the linear nature of their roads leads to minimal chances for illicit connections. MassDOT has focused on education of staff and following up on potential illicit connections and focusing reviews on sensitive receiving waters. MassDOT is currently prioritizing watersheds for focused illicit discharge review. |
| Final Pathogen TMDL for the North Coastal Watershed | Bacteria | Yes | No | -- | -- |
| Final Pathogen TMDL for the Taunton River Watershed | Bacteria | Yes | No | -- | -- |
| French River/ Final TMDLs of Phosphorus for Selected French Basin Lakes **(BMP 7J)** | Phosphorus | Yes | Yes | TMDL suggests: | |
| | | | | 1. MassDOT conduct loading study and develop methodology to calculate loadings from highways. | 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. |
| | | | | 2. MassDOT and local towns should initiate twice yearly sweeping and catch basin inspection and cleaning program along MassDOT I-395, and other roadways. | 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. A summary of maintenance activities across the state is included as Appendix E of the annual report. |
| | | | | 3. MS4s should install additional BMPs as needed to address pollutant loadings identified above. | MassDOT' s Impaired Waters Program includes the review of the need for BMPs to address the TMDL. |
| | | | | 4. MassDOT and the towns of Charlton, Leicester and Oxford should prepare Storm Water Management Plans for Phase II. (implementation activity specific to these impaired waterbodies) | 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. |
| | | | | 5. MassDOT should regulate road sanding, salting, regular sweeping, and installation of BMPs (implementation activity specific to these impaired waterbodies). | 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 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. MassDOT believes that the most cost-effective approach to improving stormwater quality is to focus on source control measures, rather than end-of-pipe BMPs. Two important examples include reducing winter road sand application rates, and stabilizing shoulder areas that erode onto road surfaces. Source reduction measures are described in this NPDES Stormwater Management Plan. |
| Lewis Bay and Halls Creek System | Total Nitrogen | Yes | No | -- | -- |
| Madaket Harbor and Long Pond Estuarine system | Total Nitrogen | Yes | No | -- | -- |
| Millers River/Final TMDLs of Phosphorus for Selected Millers River Basin Lake **(BMP 7M)** | Phosphorus | Yes | Yes | TMDL suggests that MassDOT should better manage road sanding, salting, regular sweeping, and installation of BMPs (specific to these impaired waterbodies). | MassDOT' s Impaired Waters Program includes the review of the need for BMPs to address the TMDL. |

## Appendix J Final TMDL Information

| Basin/TMDL Name | Pollutant of Concern | WLA Included? | MassDOT relevant BMP recommendations included? | If yes, what are the recommendations? | How is MassDOT currently meeting these recommendations or how does MassDOT plan to meet them in the future? |
|---|---|---|---|---|---|
| Multi-State /Final Bacteria and Total Phosphorus TMDL Report for the Kickemuit 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. | 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. |
| Multi-State/ Northeast Regional Mercury Total Maximum Daily Load | Mercury | Yes | No | -- | -- |
| Approval of the Northeast Regional Mercury TMDL: Addendum for Massachusetts | Mercury | Yes | No | -- | -- |
| Narragansett Bay/ Final Bacteria TMDL for Palmer River Basin | Bacteria | Yes | No | -- | -- |
| 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. | MassDOT's Impaired Waters Program includes the review of the need for BMPs to address impaired waters potentially impacted by MassDOT urban area roads. |
| Nashua River/ Final TMDL for Bare Hill Pond | Nuisance Aquatic Plants | Yes | No | -- | -- |
| Sengekontacket Pond Estuarine System | Total Nitrogen | Yes | No | -- | -- |
| Shawsheen River/Final TMDLs of Bacteria for Shawsheen River Basin | Bacteria | Yes | No | -- | -- |
| South Coastal/ Final Pathogen TMDL for the South Coastal Watershed | Pathogens | Yes | | Development of comprehensive storm water management programs including public education and participation, illicit discharge detection and elimination, construction and post construction runoff control, and pollution prevention/good housekeeping. MassDOT is not specifically identified and the focus is instead on the municipalities within the watershed. | MassDOT has received full authorization to discharge under EPA's NPDES MS4 general permit. MassDOT's Storm Water Management Program (SWMP) includes comprehensive measures for each of the six minimum control measures. MassDOT's Impaired Waters Program includes the review of the need for BMPs to address impaired waters potentially impacted by MassDOT urban area roads. |
| South Coastal/ Final TMDLs of Bacteria for Little Harbor, Cohasset | Fecal Coliform | Yes | No | -- | -- |
| SuAsCo/Assabet River TMDL for Total Phosphorus | Phosphorus | Yes | No | -- | -- |
| SuAsCo/ Final TMDLs of Phosphorus for Lake Boon (Boons Pond) | Phosphorus | Yes | No | -- | -- |

