

RIPDES Small MS4 Annual Report

City of Woonsocket
Woonsocket, Rhode Island

March 2019



FUSS & O'NEILL

317 Iron Horse Way
Suite 204
Providence, RI 02908

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RHODE ISLAND DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
Office of Water Resources

DEM USE ONLY

Date Received _____

RIPDES SMALL MS4 ANNUAL REPORT
GENERAL INFORMATION PAGE

RIPDES PERMIT #RIR0400 16 _____

REPORTING PERIOD:

☒ **YEAR 15**

Jan 2018-Dec 2018

OPERATOR OF MS4

Name: CITY OF WOONSOCKET			
Mailing Address: 169 MAIN STREET			
City: WOONSOCKET	State: RI	Zip: 02895	Phone: (401) 767-9216
Contact Person: Mike Debrousse	Title: Superintendent-Solid Waste/Engineering		
	Email: MDebrousse@woonsocketri.org		
Legal status (circle one): PRI - Private PUB - Public BPP - Public/Private STA - State FED - Federal			
Other (please specify):			

OWNER OF MS4 (if different from OPERATOR)

Name:			
Mailing Address:			
City:	State:	Zip:	Phone: ()
Contact Person:	Title:		
	Email:		

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under the 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, I certify that 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.	
Print Name	<u>Lisa Baldelli-Hunt</u>
Print Title	<u>City Mayor</u>
Signature	<u><i>Lisa Baldelli-Hunt</i></u>
	Date <u>03-01-19</u>



MINIMUM CONTROL MEASURE #1: PUBLIC EDUCATION AND OUTREACH (Part IV.B.1 General Permit)

SECTION I. OVERALL EVALUATION:

GENERAL SUMMARY, STATUS, APPROPRIATENESS AND EFFECTIVENESS OF MEASURABLE GOALS:

Include information relevant to the implementation of each measurable goal, such as activities, topics addressed, audiences and pollutants targeted. Discuss activities to be carried out during the next reporting cycle. If addressing TMDL requirements, please indicate rationale for choosing the education activity to address the pollutant of concern.

(Note: Identify parties responsible for achieving the measurable goals and reference any reliance on another entity for achieving measurable goals. Mark with an asterisk (*) if this person/entity is different from last year.)

Responsible Party Contact Name & Title: Michael Debrousse, Superintendent- Solid Waste/Engineering

Phone: (401) 767-9216 **Email:** MDebrousse@woonsocketri.org

IV.B.1.b.1 Use the space below to provide a General Summary of activities implemented to educate your community on how to reduce stormwater pollution. For TMDL affected areas, with stormwater associated pollutants of concern, indicate rationale for choosing the education activity. List materials used for public education and topics addressed. Summarize implementation status and discuss if the activity is appropriate and effective.

The City relies on the Storm Water Education and Outreach Program in cooperation with URI to meet this measurable goal. The City continues to implement their stormwater website (<https://www.woonsocketri.org/stormwater-management>) to educate the community on how to reduce storm water pollution. In general, the website describes the general permit requirements, provides a complaint form, and offers recommendations for low impact development. The website also links to the Blackstone River Coalition's website where there is additional educational information on stormwater quality, BMPs, and LID.

In previous years, the school department has incorporated environmental education into school curriculum. In 2013, the Woonsocket High School received \$330 from the Blackstone River Watershed Council to purchase supplies to implement the "Fish in the Classroom" project. The city will pursue education and outreach opportunities with the schools in the future as opportunities come up.

The Engineering Department is responsible for this measure. The City will continue to educate the community on how to reduce storm water in upcoming years as opportunities arise.

IV.B.1.b.2 Use the space below to provide a general summary of how the public education program was used to educate the community on how to become involved in the municipal or statewide stormwater program. Describe partnerships with governmental and non-governmental agencies used to involve your community.

The City relies on the Storm Water Education and Outreach Program in cooperation with URI to meet this measurable goal. The City's website for storm water includes links to organizations that provide educational materials and public involvement opportunities, including the Blackstone River Coalition. The City works with these organizations to provide assistance with any public involvement opportunities.

As in past years, the City sponsored an Earth Day cleanup event on May 5, 2018. A flyer advertising this event is included as *Attachment 2*. The City previously developed a letter and brochure to distribute to businesses which describes proper maintenance of structural BMPs. The letter/brochure is included in this report as *Attachment 3*. This letter and brochure is now distributed to all owners upon completion of post-construction inspections. The City also held a hazardous waste collection day with RI Resource Recovery Corporation Eco-Depot on May 19, 2018. This event offered free e-waste and hazardous waste collection. A flyer advertising this event is provided as *Attachment 4*.

This measure has been appropriate and effective. The City will continue to educate the community on how to become involved in the storm water program. The Engineering Department is responsible for this measure.

PUBLIC EDUCATION AND OUTREACH cont'd

Check all topics that were included in the Public Education and Outreach program during this reporting period. For each of the topics selected, provide the target pollutant (e.g. construction sites, total suspended solids):

Topic	Target Pollutant(s)
<input checked="" type="checkbox"/> Construction Sites	TSS
<input type="checkbox"/> Pesticide and Fertilizer Application	
<input type="checkbox"/> General Stormwater Management Information	
<input checked="" type="checkbox"/> Pet Waste Management	Pathogens
<input checked="" type="checkbox"/> Household Hazardous Waste Disposal	Household Hazardous Waste, expired prescriptions
<input checked="" type="checkbox"/> Recycling	Recyclables including e-wastes
<input type="checkbox"/> Illicit Discharge Detection and Elimination	
<input type="checkbox"/> Riparian Corridor Protection/Restoration	
<input type="checkbox"/> Infrastructure Maintenance	
<input checked="" type="checkbox"/> Trash Management	Refuse and Recycling, White goods and bulk items, leaves and yard waste
<input type="checkbox"/> Smart Growth	
<input checked="" type="checkbox"/> Vehicle Washing	Nutrients, Surfactants
<input checked="" type="checkbox"/> Storm Drain Marking	
<input type="checkbox"/> Water Conservation	
<input type="checkbox"/> Green Infrastructure/Better Site Design/LID	
<input type="checkbox"/> Wetland Protection	
<input type="checkbox"/> Other:	
<input type="checkbox"/> None	

Specific audiences targeted during this reporting period:

- | | |
|---|--|
| <input type="checkbox"/> Public Employees | <input checked="" type="checkbox"/> Contractors |
| <input checked="" type="checkbox"/> Residential | <input type="checkbox"/> Developers |
| <input type="checkbox"/> Businesses | <input checked="" type="checkbox"/> General Public |
| <input type="checkbox"/> Restaurants | <input type="checkbox"/> Industries |
| <input checked="" type="checkbox"/> Other: Students | <input type="checkbox"/> Agricultural |

Additional Measurable Goals and Activities

Please list all stormwater training attended by your staff during the 2018 calendar year and list the name(s) and municipal position of all staff who attended the training.

Trainings:

National Stormwater Center Training Course: February 16, 2018 (*Attachment 5*).

Healthy Trees for everyone: February 22, 2018 (*Attachment 6*).

An Orientation to the Floodplain Management Field in Rhode Island: February 27, 2018 (*Attachment 7*).

RIDOT Linear Stormwater Manual Workshop: November 2018 (*Attachment 8*).

RIDEM Multi-sector General Permit Workshop: December 2018

Attending name of staff and title: Michael Debrousse, Superintendent-Solid Waste/Engineering

Attending name of staff and title: Timothy Brundrett, Engineering Assistant

Attending name of staff and title: Brad Ward, Building Official



MINIMUM CONTROL MEASURE #2: PUBLIC INVOLVEMENT/PARTICIPATION (Part IV.B.2 General Permit)

SECTION I. OVERALL EVALUATION:

GENERAL SUMMARY, STATUS, APPROPRIATENESS AND EFFECTIVENESS OF MEASURABLE GOALS:

Include information relevant to the implementation of each measurable goal, such as types of activities and audiences/groups engaged. Discuss activities to be carried out during the next reporting cycle. If addressing TMDL requirements, please indicate rationale for the activities chosen to address the pollutant of concern.

(Note: Identify parties responsible for achieving the measurable goals and reference any reliance on another entity for achieving measurable goals. Mark with an asterisk (*) if this person/entity is different from last year.)

Responsible Party Contact Name & Title: Michael Debrousse, Superintendent- Solid Waste/Engineering

Phone: (401) 767-9216 **Email:** MDebrousse@woonsocketri.org

IV.B.2.b.2.ii Use the space below to describe audiences targeted for the public involvement minimum measure, include a description of the groups engaged, and activities implemented and if a particular pollutant(s) was targeted. If addressing TMDL requirements indicate how the audience(s) and/or activity address the pollutant(s) of concern. Name of person(s) and/or parties responsible for implementation of activities identified. Assess the effectiveness of BMP and measurable goal.

The City works with several groups that are active in promoting clean water, including the schools and the Blackstone River Coalition. A city-sponsored Earth Day cleanup event was held on May 5, 2018. This successful event involved the collection of trash and debris. Residents were also encouraged to pick up litter along the street they live on. The City and Waste Management of RI provided volunteers with trash bags, gloves, and trash pickers for the event.

From September 15, 2017 to September 15, 2018, as in the previous six years, the Woonsocket Stormwater Task Force made up to \$16,576 of funding available to support projects that improve the management of stormwater on private and/or public property within the City of Woonsocket and ultimately lead to improvements in the water quality of the Blackstone River (see *Attachment 9*).

In 2018, the City worked with two university students to utilize funding available from the Woonsocket Thundermist Task Force (*Attachment 10*). The funding is being used to identify locations throughout the city where green infrastructure projects could be placed that would have positive impacts on water quality. Twelve potential sites have been identified through this process and the sites are located within areas that have identified by DEM as priority drainage areas. The analysis also took waterbodies affected by TMDLs into consideration. The results of the analysis to date are provided in *Attachment 11*.