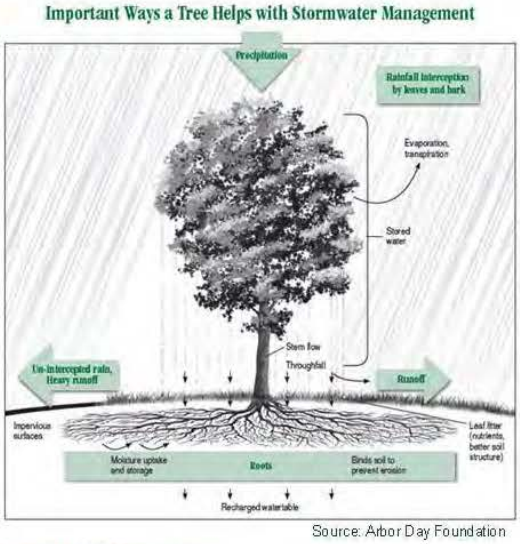
# Appendix K: Comparison of Annual Salt Usage


Comparison of Annual Salt Usage in Last 5 years to Previous 10 Years
Salt Usage (tons per lane mile)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
0
-5
-10
-15
-20
-25
-30
WSI
2003
2005
2009
2001
2008
2014
2015
2011
2004
2013
2006
2002
2007
2010
2012
~14 tons
or 28%
y = -1.4829x + 12.857
R² = 0.9633

# Appendix L: MACC Conference Handout

# Coldwater Fisheries and Stormwater Management

MACC Annual Conference
March 5, 2016



Source: Arbor Day Foundation

## Stormwater Management Goals

### Maximum Extent Practicable with logic in mind

- Reduce impervious cover
- Reduce runoff volume
- Manage the first flush
- Promote country drainage
- Maintain tree cover
- Use vegetated slopes (riprap & reinforced soil)
- Eliminate exposed soils
- Limit standing water
- Decrease exposed hardscapes

### Resources

NC State University: Temperature/Thermal Load Migiation Provided by Stormwater BMPs Powerpoint

•https://www.dot.state.oh.us/Divisions/Planning/LocalPrograms/LTAP/Full%20Page%20Slide%20Presentation%20Files/9.ThermalLoadsBMPs.pdf

NC State University: Stormwater BMPs and Runoff Temperature

•http://www.bae.ncsu.edu/topic/bmp-temperature/

UNH Stormwater Center: Examination of Thermal Impacts from Stormwater BMPs

•http://www.unh.edu/unhsc/sites/unh.edu.unhsc/files/progress_reports/UNHSC%20EPA_Thermal_Study_Final_Report_1-28-11.pdf

massDOT Massachusetts Department of Transportation Highway Division

# MassDOT Stormwater Management
# Impaired Waters Program Update

## Impaired Waters Assessment Findings

| | |
|---|---|
| No MassDOT Discharge | 243 |
| No Roadway Runoff Related Impairment | 134 |
| No Significant MassDOT Contribution to Impairment | 125 |
| MassDOT Contribution to Impairment | 182 |
| Total Waterbody Segments Assessed | 684 |


## Impaired Waters Program BMP Status

Identifying BMPs for 155 Impaired Segments

Spent $27.5 million in Stormwater Retrofit construction to date

Allocated $21 million for design and construction from 2016-2020

## Impaired Waters Program BMPs Constructed or in Design

| | | |
|---|---|---|
| 120 Infiltration Basins | 91 Infiltration Swales | 29 Underground Infiltration Structures |
| 15 Bioretention Basins/Swales | 3 Constructed Wetlands | 1 Gravel Wetland |

### Contact

Annie Bastoni
Stormwater Program Coordinator
MassDOT—Highway Division
anne.bastoni@dot.state.ma.us
857.368.8815