The City of Woonsocket Department of Public Works is actively sponsoring a Rain Barrel Program to encourage the public (e.g., homeowners) to reuse roof runoff for gardening, lawn watering, and other similar purposes. Further information regarding this program can be found at: http://www.woonsocketri.org/sites/woonsocketri/files/uploads/rain_barrel_flyer.pdf

These measures are effective for public involvement and engaging the community. The City will continue to explore new opportunities as they arise.

Opportunities provided for public participation in implementation, development, evaluation, and improvement of the Stormwater Management Program Plan (SWMPP) during this reporting period. Check all that apply:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Cleanup Events | <input type="checkbox"/> Storm Drain Markings |
| <input type="checkbox"/> Comments on SWMPP Received | <input type="checkbox"/> Stakeholder Meetings |
| <input checked="" type="checkbox"/> Community Hotlines | <input checked="" type="checkbox"/> Volunteer Monitoring |
| <input type="checkbox"/> Community Meetings | <input checked="" type="checkbox"/> Plantings |

Additional Measurable Goals and Activities

SECTION II. Public Notice Information (Parts IV.G.2.h and IV.G.2.i) *Note: attach copy of public notice

Was the availability of this Annual Report and the Stormwater Management Program Plan (SWMPP) announced via public notice? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	If YES, Date of Public Notice: March 1, 2019
How was public notified: <input type="checkbox"/> List-Serve (Enter # of names in List: _____) <input checked="" type="checkbox"/> Newspaper Advertising <input type="checkbox"/> TV/Radio Notices <input type="checkbox"/> Town Hall posting <input type="checkbox"/> Website <input type="checkbox"/> Other: Enter Web Page URL: _____	
Was public meeting held? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Date: _____ Where: _____	
Summary of public comments received: No comments received.	
Planned responses or changes to the program: No changes needed.	



MINIMUM CONTROL MEASURE #3: ILLCIT DISCHARGE DETECTION AND ELIMINATION (Part IV.B.3 General Permit)

SECTION I. OVERALL EVALUATION:

GENERAL SUMMARY, STATUS, APPROPRIATENESS AND EFFECTIVENESS OF MEASURABLE GOALS

Include information relevant to the implementation of each measurable goal, such as activities implemented (when reporting tracked and eliminated illicit discharges, please explain the rationale for targeting the illicit discharge) to comply with on-going requirements, and illicit discharge public education activities, audiences and pollutants targeted. Discuss activities to be carried out during the next reporting cycle. If addressing TMDL requirements, please indicate rationale for the activities chosen to address the pollutant of concern.

(Note: Identify parties responsible for achieving the measurable goals and reference any reliance on another entity for achieving measurable goals. Mark with an asterisk (*) if this person/entity is different from last year.)

Responsible Party Contact Name & Title: Michael Debrousse, Superintendent- Solid Waste/Engineering

Phone: (401) 767-9216 **Email:** MDebrousse@woonsocketri.org

Has this person received training on Illicit Discharge Detection and Elimination (IDDE)? Yes

If yes, when and where? National Stormwater Center Training Course, February 16, 2018, also attended by Timothy Brundett, Engineering Assistant (Attachment 5)

If no, who is trained on IDDE? _____

IV.B.3.b.1: If the outfall map was not completed, use the space below to indicate reasons why, proposed schedule for completion of requirement and person(s)/ Department responsible for completion. (The Department recommends electronic submission of updated EXCEL Tables if this information has been amended.)

Number of Outfalls Mapped within regulated area: 280

Percent Complete: 100

If 100% Complete, Provide Date of Completion: 2007

A complete outfall map was developed during the dry-weather survey conducted in Year 3. Outfalls were GPS located for incorporation into the GIS database by Fuss & O'Neill. A GIS shapefile of outfall locations was provided in electronic format in the CD included with the Year 5 Annual Report. The required outfall Excel tables were provided on the CD accompanying the Year 6 Annual Report. No updates were made in 2018. The Engineering Department is responsible for this measure.

IV.B.3.b.2: Indicate if your municipality chose to implement the tagging of outfalls activity under the IDDE minimum measure, activities and actions undertaken under the 2018 calendar year.

Outfalls were GPS located and tagging is not necessary.

IV.B.3.b.3: Use the space below to provide a summary of the implementation of recording of system additional elements (catch basins, manholes, and/or pipes). Indicate if the activity was implemented as a result of the tracing of illicit discharges, new MS4 construction projects, and inspection of catch basins required under the IDDE and Pollution Prevention and Good Housekeeping Minimum Measures, and/or as a result of TMDL related requirements and/or investigations. Assess effectiveness of the program minimizing water quality impacts.

The entire storm water system has been comprehensively mapped and been incorporated into a GIS database. This effort was completed through a contract with Fuss & O'Neill. The City continually updates the storm water grids with any changes as they are encountered. This measure has been appropriate and effective in developing the City's mapping. The Engineering Department and hired consultant are responsible for this measure. No additional elements were recorded after the comprehensive mapping.

ILLCIT DISCHARGE DETECTION AND ELIMINATION cont'd

IV.B.3.b.4	<p>Indicate if the IDDE ordinance was not developed, adopted, and submitted to RIDEM, explain reasons why, submit proposed schedule for completion and identify person(s) / Department and/or parties responsible for the completion of this requirement.</p> <p>Date of Adoption: <u>March 21, 2005</u></p> <p>If the Ordinance was amended in 2018, please indicate why changes were necessary.</p>
<p>The Woonsocket City Council formally adopted an "Illicit Discharge Detection and Elimination Ordinance" (Ordinance Chapter 7192) on March 21, 2005. A signed letter from the City's Solicitor attesting to this was provided to DEM in a letter dated February 19, 2007. No amendments to the Ordinance were made in 2018. The Engineering Department is responsible for this measure.</p>	
IV.B.3.b.5.ii, iii, iv, & v	<p>Use the space below to provide a summary of the implementation of procedures for receipt and consideration of complaints, tracing the source of an illicit discharge, removing the source of the illicit discharge and program evaluation and assessment as a result of removing sources of illicit discharges. Identify person(s) / Department and/or parties responsible for the implementation of this requirement.</p>
<p>These measurable goals were completed during the SWMPP development process prior to Year 1. Details regarding this are listed in the executive summary of the SWMPP. In addition to the information in the SWMPP, a complaint form is available to the public on the City's storm water website. Complaints received by the City are directed to the Engineering Department. The City Engineer is responsible for the complaints. The procedure for removal of illicit discharges involves requiring the responsible party to cease discharging and address the situation within seven to ten days (depending on the type of discharge). If the illicit discharges are not addressed by the responsible party, the City has the authority to perform repairs and charge the responsible party for the cost and fines that they may have incurred. No complaints for illicit discharges were noted in 2018. The effectiveness of this measure is yet to be determined.</p>	
IV.B.3.b.5.vi	<p>Use the space below to provide summary of implementation of catch basin and manhole inspections for illicit connections and non-stormwater discharges. If the required measurable goal of inspecting all catch basins and manholes for this purpose was not accomplished, please indicate reasons why, the proposed schedule of completion and identify person(s) / Department and/or parties responsible for the implementation of this requirement. Evaluate effectiveness of the implementation of this requirement. The operator must keep records of all inspections and corrective actions required and completed.</p> <p>Number of Catch Basins and Manholes Inspected for illicit connections/IDDE:</p> <p><u>Approximately 2865 Catch Basins exist in the City. Approximately 1458 Catch Basins were cleaned and inspected in 2018 (See map provided as Attachment 12).</u></p> <p>Percent Complete: <u>51</u> %</p> <p>Date of Completion: <u>December 2018</u></p>
<p>Development of the procedure for this measurable goal was completed in the SWMPP development process. Catch basins are inspected and cleaned on a yearly basis in conjunction with street sweeping. Details regarding this are included in the executive summary of the SWMPP. City structures were inspected for illicit connections in Year 4, the findings of which were subsequently provided to DEM. The City inspects and cleans catch basins (CBs) on a rotating schedule as time, personnel and equipment allow. The Storm Water Committee, Engineering Department, and hired consultant were responsible for procedure development. The Engineering Department and Highway Department are responsible for inspections and recordkeeping.</p> <p>In 2018 the City contracted with Veolia North America to conduct storm water system pipe cleaning, CCTV pipe inspection and catch basin inspection on roads that were paved in 2018 (Winter Street, Bailey Street, Roland Street and Elmore Avenue). A copy of the report is included as <i>Attachment 13</i>. The City will use this information to conduct repairs of the stormwater systems in 2019.</p>	