massDOT Massachusetts Department of Transportation Highway Division

# Appendix M: Baystate Roads Trainings

**Baystate Roads Trainings from March 2016-April 2015**

| Workshop | City | Date | # Registered/Capacity |
|---|---|---|---|
| Proposals for Cleaner Water: A Grant Writing Workshop | Haverhill | 3/30/2016 | 41/41 |
| Complete Streets 101 – Benefits, Eligibility & Funding | West Springfield | 3/23/2016 | 22/30 |
| Proposals for Cleaner Water: A Grant Writing Workshop | Taunton | 3/22/2016 | 31/50 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Nantucket | 3/18/2016 | 18/30 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Falmouth | 3/17/2016 | 25/30 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Oak Bluffs | 3/16/2016 | 23/30 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Quincy | 3/14/2016 | 28/30 |
| 2016 Innovation & Tech Transfer Exchange | Worcester | 3/8/2016 | 784/800 |
| Gravel Roads: When the Dust Settles | Northampton | 3/3/2016 | 35/35 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Hyannis | 3/2/2016 | 25/30 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Marlborough | 3/1/2016 | 31/32 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Brockton | 2/29/2016 | 35/35 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Fitchburg | 2/25/2016 | 27/30 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Boston | 2/24/2016 | 30/31 |
| Gravel Roads: When the Dust Settles | Pittsfield | 2/23/2016 | 10/30 |
| Complete Streets 101 – Benefits, Eligibility & | Waltham | 2/23/2016 | 30/32 |

| | | | |
|---|---|---|---|
| Funding | | | |
| Complete Streets 101 – Benefits, Eligibility & Funding | Malden | 2/19/216 | 31/31 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Taunton | 2/18/2016 | 32/32 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Worcester | 2/16/2016 | 31/32 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Springfield | 2/10/2016 | 39/40 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Greenfield | 2/05/216 | 22/30 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Pittsfield | 2/4/2016 | 33/33 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Lawrence | 2/1/2016 | 26/30 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Gardner | 1/28/2016 | 22/30 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Devens | 1/27/2016 | 26/30 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Hadley | 1/26/216 | 26/30 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Bedford | 1/25/2016 | 39/40 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Boston | 1/22/2016 | 49/49 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Taunton | 1/12/2016 | 44/46 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Worcester | 1/5/2016 | 46/50 |
| Complete Streets 101 – Benefits, Eligibility & Funding | Greenfield | 12/16/2015 | 46/50 |

| | | | |
|---|---|---|---|
| Complete Streets 101 – Benefits, Eligibility & Funding | Pittsfield | 12/11/2015 | 39/40 |
| Snow & Ice Operations | Taunton | 11/18/2015 | 39/39 |
| Snow & Ice Operation | Taunton | 11/12/2015 | 36/38 |
| 2015 Moving Together Conference | Boston | 11/4/2015 | 741/800 |
| Snow & Ice Operations | Chelmsford | 10/27/2015 | 35/35 |
| Creating Revenue Stream for Stormwater Management | Taunton | 10/22/2015 | 57/57 |
| Pavement Management Boot Camp | Greenfield | 10/21/2015 | 43/43 |
| Creating Revenue Stream for Stormwater Management | Hadley | 10/20/2015 | 50/52 |
| Creating Revenue Stream for Stormwater Management | Marlborough | 10/15/2015 | 55/56 |
| Snow & Ice Operations | Sturbridge | 10/14/2015 | 30/35 |
| Snow & Ice Operations | Leominster | 10/08/2015 | 20/30 |
| Snow & Ice Operations | Northampton | 10/05/2015 | 24/30 |
| Pavement Management Boot Camp | Leominster | 10/01/2015 | 37/37 |
| Snow & Ice Operations | Lenox | 9/29/2015 | 17/30 |
| Trenching & Excavating Safety: Competent Person | Taunton | 04/02/2015 | 38/41 |
| Trenching & Excavating Safety: Competent Person | Taunton | 4/1/2015 | 38/38 |

**http://baystateroads.eot.state.ma.us/workshops/index/page:1**

**Total # of Workshops:** 47

**Type of Workshops:**

-Proposals for Cleaner Water: A Grant Writing Workshop

- Complete Streets 101 – Benefits, Eligibility & Funding

-2016 Innovation & Tech Transfer Exchange

- Snow & Ice Operations

-2015 Moving Together Conference

-Creating Revenue Stream for Stormwater Management

-Pavement Management Boot Camp

-Trenching & Excavating Safety: Competent Person

-Gravel Roads: When the Dust Settles

**Total Participants:** 3,006

## Appendix N: MassDOT Blog Posts

**MassDOT Stormwater Management Along the Charles River**

http://blog.mass.gov/transportation/massdot-highway/massdot-stormwater-management-along-the-charles-river/

MAR 24
2016



Weston Tolls – Wet Pond construction complete

MassDOT's mission is to provide a safe and reliable transportation system, while protecting and enhancing the environment wherever possible. One important way MassDOT works to enhance the environment is to improve the water quality of rivers and streams across the Commonwealth, including the Charles River, by upgrading its stormwater management system.