ILLICIT DISCHARGE DETECTION AND ELIMINATION cont'd

IV.B.3.b.5.vii	<p>If dry weather surveys including field screening for non-stormwater flows and field tests of selected parameters and bacteria were not completed, indicate reasons why, proposed schedule for the completion of this measurable goal and person(s) / Department and/or parties for the completion of this requirement. Evaluate effectiveness of the implementation of this requirement. The results of the dry weather survey investigations must be submitted to RIDEM electronically, if not already submitted or if revised since 2009, in the RIDEM-provided EXCEL Tables and should include visual observations for all outfalls during both the high and low water table timeframes, as well as sample results for those outfalls with flow. The EXCEL Tables must include a report of all outfalls and indicate the presence or absence of dry weather discharges.</p> <p>Number of Outfalls Surveyed Jan-Apr: <u>280</u> Number of Outfalls Surveyed Jul-Oct: <u>280</u></p> <p>Percent Complete: <u>100</u> %</p> <p>Date of Completion: <u>2007</u></p>
<p>Two dry-weather surveys were completed by Year 4. The surveys were completed by the City's consultant, Fuss and O'Neill. A report was prepared that included the results of both dry weather surveys. Results of the two surveys were provided in electronic format (shapefile) and were provided on the CD included with the Year 5 annual report. This information was also included in the Excel tables provided on the CD accompanying the Year 6 Annual Report. This measure has been appropriate and effective. The Engineering Department and hired consultant were responsible for this measure.</p>	
IV.B.3.b.7	<p>Use the space below to provide a description of efforts and actions taken as a result of for coordinating with other physically interconnected MS4s, including State and federal owned or operated MS4s, when illicit discharges were detected or reported. Identify person(s) / Department and/or parties responsible for the implementation of this requirement. Evaluate effectiveness of the implementation of this requirement.</p>
<p>The City has coordination procedures in place for physically interconnected MS4s, however as no illicit discharges or connections have been detected in the vicinity of interconnections, no coordination has been required to date. The City has working relationships with neighboring MS4s; therefore, the procedures are appropriate and expected to be effective; however, the effectiveness has yet to be determined. The Engineering Department is responsible for this measure.</p>	
IV.B.3.b.8	<p>Use the space below to provide a description of efforts and actions taken for the referral to RIDEM of non-stormwater discharges not authorized in accordance to Part I.B.3 of this permit or another appropriate RIPDES permit, which the operator has deemed appropriate to continue discharging to the MS4, for consideration of an appropriate permit. Identify person(s) / Department and/or parties responsible for the implementation of this requirement. Evaluate effectiveness of the implementation of this requirement.</p>
<p>Procedures for referral were developed during the SWMPP prior to Year 1, with the process being put in place during Year 3. During 2018 no non-stormwater discharges occurred. Since no non-stormwater discharges have occurred to date, there have been no referrals to RIDEM. The developed procedures are appropriate, however the effectiveness of this measure is yet to be determined. The Engineering Department is responsible for completion of this goal.</p>	
IV.B.3.b.9	<p>Use the space below to provide a description of efforts and actions taken to inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste, as well as allowable non-stormwater discharges identified as significant contributors of pollutants. Include a description on how this activity was coordinated with the public education minimum measure and the pollution prevention/good housekeeping minimum measure programs. Identify person(s) / Department and/or parties responsible for the implementation of this requirement. Evaluate effectiveness of the implementation of this requirement.</p>
<p>Public employees are educated on the hazards associated with illegal discharges; the general public has access to educational information on the Town website. The Engineering department is responsible for this measure. The City is always open to and interested in training opportunities and will take advantage of them for public employees in the future as budget and time constraints allow.</p>	
<p>Additional Measurable Goals and Activities</p>	

SECTION II.A Other Reporting Requirements - Illicit Discharge Investigation and System Mapping (Part IV.G.2.m)

# of Illicit Discharges Identified in 2018: 0	# of Illicit Discharges Tracked in 2018: 0
# of Illicit Discharges Eliminated in 2018: 0	# of Complaints Received: 0
# of Complaints Investigated: 0	# of Violations Issued: 0
# of Violations Resolved: 0	# of Unresolved Violations Referred to RIDEM: 0
Total # of Illicit Discharges Identified to Date (since 2003): 0	Total # of Illicit Discharges remaining unresolved at the end of 2018: 0
Summary of Enforcement Actions:	
No illicit discharges were identified in 2018, therefore no enforcement actions were required.	
Extent to which the MS4 system has been mapped: 100%	
Total # of Outfalls Identified and Mapped to date: 280	

SECTION II.B Interconnections (Parts IV.G.2.k and IV.G.2.l)

Interconnection:	Date Found:	Location:	Name of Connectee:	Originating Source:	Planned and Coordinated Efforts and Activities with Connectee:
		State Roads	RIDOT		As Required
			Town of Cumberland		As Required
			Town of N. Smithfield		As Required
			Blackstone, MA		As Required
			Bellingham, MA		As Required



MINIMUM CONTROL MEASURE #4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL (Part IV.B.4 General Permit)

SECTION I. OVERALL EVALUATION:

GENERAL SUMMARY, STATUS, APPROPRIATENESS AND EFFECTIVENESS OF MEASURABLE GOALS:

Include information relevant to the implementation of each measurable goal, such as activities implemented to support the review, issuance and tracking of permits, inspections and receipt of complaints. Discuss activities to be carried out during the next reporting cycle. If addressing TMDL requirements, please indicate rationale for the activities chosen to address the pollutant of concern.

(Note: Identify parties responsible for achieving the measurable goals and reference any reliance on another entity for achieving measurable goals. Mark with an asterisk (*) if this person/entity is different from last year.)

Responsible Party Contact Name & Title: Michael Debrousse, Superintendent- Solid Waste/Engineering

Phone: (401) 767-9216 **Email:** MDebrousse@woonsocketri.org

IV.B.4.b.1 Indicate if the Sediment and Erosion Control and Control of Other Wastes at Construction Sites ordinance was **not** developed, adopted, and submitted to RIDEM, explain reasons why, submit proposed schedule for completion and identify person(s) / Department and/or parties responsible for the completion of this requirement.

Date of Adoption: September 20, 1993, letter of authority to DEM 12/01/2010

If the Ordinance was amended in 2018, please indicate why changes were necessary. **Please also indicate if amendments have been made based on the 2010 RI Stormwater Design and Installation Standards Manual, and provide references to the amended portions of the local codes/ordinances.**

The Woonsocket City Council formally adopted an "Erosion and Sediment Control Ordinance" (Ordinance Chapter 5803) on September 20, 1993. A signed letter from the City's Solicitor attesting to this ordinance's authority to carry out the applicable requirements of the RIPDES General Permit was provided to DEM in a letter dated December 1, 2010 and was provided with the Year 7 report. No amendments were made in 2018. The Engineering Department was responsible for the completion of this requirement.

IV.B.4.b.6 Use the space below to describe actions taken as a result of receipt and consideration of information submitted by the public.

The procedures for this measure were established during SWMPP development prior to Year 1. Public comments are received by the City Engineer, or another appropriate department at the City. This measure continues to be appropriate and effective in addressing public concerns about soil erosion and sedimentation control involving new development. The Engineering Department is responsible for this measure.

The City did not receive any public complaints in 2018; however the City was made aware of a public complaint received by RIDEM regarding unauthorized work on a construction site less than 1 acre in size located near the intersection of Chestnut Street and Sixth Avenue. An inspection conducted by RIDEM staff determined that work was performed that was not in agreement with approved site plans, specifically that an unauthorized ditch and berm were constructed to redirect surface water and roof runoff. In response to a letter to the site operator from RIDEM regarding required actions to correct the issue, the site operator submitted revised site plans and an application to RIDEM, which RIDEM accepted. The letters from RIDEM regarding this issue are provided as *Attachment 14*. The City supports RIDEM in all compliance and inspection efforts and the City worked with RIDEM to ensure that the site achieved compliance.

IV.B.4.b.8 Use the space below to describe activities and actions taken as a result of referring to the State non-compliant construction site operators. The operator may rely on the Department for assistance in enforcing the provisions of the RIPDES General Permit for Stormwater Discharges Associated with Construction Activity to the MS4 if the operator of the construction site fails to comply with the local and State requirements of the permit and the non-compliance results or has the potential to result in significant adverse environmental impacts.

The procedures for this measure were established during SWMPP development prior to Year 1. The Engineering Department can shut down sites and retract permits for any construction site found to be non-complaint. The Engineering Department has a list of State personnel that can be contacted for assistance with any non-compliant construction site operators. The City did not need to refer any non-compliant construction site operators to RIDEM in Year 15. The Engineering Department is responsible for this goal.

CONSTRUCTION SITE STORMWATER RUNOFF CONTROL *cont'd*

Additional Measurable Goals and Activities

SECTION II. A - Plan and SWPPP/SESC Plan Reviews during Year 15 (2018), Part IV.B.4.b.2: Issuance of permits and/or implementation of policies and procedures for all construction projects resulting in land disturbance of greater than 1 acre.
Part IV.B.4.b.4: Review 100% of plans and SWPPPs/SESC Plans for construction projects resulting in land disturbance of 1-5 acres must be conducted by adequately trained personnel and incorporate consideration of potential water quality impacts.

of Construction Applications Received: 1

of Construction Reviews Completed: 1

of Permits/Authorizations Issued: 1

Summary of Reviews and Findings, include an evaluation of the effectiveness of the program.

A list of all construction applications received in 2018 is included as *Attachment 15*. This list includes projects both greater than and less than 1 acre. Of these projects, only one was greater than 1 acre: Preliminary Subdivision Oak Grove Extension Phases III and IV.

Identify person(s) /Department and/or parties responsible for the implementation of this requirement:

Engineering Department

Identify the type and date of training this person(s)/parties has/have received to be considered "adequately trained":

National Stormwater Center Training Course, February 16, 2018, attended by Michael Debrousse and Timothy Brundrett

An Orientation to the Floodplain Management Field in Rhode Island, Attended by Timothy Brundrett

Brad R. Ward is an ASFPM Certified Floodplain Manager

CONSTRUCTION SITE STORMWATER RUNOFF CONTROL *cont'd*

SECTION II.B - Erosion and Sediment Control Inspections during Year 15 (2018), Parts IV.G.2.n and IV.B.4.b.7:

Inspection of 100% of all construction projects within the regulated area that discharge or have the potential to discharge to the MS4. (The program must include two inspections of all construction sites, first inspection to be conducted during construction for compliance of the Erosion and Sediment controls at the site, the second to be conducted after the final stabilization of the site.) Inspections must be conducted by adequately trained personnel.

# of Active Construction Projects: 1	
# of Site Inspections: 1	# of Complaints Received: 0
# of Violations Issued: 0	# of Unresolved Violations Referred to RIDEM: 0
<p>Summary of Enforcement Actions, include an evaluation of the effectiveness of the program.</p> <p>The City conducts sediment and erosion controls on all construction projects. All of the projects included in <i>Attachment 15</i> were inspected in 2018, including the one site that is larger than an acre. No issues were observed during the City's inspections.</p> <p>The City worked with RIDEM regarding receipt of one complaint in 2018 for a construction site less than an acre, detailed in section IV.B.4.b.6.</p> <p>It is appropriate and effective to conduct erosion and sediment control inspections.</p> <p>Identify person(s) /Department and/or parties responsible for the implementation of this requirement:</p> <p>Engineering Department</p> <p>Identify the type and date of training this person(s)/parties has/have received to be considered "adequately trained":</p> <p>National Stormwater Center Training Course, February 16, 2018, attended by Michael Debrousse and Timothy Brundrett</p> <p>An Orientation to the Floodplain Management Field in Rhode Island, Attended by Timothy Brundrett</p>	



**MINIMUM CONTROL MEASURE #5:
POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND
REVELOPMENT
(Part IV.B.5 General Permit)**

SECTION I. OVERALL EVALUATION:

GENERAL SUMMARY, STATUS, APPROPRIATENESS AND EFFECTIVENESS OF MEASURABLE GOALS:

Include information relevant to the implementation of each measurable goal, such as activities implemented to support the review, issuance and tracking of permits, inspections and receipt of complaints, etc. Please indicate if any projects have incorporated the use of Low Impact Development techniques. Discuss activities to be carried out during the next reporting cycle. If addressing TMDL requirements, please indicate rationale for the activities chosen to address the pollutant of concern.

(Note: Identify parties responsible for achieving the measurable goals and reference any reliance on another entity for achieving measurable goals. Mark with an asterisk (*) if this person/entity is different from last year.)

Responsible Party Contact Name & Title: Michael Debrousse, Superintendent- Solid Waste/Engineering

Phone: (401) 767-9216 **Email:** MDebrousse@woonsocketri.org

IV.B.5.b.5 Use the space below to describe activities and actions taken to coordinate with existing State programs requiring post-construction stormwater management.

The City requires that applicants receive State approvals before applications will be accepted and approved. After State approval is achieved, the City also reviews plans for stormwater management. As indicated on the City's Stormwater Management website (<http://www.woonsocketri.org/stormwater-management>), any development or redevelopment in the City of Woonsocket requires the development and submittal of a Stormwater Management Plan (the requirements of which are consistent with the 2015 Rhode Island Stormwater Design and Installation Standards Manual). The Engineering Department is responsible for plan review and coordination with State programs.

IV.B.5.b.6 Use the space below to describe actions taken for the referral to RIDEM of new discharges of stormwater associated with industrial activity as defined in RIPDES Rule 31(b)(15) (the operator must implement procedures to identify new activities that require permitting, notify RIDEM, and refer facilities with new stormwater discharges associated with industrial activity to ensure that facilities will obtain the proper permits).

The procedures for this measure were established during SWMPP development prior to Year 1. The City Engineer requires new applicants to obtain state permits prior to approving new industrial discharges. Details regarding this are included in the executive summary of the SWMPP. It is appropriate and effective to refer new industrial discharges to the state. No new industrial discharges were reported in 2018. The DPW and City Council are responsible for this goal.

IV.B.5.b.9 Indicate if the Post-Construction Runoff from New Development and Redevelopment Ordinance was **not** developed, adopted, and submitted to RIDEM, explain reasons why, submit proposed schedule for completion and identify person(s) / Department and/or parties responsible for the completion of this requirement.
Date of Adoption: March 21, 2005
If the Ordinance was amended in 2018, please indicate why changes were necessary. **Please also indicate if amendments have been made based on the 2010 RI Stormwater Design and Installation Standards Manual, and provide references to the amended portions of the local codes/ordinances.**

The Woonsocket City Council formally adopted a "Post Construction – Storm Water Control Ordinance" (Ordinance Chapter 7193) on March 21, 2005. A signed letter from the City's Solicitor attesting to this ordinance's authority to carry out the applicable requirements of the RIPDES General Permit was provided to DEM in a letter dated December 1, 2010 and was provided with the Year 7 report. No amendments were made in 2018.

IV.B.5.b.12 Use the space below to describe activities and actions taken to identify existing stormwater structural BMPs discharging to the MS4 with a goal of ensuring long term O&M of the BMPs.

Existing BMPs have been identified, and new BMPs are added to the inventory as the City issues occupancy certificates. No new BMPs were constructed in 2018. This measure has been appropriate and effective. The Engineering Department is responsible for this measure.

POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT
cont'd

Additional Measurable Goals and Activities

SECTION II.A. - Plan and SWPPP/SESC Plan Reviews during Year 15 (2018), Part IV.B.5.b.4: Review 100% of post-construction BMPs for the control of stormwater runoff from new development and redevelopment projects that result in discharges to the MS4 which incorporates consideration of potential water quality impacts (the program requires reviewing 100% of plans for development projects greater than 1 acre, not reviewed by other State programs). Plan reviews must be conducted by adequately trained personnel.

of Post-Construction Applications Received: 0

of Post-Construction Reviews Completed: 0

of Permits/Authorizations Issued: 0

Summary of Reviews and Findings, include an evaluation of the effectiveness of the program.

There were no projects greater than 1 acre completed in 2018, therefore no post-construction reviews occurred. The City is committed to review 100% of post-construction BMPs for the control of storm water runoff from new development and redevelopment projects. The City takes the opportunity during all plan reviews to recommend and encourage the applicant to utilize green infrastructure BMP's for their project such as: rain gardens, grassed swales, permeable paving. The Building Official completes post construction reviews before a Certificate of Occupancy is issued. The Engineering Department is responsible for implementation of this requirement.

Identify person(s) /Department and/or parties responsible for the implementation of this requirement:

Engineering Department

Identify the type and date of training this person(s)/parties has/have received to be considered "adequately trained":

National Stormwater Center Training Course, February 16, 2018, attended by Michael Debrousse and Timothy Brundrett

An Orientation to the Floodplain Management Field in Rhode Island, Attended by Timothy Brundrett

Brad R. Ward is an ASFPM Certified Floodplain Manager

POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT
cont'd

SECTION II.B. - Post Construction Inspections during Year 15 (2018), Parts IV.G.2.o and IV.B.5.b.10 - Proper Installation of Structural BMPs: Inspection of BMPs, to ensure these are constructed in accordance with the approved plans (the program must include inspection of 100% of all development greater than one acre within the regulated areas that result in discharges to the MS4 regardless of whom performs the review). Inspections must be conducted by adequately trained personnel.

# of Active Construction Projects: 1	# of Construction Projects Completed: 0
# of Site Inspections for proper Installation of BMPs: 0	# of Complaints Received: 0
# of Violations Issued: 0	# of Unresolved Violations Referred to RIDEM: 0
<p>Summary of Enforcement Actions:</p> <p>There were no projects greater than 1 acre completed in 2018, therefore no post-construction inspections occurred.</p> <p>Identify person(s) /Department and/or parties responsible for the implementation of this requirement:</p> <p>Engineering Department</p> <p>Identify the type and date of training this person(s)/parties has/have received to be considered "adequately trained":</p> <p>National Stormwater Center Training Course, February 16, 2018, attended by Michael Debroisse and Timothy Brundrett</p> <p>An Orientation to the Floodplain Management Field in Rhode Island, Attended by Timothy Brundrett</p> <p>Brad R. Ward is an ASFPM Certified Floodplain Manager</p>	

SECTION II.C. - Post Construction Inspections during Year 15 (2018), Parts IV.G.2.p and IV.B.5.b.11 - Proper Operation and Maintenance of Structural BMPs: Describe activities and actions taken to track required Operations and Maintenance (O&M) actions for site inspections and enforcement of the O&M of structural BMPs. Tracking of required O&M actions for site inspections and enforcement of the O&M of structural BMPs.

# of Site Inspections for proper O&M of BMPs: 0	# of Complaints Received: 0
# of Violations Issued: 0	# of Unresolved Violations Referred to RIDEM: 0
<p>Summary of Activities and Enforcement Actions. Evaluate the effectiveness of the Program in minimizing water quality impacts.</p> <p>There were no projects greater than 1 acre completed in 2018, therefore no post-construction inspections occurred.</p> <p>Identify person(s) /Department and/or parties responsible for the implementation of this requirement:</p> <p>Engineering Department</p>	

POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT
cont'd

Strategies for requiring the use of non-structural Low Impact Development (LID) site design practices and techniques into stormwater management designs for new and redevelopment projects, check all that apply in your municipality/MS4:

- ☐ None
- ☐ Ordinances or by-laws requiring LID standards (e.g. reduced road widths, % conservation land, etc.)
- ☐ Ordinances or by-laws requiring LID design at conceptual review (i.e., Pre-application and/or Master Plan) stages for municipal review prior to plans being engineered.
- ☐ Ordinances or by-laws requiring LID standards only in impaired waterbody drainage areas
- ☐ Local development regulations requiring use of LID to the maximum extent practicable
- ☒ LID Guidance available in written form
- ☒ LID Guidance available at pre-application meetings
- ☐ Other strategies to ensure incorporation of LID to the maximum extent practicable, describe:

 The City takes the opportunity during all plan reviews to recommend and encourage the applicant to utilize green infrastructure BMP's for their project such as: rain gardens, grassed swales, permeable paving.