Stormwater is rain or melted snow that has run off impervious or saturated surfaces such as lawns or roads. As runoff flows over highway pavement it can pick up pollutants such as sediments, nutrients, metals, and trash. Rather than naturally infiltrating into the ground, this polluted stormwater is often collected and conveyed by drainage systems that directly discharge to a water body. MassDOT's stormwater management project area in this case is the Charles River.

Boston- I-90 Westbound- Infiltration Basin construction

Great strides have been made to improve the water quality of the Charles River over the years through sewage treatment plant upgrades and removal of Combined Sewer Overflows. More needs to be done to minimize persistent problems such as algal blooms that the River faces today. An important part of this effort has been to install Best Management Practices including infiltration basins and swales and a wet pond along the Charles to provide stormwater treatment and reduce pollutants to the River.

These practices manage both the quality and quantity of stormwater runoff by capturing most runoff events and mimicking natural "pre-development" conditions. The practices for this project along the I-90 corridor between Weston and Boston include 23 infiltration basins and swales and a wet pond.

The infiltration systems are especially effective in treating stormwater because most soils have a high capability for capturing pollutants, in addition to facilitating ground water recharge. And wet ponds work by attenuating stormwater, thereby allowing sediments and associated pollutants to settle before being conveyed and discharged.

So far 16 basins have been installed and several are currently in construction. Plantings and seeding are being incorporated throughout the work zones to enhance the appearance of the installations. The project's anticipated completion date is December 2016. These installations are just one example of MassDOT's continuing efforts to protect the environment and mitigate the impacts of highway runoff on adjacent waterbodies.

**Lexington Route 2 Bridges: As Construction Advances, So Does Environmental Protection**
http://blog.mass.gov/transportation/massdot-highway/lexington-route-2-bridges-as-construction-advances-so-does-environmental-protection/

SEP 30 2015



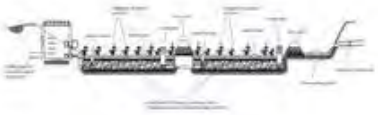
A roadside pond is being constructed next to Route 2 West by Exit 32A to collect and treat stormwater runoff.

MassDOT is not only replacing bridges for the Route 2/I-95 Bridge Replacement Project in Lexington, it's also taking steps to ensure the surrounding environment is protected and improved (see the project map on our website).

"Greening" measures will safeguard a key neighbor of the construction site from pollution, the Hobbs Brook Reservoir and its watershed, which is a source of drinking water for the City of Cambridge.

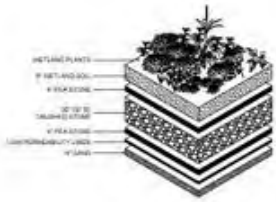
Protecting the environment, including nearby drinking water supplies, is an essential part of any MassDOT project. To protect this vital resource, MassDOT will construct a landscape buffer between Route 2 West and the Hobbs Brook Reservoir. The buffer will consist of more than 50 deciduous trees, more than 50 evergreen trees, and more than 400 shrubs. These native plants will act as natural water filters and defend against erosion and sediment buildup. Along with these ecological methods of protection, permanent, man-made stormwater management upgrades will be added to the existing system.

The proper management of stormwater runoff (rain or melting snow) is especially crucial near drinking water supplies like the Hobbs Brook Reservoir. Stormwater carries debris and pollutants from the roadway to waterbodies such as streams and reservoirs.



Cross section of a gravel wetland, an innovative method being used on the Route 2/I-95 Bridge Replacement Project to filter pollution from stormwater runoff.

Throughout the Route 2/I-95 site, the reservoir is shielded from the construction. Onsite systems will capture and treat stormwater during construction and after it's complete. Conventional catch basins will be upgraded to remove more pollutants before releasing runoff into storm drains. The project will also construct roadside ponds or basins to collect and treat runoff as it's absorbed into the ground before flowing to nearby waterbodies. These basins and ponds are built differently depending on their location and how much treatment they must provide. They typically rely on natural features, such as plants, to filter runoff. MassDOT's innovative spirit extends beyond its choice of Intelligent Compaction for the Route 2/I-95 project to environmental protection. An even more complex environmental improvement will be the creation of six wetland areas that use a gravel base to remove more pollutants.



3-D view of a gravel wetland.

Water quality isn't the only environmental facet being protected. Crews are also removing invasive (non-native) plant species, such as phragmites (common reed) and Japanese knotweed. Invasive species crowd out our native plant life and create a lower quality habitat for wildlife. MassDOT will replant species native to our state to help restore and strengthen the surrounding ecosystem.

All of these environmental protection measures provide an example of "green" technologies that MassDOT is using to protect public safety and the environment for our customers – now and in the future.