Person(s)/Department responsible for reviewing submissions for LID:

Person(s)/Department/Board responsible for approving submissions for LID at Preliminary and/or Final Review, if applicable:

POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT
cont'd

Strategies being implemented to ensure long-term Operation and Maintenance (O&M) of privately-owned structural stormwater BMPs, check all that apply in your municipality/MS4:

- ☐ None
- ☐ Ordinances or by-laws identify BMP inspection responsible party
- ☒ Ordinances or by-laws identify BMP maintenance responsible party
- ☐ Ordinances or by-laws identify BMP inspections and maintenance requirements
- ☐ Ordinances or by-laws provide for easements or covenants for inspections and maintenance
- ☐ Ordinances or by-laws require for every constructed BMP an inspections and maintenance agreement
- ☒ Ordinances or by-laws contain requirements for documenting and detailing inspections
- ☐ Ordinances or by-laws contain requirements for documenting and detailing maintenance
- ☐ Ordinances or by-laws contain authority to enforce for lack of maintenance or BMP failure
- ☒ The MS4 is responsible for inspections of all privately-owned BMPs
- ☐ The MS4 is responsible for maintenance of all privately-owned BMPs
- ☐ Establishment of escrow account for use in case of failure of BMP
- ☐ Other strategies to ensure long-term O&M of privately-owned BMPs, describe:

Does your municipality/MS4 require the use BMPs Operations and Maintenance Agreements? ☒ YES ☐ NO

If YES, please indicate if the Operations and Maintenance Agreements include the following:

- | | |
|---|---|
| a. Party responsible for the long-term O&M of permanent stormwater management BMPs | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| b. A description of the permanent stormwater BMPs that will be operated and maintained | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| c. The location of the permanent stormwater BMPs that will be operated and maintained | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| d. A timeframe for routine and emergency inspections and maintenance of all permanent stormwater management BMPs | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| e. A requirement that all inspections and maintenance activities are documented | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| f. Annual submission of inspection/maintenance certification/documentation to the MS4 | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| g. Stormwater management easement for access for inspections and maintenance or the preservation of stormwater runoff conveyance, infiltration, and detention areas and other stormwater controls and BMPs by persons other than the property owner | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| h. Steps available for addressing a failure to maintain the stormwater controls and BMPs | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |

Please elaborate, if appropriate:

The City requires compliance with Operation and Maintenance Plan requirements per RIDEM and CRMC. The City completes inspections of all surface BMPs.

Does your municipality/MS4 keep an inventory of privately-owned BMPs? ☒ YES ☐ NO

For privately-owned structural BMPs, does your municipality/MS4 have a system for tracking:

- | | |
|---|---|
| a. Agreements and arrangements to ensure O&M of BMPs? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| b. Inspections? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| c. Maintenance and schedules? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| d. Complaints? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| e. Non-Compliance? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| f. Enforcement actions? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |

Do you use an electronic tool (e.g. GIS, database, spreadsheet) to track post-construction BMPs, inspections, and maintenance? ☒ YES ☐ NO

If yes, please elaborate on which tools are used:

The City uses GIS and spreadsheets to track inspections, but not maintenance. (See BMP list, Attachment 16).

NOTE: BMP maintenance tasks can be a great way to involve and educate the community to their purpose and function. BMPs have the potential to create a highly interactive environment for community members and volunteers to get involved.



MINIMUM CONTROL MEASURE #6: POLLUTION PREVENTION AND GOOD HOUSEKEEPING IN MUNICIPAL OPERATIONS (Part IV.B.6 General Permit)

SECTION I. OVERALL EVALUATION:

GENERAL SUMMARY, STATUS, APPROPRIATENESS AND EFFECTIVENESS OF MEASURABLE GOALS:

Include information relevant to the implementation of each measurable goal, such as activities and practices used to address on-going requirements, and personnel responsible. Discuss activities to be carried out during the next reporting cycle. If addressing TMDL requirements, please indicate rationale for the activities chosen to address the pollutant of concern.

(Note: Identify parties responsible for achieving the measurable goals and reference any reliance on another entity for achieving measurable goals. Mark with an asterisk (*) if this person/entity is different from last year.)

Responsible Party Contact Name & Title: Michael Debroisse, Superintendent- Solid Waste/Engineering

Phone: (401) 767-9126 **Email:** MDebroisse@woonsocketri.org

IV.B.6.b.1.i Use the space below to describe activities and actions taken to identify structural BMPs owned or operated by the small MS4 operator (the program must include identification and listing of the specific location and a description of all structural BMPs in the SWMPP and update the information in the Annual Report). Evaluate appropriateness and effectiveness of this requirement.

Do you have an inventory of MS4-owned/operated BMPs? ☒ YES ☐ NO

Total # of MS4-owned/operated BMPs (does not include CBs or MHs): 9

The DPW identifies existing structural BMPs and adds new structural BMPs when the City takes ownership. A list of structural BMPs within the City limits and their respective owners is provided as an attachment to this Annual Report (*Attachment 16*). This measure is appropriate and effective. The Engineering Department is responsible for the completion and implementation of this goal.

IV.B.6.b.1.ii Use the space below to describe activities and actions taken for inspections, cleaning and repair of detention/retention basins, storm sewers and catch basins with appropriate scheduling given intensity and type of use in the catchment area. Evaluate appropriateness and effectiveness of this requirement.

of MS4-owned/operated BMPs inspected in 2018: 9

of MS4-owned/operated BMPs maintained/cleaned in 2018: 0

of MS4-owned/operated BMPs repaired in 2018: 0

Does your municipality/MS4 have a system for tracking:

- | | | |
|--|---|-----------------------------|
| a. Inspection schedules of MS4-owned BMPs? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO |
| b. Maintenance/cleaning schedules of MS4-owned BMPs? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO |
| c. Repairs, corrective actions needed? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO |
| d. Complaints? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO |

Do you use an electronic tool (e.g. GIS, database, spreadsheet) to track stormwater BMPs, inspections, and maintenance? ☒ YES ☐ NO

The City aims to inspect and maintain BMPs annually or more frequently if determined to be necessary. The City inspected all of the BMPs in the attached list in 2018. Both BMPs owned by the City and privately owned BMPs are inspected by the City. After the inspection, the City sends a letter to the BMP owner which identifies any necessary corrective actions along with educational material. The City plans to continue BMP inspections in the upcoming year. Inspection and maintenance of the City's BMPs is appropriate and effective. The Engineering Department is responsible for inspections and maintenance.

POLLUTION PREVENTION AND GOOD HOUSEKEEPING IN MUNICIPAL OPERATIONS cont'd

IV.B.6.b.1.iii	<p>Use the space below to describe activities and actions taken to support the requirement of yearly inspection and cleaning of all catch basins (a lesser frequency of inspection based on at least two consecutive years of operational data indicating the system does not require annual cleaning might be acceptable). Evaluate appropriateness and effectiveness of this requirement.</p> <p>Total # of CBs within regulated area (including SRPW and TMDL areas): <u>2,865</u></p> <p># of CBs inspected in 2018: <u>1458</u> % of Total inspected: <u>51</u></p> <p># of CBs cleaned in 2018: <u>1458</u> % of Total cleaned: <u>51</u></p> <p>Quantity of sand/debris collected by cleaning of catch basins: <u>642.25 tons (total from street sweeping and Catch Basin Cleaning)</u></p> <p>Location used for the disposal of debris: <u>Rhode Island Resource Recovery</u></p> <p>Do you use an electronic tool (e.g. GIS, database, spreadsheet) to track the inspections and cleaning of catch basins? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p>
<p>The City has developed an annual catch basin cleaning program. A summary of the program was attached to the Year 3 annual report. The program consists of cleaning the catch basins using a grid system to track the catch basins that have been cleaned. Certain portions of the City, specifically the low-lying areas of the developed portions of the City, are cleaned more regularly. A map showing the catch basins that were inspected and cleaned is attached to this annual report. A combined 642.25 tons of material was collected through the street sweeping and catch basin cleaning activities in 2018 (see attached sweeping tonnage for 2018, <i>Attachment 17</i>). The Engineering Department is responsible for the completion of this goal.</p>	
IV.B.6.b.1.iv	<p>Use the space below to describe activities and actions taken to minimize erosion of road shoulders and roadside ditches by requiring stabilization of those areas. Evaluate appropriateness and effectiveness of this requirement.</p>
<p>This measurable goal was completed in the SWMPP development process. In the City, most of the roadways are curbed and have sidewalks. Any roadway with a shoulder or ditch in need of repair is immediately addressed. It is usually a property owner or municipal employee that notifies the Engineering Department of a problem. Inspections during road work by municipal employees are an appropriate way of observing any erosion of road side shoulders and ditches. Erosive conditions that are found are treated with loam and seed. No repairs to road shoulders and roadside ditches were made in 2018. Erosive conditions will be corrected when discovered, which is effective in preventing further erosion. The DPW is responsible for the completion of this goal.</p>	
IV.B.6.b.1.v	<p>Use the space below to describe activities and actions taken to identify and report known discharges causing scouring at outfall pipes or outfalls with excessive sedimentation, for the Department to determine on a case-by-case basis if the scouring or sedimentation is a significant and continuous source of sediments. Evaluate appropriateness and effectiveness of this requirement.</p>
<p>No evidence of scouring or excessive sedimentation was found in 2018. The DPW is responsible for the completion of this goal.</p>	

POLLUTION PREVENTION AND GOOD HOUSEKEEPING IN MUNICIPAL OPERATIONS cont'd

IV.B.6.b.1.vi	<p>Use the space below to indicate if all streets and roads within the urbanized area were swept annually and if not indicate reason(s). Evaluate appropriateness and effectiveness of this requirement.</p> <p>Total roadway miles within regulated area (including SRPW and TMDL areas): <u>108</u></p> <p>Roadway miles that were swept in 2018: <u>117</u> % of Total swept: <u>100</u></p> <p>Type of sweeper used: <input checked="" type="checkbox"/> Rotary brush street sweeper <input type="checkbox"/> Vacuum street sweeper</p> <p>Quantity of sand/debris collected by sweeping of streets and roads: <u>642.25 tons (total from street sweeping and Catch Basin Cleaning)</u></p> <p>Location used for the disposal of debris: <u>Rhode Island Resource Recovery</u></p> <p>Do you use an electronic tool (e.g. GIS, database, spreadsheet) to track the annual sweeping of streets and roads? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p>
<p>The City committed to the measurable goal of sweeping all municipal streets in the submitted SWMPP. Presently, all City streets are cleaned at least once a year based on the City's grid system. Street sweeping is typically conducted at the same time catch basin cleaning and inspections occur. In 2018, street sweeping of every street occurred between the spring and fall. Streets requiring repeated sweeping were swept again, as required. All streets in the City were swept at least once, with the downtown area swept more frequently. A combined 642.25 tons of material were collected through the street sweeping and catch basin cleaning activities in 2018. All waste material is disposed of by the Rhode Island Resource Recovery Corporation. The DPW is responsible for the completion of this goal.</p>	
IV.B.6.b.1.vii	<p>Use the space below to describe activities and actions taken for controls to reduce floatables and other pollutants from the MS4. Evaluate appropriateness and effectiveness of this requirement.</p>
<p>The City currently requires that all new and redevelopment projects include installation of catch basin hoods. The City evaluates the need for retrofits as funds become available and targets priority areas. Catch basin inlet grates are cleaned when catch basins are inspected or when municipal employees report a need for cleaning. The annual catch basin cleaning program and street sweeping program includes removal of floatables. Floatables are also collected by Woonsocket's Routine Litter Patrol setup by the Highway Department during daily litter pickup activities. Trash cans are provided at frequented pedestrian areas including Main Street and the RIPTA bus stops. The DPW is responsible for the completion of this goal</p>	
IV.B.6.b.1.viii	<p>Use the space below to describe the method for disposal of waste removed from MS4s and waste from other municipal operations, including accumulated sediments, floatables and other debris and methods for record-keeping and tracking of this information.</p> <p>Do you have a system for tracking actions to remove and dispose of waste? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p>
<p>The City continues to dispose of waste in accordance with applicable state requirements. Additionally, the City runs a citywide recycling program. Information on citywide recycling is available on the City's website.</p>	

POLLUTION PREVENTION AND GOOD HOUSEKEEPING IN MUNICIPAL OPERATIONS cont'd

<p>IV.B.6.b.4 and IV.B.6.b.5</p>	<p>Use the space below to describe and indicate activities and corrective actions for the evaluation of compliance. This evaluation must include visual quarterly monitoring; routine visual inspections of designated equipment, processes, and material handling areas for evidence of, or the potential for, pollutants entering the drainage system or point source discharges to a waters of the State; and inspection of the entire facility at least once a year for evidence of pollution, evaluation of BMPs that have been implemented, and inspection of equipment. A Compliance Evaluation report summarizing the scope of the inspection, personnel making the inspection, major observations related to the implementation of the Stormwater Management Plan (formerly known as a Stormwater Pollution Prevention Plan), and any actions taken to amend the Plan must be kept for record-keeping purposes.</p>
<p>The general permit requires that municipally owned facilities with storm water discharges associated with industrial activity, implement a site specific Stormwater Management Plan (formerly known as a storm water pollution prevention plan). There is one municipally owned industrial facility with a site specific Stormwater Management Plan in Woonsocket, which is the Highway Garage. Regular inspections of this facility are performed by members of the Highway Department. This is an appropriate and effective measure for ensuring that municipally owned industrial facilities are not polluting the City's storm water system. The DPW is responsible for this measurable goal. No significant corrective actions were recorded in 2018 at the Highway Garage. Routine maintenance was performed.</p>	
<p>IV.B.6.b.6</p>	<p>Use the space below to describe all employee training programs used to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance for the past calendar year, including staff municipal participation in the URI NEMO stormwater public education and outreach program and all in-house training conducted by municipality or other parties. Evaluate appropriateness and effectiveness of this requirement.</p> <p>How many stormwater management trainings have been provided to <i>municipal employees</i> during this reporting period? <u>5</u></p> <p>What was the date of the last training? <u>December 2018</u></p> <p>How many <i>municipal employees</i> have been trained in this reporting period? <u>3</u></p> <p>What percent of <i>municipal employees</i> in relevant positions and departments received stormwater management training? <u>75</u>%</p> <p>Have <i>municipal employees</i> that are responsible for inspecting or cleaning catch basins also been trained to detect and report illicit connections or non-stormwater discharges? <u>No formal training has occurred. The Superintendent of Solid Waste/Engineering has provided verbal training on an informal basis.</u></p>
<p>The City is always open to training opportunities and will take advantage of them as they are made available in the future.</p>	
<p>IV.B.6.b.7</p>	<p>Use the space below to describe actions taken to ensure that new flow management projects undertaken by the operator are assessed for potential water quality impacts and existing projects are assessed for incorporation of additional water quality protection devices or practices. Evaluate appropriateness and effectiveness of this requirement.</p>
<p>Currently, flow management is addressed during the site plan review process as part of the drainage review for proposed projects. It is appropriate and effective to assess flow management projects during planning stages of municipal projects. The DPW is responsible for the completion of this goal.</p>	
<p>Additional Measurable Goals and Activities</p> <p>The City is working with Woonsocket Water Services, LLC to design and build a new water treatment plant. Construction began in 2018 and the new treatment plan is scheduled to be online in December 2020.</p> <p>The City is also exploring the feasibility of issuing a RFP for the maintenance of the storm water system including catch basin cleaning, camera investigations, and discovery of any cross connections.</p>	

POLLUTION PREVENTION AND GOOD HOUSEKEEPING IN MUNICIPAL OPERATIONS cont'd

SECTION II.A - Structural BMPs (Part IV.B.6.b.1.i)

BMP ID:	Location:	Name of BMP Owner/Operator:	Description of BMP:	Frequency of Inspection:
	See Attachment 16			

SECTION II.B - Discharges Causing Scouring or Excessive Sedimentation (Part IV.B.6.b.1.v)

Outfall ID:	Location:	Description of Problem:	Description of Remediation Taken, include dates:	Receiving Water Body Name/Description:

SECTION II.C - Note any planned municipal construction projects/opportunities to incorporate water quality BMPs, low impact development, or activities to promote infiltration and recharge (Part IV.G.2.j).

The City has no formal plans, however the work with the Woonsocket Thundermist Taskforce, described in section IV.B.2.b.2.ii, may provide opportunities for incorporation of water quality BMPs, low impact development and green infrastructure in the coming year. The project has identified sites that are available and appropriate for green infrastructure that will help to improve water quality.

SECTION II.D - Please include a summary of results of any other information that has been collected and analyzed. This includes any type of data (Part IV.G.2.e).



TOTAL MAXIMUM DAILY LOAD (TMDL) or other Water Quality Determination REQUIREMENTS

SECTION I. If you have been notified that discharges from your MS4 require non-structural or structural stormwater controls based on an approved TMDL or other water quality determination, please provide an assessment of the progress towards meeting the requirements for the control of stormwater identified in the approved TMDL (Part IV.G.2.d). Please indicate rationale for the activities chosen to address the pollutant of concern.

(Note: Identify parties responsible for achieving the measurable goals and reference any reliance on another entity for achieving measurable goals. Mark with an asterisk (*) if this person/entity is different from last year.)

Responsible Party Contact Name & Title: Michael Debrousse, Superintendent Solid Waste/Engineering

Phone: (401) 767-9216

Email: MDebrousse@woonsocketri.org

LIST OF IMPAIRED WATERS:			
Impaired Water Body: Blackstone River	Pollutants Causing Impairments: Enterococcus Fecal Coliform Cadmium Lead	Has TMDL been completed? Has MS4 been notified of TMDL requirements? Has MS4 developed a Scope of Work or TMDL Implementation Plan?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Impaired Water Body: Cherry Brook	Pollutants Causing Impairments: Enterococcus Fecal Coliform Copper	Has TMDL been completed? Has MS4 been notified of TMDL requirements? Has MS4 developed a Scope of Work or TMDL Implementation Plan?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Impaired Water Body: Mill River	Pollutants Causing Impairments: Enterococcus Fecal Coliform	Has TMDL been completed? Has MS4 been notified of TMDL requirements? Has MS4 developed a Scope of Work or TMDL Implementation Plan?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Impaired Water Body: Peters River	Pollutants Causing Impairments: Enterococcus Fecal Coliform Copper	Has TMDL been completed? Has MS4 been notified of TMDL requirements? Has MS4 developed a Scope of Work or TMDL Implementation Plan?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Impaired Water Body: Unnamed Tributaries to Blackstone River	Pollutants Causing Impairments: Enterococcus	Has TMDL been completed? Has MS4 been notified of TMDL requirements? Has MS4 developed a Scope of Work or TMDL Implementation Plan?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
What kind of public education and outreach strategy does the MS4 implement to target each pollutant of concern? (e.g., signage on installed stormwater controls, resources on website, pamphlets about litter, pet waste, grass clippings, fertilizer use, etc.)			
Pollutant of Concern: Bacteria Metals	Strategy: The City maintains a stormwater website with links to websites that provide stormwater information, including the Blackstone River Coalition, available at (https://www.woonsocketri.org/stormwater-management). The City also has installed two dog waste stations along the Blackstone River bike path and plans to install more in the future. The City also held a hazardous waste collection event in 2018 with RI Resource Recovery.	Target Audience: Residents	

POLLUTION PREVENTION AND GOOD HOUSEKEEPING IN MUNICIPAL OPERATIONS cont'd

Has the MS4 installed stormwater BMPs to address impairments? ☒ YES ☐ NO

If yes, indicate the type of stormwater control, date installed, ownership, and who is responsible for maintenance:

Type of Stormwater Control: Sedimentation Basin installed on Winthrop/St Leon Street	Date Installed: 2017	Who owns it? The City	Who maintains it? The City
--	-------------------------	--------------------------	-------------------------------

Additional enhanced minimum measures used to address water quality issues (e.g., increased street sweeping or catch basin cleaning in areas with high pollutant loading, installation of floatable traps/screens, etc.):

The Town contracted with Fuss and O'Neill in 2015 to develop a TMDL Implementation Plan for the Blackstone River, including its tributaries Peters River, Mill River and Cherry Brook. A copy of the Implementation Plan is included as *Attachment 18*, which details specific actions taken and proposed to address the impairments.



SPECIAL RESOURCE PROTECTION WATERS (SRPWs)

SECTION I. In accordance with Rule 31(a)(5)(i)G of the *Regulations for the Rhode Island Pollutant Discharge Elimination System* (RIPDES Regs), on or after March 10, 2008, any discharge from a small municipal separate storm sewer system to any Special Resource Protection Waters (SRPWs) or impaired water bodies within its jurisdiction must obtain permits if a waiver has not been granted in accordance to Rule 31(g)(5)(iii). A list of SRPWs can be found in Appendix D of the *RIDEM Water Quality Regulations* at this link:

<http://www.dem.ri.gov/pubs/regs/regs/water/h20q09a.pdf>

The 2008 303(d) Impaired Waters list can be found in Appendix G of the *2008 Integrated Water Quality Monitoring and Assessment Report* at this link: <http://www.dem.ri.gov/programs/benviron/water/quality/pdf/iwqmon08.pdf>

If you have discharges from your MS4 (regardless of its location) to any of the listed SRPWs or impaired waters (including impaired waters when a TMDL has not been approved), please provide an assessment of the progress towards expanding the MS4 Phase II Stormwater Program to include the discharges to the aforementioned waters and adapting the Six Minimum Control Measures to include the control of stormwater in these areas. Please indicate a rationale for the activities chosen to protect these waters. Please note that all of the measurable goals and BMPs required by the 2003 MS4 General Permit may not be applicable to these discharges.

As depicted on the map provided in Appendix J of the DEM Regulations for the Rhode Island Pollutant Discharge Elimination System, the entire limits of the City of Woonsocket are designated as an Urbanized Area.

There are no Special Resource Protection Waters (SRPWs) located within the City of Woonsocket to which the City's MS4s discharge (Appendix D, RIDEM Water Quality Regulations). The Woonsocket Reservoir #1 and #3 waterbodies are included in the SRPW list; however, these are indicated as being located in North Smithfield.

The City worked with CDM Smith to design and install a storm quality improvement/sedimentation basin as part of a road reclamation project on Winthrop/St. Leon St. Installations were completed in 2017.



RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Office of Water Resources



INSTRUCTIONS FOR THE RI POLLUTANT DISCHARGE ELIMINATION SYSTEM (RIPDES)

SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS AND INDUSTRIAL ACTIVITY AT ELIGIBLE FACILITIES OPERATED BY REGULATED SMALL MS4s ANNUAL REPORT FORM

WHO MUST SUBMIT AN ANNUAL REPORT:

Owners/Operators of regulated small municipal separate storm sewer systems (MS4s) and industrial activities authorized to discharge stormwater under the Rhode Island Pollutant Discharge Elimination System (RIPDES) Stormwater General Permit for Small Municipal Separate Storm Sewer Systems and Industrial Activity at Eligible Facilities Operated by Regulated Small MS4s (hereafter referred to as "the General Permit"), must submit an Annual Report, outlined in Part IV.G of the permit. The Report must be submitted each year after permit issuance by March 10th to track progress of compliance. If you have questions regarding this Annual Report Form contact Margarita Chatterton of the Rhode Island Department of Environmental Management (RIDEM), Office of Water Resources, Permitting Section at (401) 222-4700 ext. 7605.

The Annual Report must be submitted to:

RIDEM
Office of Water Resources
RIPDES Program
Permitting Section
235 Promenade Street
Providence, RI 02908
ATTN: Jennifer Stout

INSTRUCTIONS FOR COMPLETION:

GENERAL INFORMATION PAGE:

"RIPDES Permit #"

Include your permit ID # to ensure proper tracking.

"Operator of MS4"

Give the legal name of the person, firm, public (municipal) organization, or any other entity that is responsible for day-to-day operations of the MS4 described in this application (RIPDES Rules 3 & 12). Enter the complete address and telephone number of the operator. Circle the appropriate choice to indicate the legal status of the operator of the MS4.

"Owner of MS4"

If the owner is the same as the operator do not complete this section. Give the legal name of the person, firm, public (municipal) organization, or any other entity that owns the MS4 described in this application (RIPDES

Rules 3 & 12). Do not use a colloquial name. Enter the complete address and telephone number of the owner.

"Certification"

State and federal statutes provide for severe penalties for submitting false information on this application form. State and federal regulations require this application to be signed as follows (RIPDES Rule 12);

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information or permit application requirements; and where authority to sign documentation has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor;

For a Municipality, State, Federal or other public site: by either a principal executive officer or ranking elected official.

SECTION I- OVERALL EVALUATION OF BMPS AND MEASURABLE GOALS:

One or more pages, front and back, are provided to report on the status of measurable goals which have been developed to aid in the implementation of strategies, procedures, and programs used to achieve each of the six minimum control measures in Part IV.B of the General Permit. This section provides narrative space for a descriptive explanation and evaluation of the actions taken to satisfy each of the minimum control measures for the 2018 calendar year. Please type or print. If additional space is needed, modify as necessary. Please submit attachments to the appropriate minimum control measure following the format provided.

A Permit ID # has been provided, which refers to the part of the permit where you can find a listing or description of the required measurable goal.

Please provide a general summary of actions taken (implementation of BMPs, development of procedures, events, etc.) to meet the measurable goals of the minimum measure. **Be sure to identify parties responsible for achieving each measurable goal** and reference any reliance on another entity for achieving any measurable goal. **Mark with an asterisk (*) if this person/entity is different from last year.**

Describe whether each measurable goal was completed within the time proposed in the General Permit or your Stormwater Management Program Plan (SWMPP). Why or why not? Provide a progress report and discussion of activities that will be carried out during the next reporting cycle to satisfy the requirements of the minimum measures. If applicable, assess the appropriateness of the actions taken to meet the requirements of the minimum measure. In determining appropriateness, you may want to consider at a minimum the local population targeted, pollution sources addressed, receiving water concerns, integration with local management procedures, and available resources and violations or environmental impacts eliminated or minimized.

Also, discuss the effectiveness of the implementation of BMPs to meet the requirements of the minimum measure and the overall effectiveness of the minimum measure. Describe your progress towards achieving the overall goal of reducing the discharge of pollutants. Please include assessment parameters/indicators used to measure the success of the minimum measure. Also include a discussion of any proposed changes to BMPs or measurable goals.

After evaluation, it may be necessary to make changes or modifications to your Implementation Schedule if the time frame, appropriateness or effectiveness cannot be assured. If so, please include descriptions of changes or modifications, and detailed justification in the appropriate sections.

SECTION II- ADDITIONAL ANNUAL REPORT REQUIREMENTS

Section II refers to additional reporting requirements that the General Permit requires to be submitted to the Department as part of the Annual Report. Section II requirements apply to Minimum Control Measures 2 through 6.

Minimum Control Measure #2: Section II:

Specify the date of and how the annual report was public noticed. If a public meeting was needed, provide the date and place. Include a summary of public comments received

in the public comment period of the draft annual report and planned responses or changes to the program (new or revised BMP's and measurable goals, partnerships, etc.). Be sure to attach a copy of your public notice (Parts IV.G.2.h and IV.G.2.i) to the Annual Report.

Minimum Control Measure #3: Section II.A:

Provide the number of illicit discharges identified in 2018, number of illicit discharges tracked in 2018, number of illicit discharges eliminated in 2018, complaints received, complaints investigated, violations issued and resolved with a summary of enforcement actions, number of unresolved violations that have been referred to RIDEM, the total number of illicit discharges identified to date, and the total number of illicit discharges remaining unresolved at the end of 2018. Include a short narrative describing the extent to which your system has been mapped (Part IV.G.2.m), and the total number of outfalls identified to date.

Minimum Control Measure #3: Section II.B:

List identified MS4 interconnections, including location, date found, operator of the physically interconnected MS4, and originating source of newly identified physical interconnections with other small MS4s. Also note any planned or coordinated activities with the physically interconnected MS4 (Part IV.G.2.k and IV.G.2.l).

Minimum Control Measures #4 & 5: Section II.A:

Identify the number of construction and post-construction plan and SWPPP/SESC Plan reviews completed during Year 15 (2018) and any additional information. This includes, but is not limited to a summary of the reviews, responsible parties, and types of projects reviewed.

Minimum Control Measure #4: Section II.B:

Construction inspection information for erosion and sediment control should be submitted annually as stated in Part IV.G.2.n. Provide a summary of the number of site inspections conducted, inspections that have resulted in enforcement actions, violations that have been resolved and of those unresolved, referred to RIDEM.

Minimum Control Measure #5: Section II.B:

Post-construction inspection information for proper installation of post-construction structural BMPs should be submitted annually as stated in Part IV.G.2.o. This should provide a summary of the number of site inspections conducted, inspections that have resulted in enforcement actions, violations that have been resolved and of those unresolved, referred to RIDEM.

Minimum Control Measure #5: Section II.C:

Inspection information for proper operation and maintenance of post-construction structural BMPs should be submitted annually as stated in Part IV.G.2.p. This should provide a summary of the number of site inspections conducted, inspections that have resulted in

enforcement actions, violations that have been resolved and of those unresolved, referred to RIDEM.

Minimum Control Measure #6: Section II.A:

As prescribed in Part IV.B.6.b.1.i of the General Permit, the MS4 operator must identify and list the specific location and description of all structural BMPs in the SWMPP at the time of application and update the information in the annual report.

Minimum Control Measure #6: Section II.B:

Part IV.B.6.b.1.v of the General Permit states to identify and report annually, as part of the annual report, known discharges causing scouring at outfall pipes or outfalls with excessive sedimentation. Include Outfall ID #, location, description of the problem, any remediation taken, and the ultimate receiving water body.

Minimum Control Measure #6: Section II.C:

As noted in Part IV.G.2.j of the General Permit, specify any planned municipal construction projects or opportunities to include water quality BMPs, low impact development, or seek to promote infiltration and recharge.

Minimum Control Measure #6: Section II.D:

Please include a summary of results of any other information that has been collected and analyzed. This includes any type of data, including, but not limited to, dry weather survey data (Part IV.G.2.e).

TOTAL MAXIMUM DAILY LOAD (TMDL) or other Water Quality Determination REQUIREMENTS

Section I:

Complete this section only if your MS4 is subject to an approved TMDL. TMDL requirements may require the implementation of the six minimum control measures to address the pollutants of concern, and/or additional structural stormwater controls or measures that are necessary to meet the provisions of the approved TMDL. Be sure to identify the approved TMDL and assess the progress towards meeting the requirements for the control of stormwater (Part IV.G.2.d).

Provide a progress report on the present status and discussion of activities that have been accomplished or will be carried out during the next reporting cycle to satisfy the requirements of the TMDL. If applicable, assess the appropriateness of the BMPs selected under each of the six minimum control measures to meet the requirements of the TMDL. In determining appropriateness, you may want to consider violations or environmental impacts eliminated or minimized.

Please include assessment parameters/indicators that will be used to measure the success of the selected BMPs. Also include a discussion of any proposed changes to BMPs or measurable goals.

SPECIAL RESOURCE PROTECTION WATERS (SRPWs)

Section I:

Complete this section only if your MS4, located outside Urbanized Areas or Densely Populated Areas, discharges to:

a SRPW as listed in Appendix D of the *RIDEM Water Quality Regulations* at this link:

<http://www.dem.ri.gov/pubs/regs/regs/water/h20q09a.pdf>

or

an impaired water body including water bodies with no approved TMDL as listed in Appendix G of the 2008 *Integrated Water Quality Monitoring and Assessment Report* at this link:

<http://www.dem.ri.gov/programs/benviron/water/quality/pdf/iwqmon08.pdf>.

In accordance with Rule 31(a)(5)(i)G in the *Regulations for the Rhode Island Pollutant Discharge Elimination System* (RIPDES Regulations), MS4s were required to incorporate any discharges to these water bodies into their MS4 Program on or after March 10, 2008 unless a waiver has been granted in accordance with Rule 31(g)(5)(iii).

Provide a progress report on the present status and discussion of activities that have been accomplished or will be carried out during the next reporting cycle to incorporate these areas into the MS4's Phase II Stormwater Program.

Attachment 1

Public Notice

THE CALL
PO BOX 823
PAWTUCKET RI 02862
(401)762-3000
Fax (401)767-8509

ORDER CONFIRMATION

Salesperson: HOUSE ACCOUNT

Printed at 02/28/19 11:55 by cbevi-sc

Acct #: 33371

Ad #: 385194

Status: New

CITY OF WOONSOCKET SOLID WASTE DIVISIO
P.O. BOX B
WOONSOCKET RI 02895

Start: 03/01/2019 Stop: 03/01/2019
Times Ord: 1 Times Run: ***
LEG 1.00 X 165.00 Words: 248
Total LEG 165.00
Class: 100 LEGAL
Rate: CLE Cost: 262.55
Affidavits: 1

Contact: MIKE DEBROISSE

Phone: (401)762-6400

Fax#:

Email: mdebrouisse@woonsocketri.org;

Agency:

Ad Descrpt: CITY OF WOONSOCKET 169 MA

Given by: *

P.O. #:

Created: cbevi 02/25/19 15:21

Last Changed: cbevi 02/28/19 11:55

PUB ZONE EDT TP RUN DATES

CALL A 95 S 03/01

AUTHORIZATION

Under this agreement rates are subject to change with 30 days notice. In the event of a cancellation before schedule completion, I understand that the rate charged will be based upon the rate for the number of insertions used.

Michael Debrouisse
Name (print or type)

[Signature]
Name (signature)

(CONTINUED ON NEXT PAGE)

THE CALL
PO BOX 823
PAWTUCKET RI 02862
(401) 762-3000
Fax (401) 767-8509

ORDER CONFIRMATION (CONTINUED)

Salesperson: HOUSE ACCOUNT

Printed at 02/28/19 11:55 by cbevi-sc

Acct #: 33371

Ad #: 385194

Status: New

CITY OF WOONSOCKET
169 MAIN STREET
WOONSOCKET, RI
02895

A Draft Phase II
Stormwater Annual Re-
port, prepared in accor-
dance with the Rhode
Island Pollution Dis-
charge Elimination Sys-
tem (RIIDES) program
general permit for
facilities operated by
regulated small MS4s,
will be available for
review at the City of
Woonsocket Engineer-
ing Division Office
starting March 1, 2018.

RIPDES PERMIT
NUMBER: RIR040016

For any questions
contact:
Michael Debrouse,
Superintendent of
Solid Waste/
Engineering
City of Woonsocket
Engineering Division
169 Main St.
Woonsocket, RI 02895
(401) 767-9213

The administrative
record containing all
documents is on file
and may be inspected
by appointment at the
City's office mentioned
above between 8:30
a.m. and 4:00 p.m.
Monday through Friday
except holidays. Inter-
ested parties may sub-
mit comments on the
draft Annual Report
and amendments to
the SWMPP and the
administrative record
to the address above
by the close of the
public comment period
which ends March
7, 2018. Commenter's
may request a longer
comment period if nec-
essary to provide a
reasonable opportunity
to comply with these
requirements. If, dur-
ing the comment peri-
od, significant com-
ments are received
concerning the draft
Annual Report or
amendments to the
SWMPP, the City of
Woonsocket will pro-
vide a written re-
sponse to comments to
all persons that sub-
mitted comments and
all members of the
public that request a
copy of the response.
The response will in-
clude a final Annual
Report and identify
what changes to the
SWMPP have been
made, if any.

Woonsocket City Hall
169 Maine Street
Woonsocket, RI 02895

Attachment 2

Earth Day Cleanup Advertisement

Earth Day Cleanup 2018

Saturday, May 5th 8am to 12pm

Volunteers will meet at the intersection of Norman Street and Olive Street in Oak Grove, Woonsocket. Students who volunteer will be able to acquire community service hours at the end of the event. Trash pickers, gloves and trash bags will be provided.



Questions? For more information, you can contact either:

❖ The City of Woonsocket: Mike Debroisse at 401-767-8880 or MDebroisse@woonsocketri.org

-or-

❖ Student Collaborator: Dominique DiSpirito at dombratoo@gmail.com

*"I know it may seem small
and insignificant, but it's not about
what it is, it's about what it can become."*

-The Lorax

Special thanks to the City of Woonsocket and Keep the Blackstone Valley Beautiful for making this senior project possible!

Attachment 3

Detention Basin Brochure

Detention Basin Maintenance

Homeowners' Associations and Business

Why be concerned?

Homeowners' Associations and business owners are entirely responsible for maintaining their detention basins. Detention basins require maintenance to ensure that they function properly. Poorly maintained basins, regardless of their design, lose their ability both to control flooding on private property and prevent pollution like sediments, fertilizers and pesticides from entering the creeks and streams near homes and businesses.

Detention basins are typically located where new residential, commercial, and industrial centers are developed. New development replaces open land and forest with impervious surfaces such as parking lots, roads, and roof tops. As stormwater runs off these impervious surfaces it enters streams and rivers at a much faster rate, causing streambank erosion and possible flooding downstream. Detention basins help control potential flooding and improve water quality.



Are There Different Types of Detention Basins?

Yes, in general there are three types of detention basins:

- Dry Detention Basins
- Wet Detention Basins
- Stormwater Marsh Basins



Dry detention basins are typically dry depressions except after a major rain storm when they temporarily fill with stormwater. These basins slow the rate at which stormwater from a new development enters stream and rivers and thus help prevent flooding; however,

dry detention basins are not very effective at removing pollutants because the stormwater from smaller storms passes through more quickly. Smaller storms (with less rain) contain higher amounts of pollutants than larger storms. The side slopes of these basins are generally vegetated with short, turf grass.



Like dry detention basins, wet detention basins also help control flooding, but they are more effective at removing pollutants from stormwater. Wet detention basins typically have a permanent pool of water and more wetland plant life. The permanent pool

of water allows pollutants such as sediments to settle to the bottom of the basin. In addition, the wetland vegetation helps filter out pollutants and uses others up as fertilizers as the stormwater passes through the basin.

Stormwater marsh basins are similar to wet detention basins, but contain more wetland plants such as cattails, bulrush, and sedges. The wetland vegetation absorbs fertilizers that run off neighboring lawns and filters out other pollutants, which otherwise might enter nearby creeks and streams. They also provide fish and wildlife habitat.

The ideal detention basin provides the greatest number of benefits including flood control and water quality improvements. This typically consists of wet detention basin combined with a stormwater marsh basin.

What Type of Maintenance is required?

Detention basins require inspection and maintenance to ensure that they are functioning properly to protect private property and improve water quality. At a minimum, the Homeowners' Association or business owner should conduct an annual inspection and an inspection after major storms.

Obtain a Copy of Your Detention Basin Plan

Obtain a copy of the detention basin plan from the Engineering Division to determine what type of detention basin is in your development.

Inspect Inlet and Outlet Pipes

Inlet Pipes direct stormwater from developments into detention basins, including stormwater from residential yards, driveways and roads. Typically there are two to three inlet pipes in a detention basin.

Outlet Pipes direct stormwater from a detention basin to a nearby creek or stream. Typically there is only one outlet associated with a basin. The outlet may consist of a single pipe, a riser pipe or structure.

Check the following:

Structural integrity – Inspect the pipe to make sure it isn't crumbling or broken.

Rip Rap – Rip Rap (typically pieces of stone) is placed around the pipe where it enters the basin to prevent erosion. Check for erosion around the pipe or missing rip rap.

Obstructions – Inspect the pipe end to determine if sediment, dirt, or debris is obstructing the flow of water from the pipe into the basin. Minor amounts of sediment around pipe openings can be removed with a shovel and wheelbarrow, spread evenly on upland areas and seeded with turf grass.



If any problems are occurring or if you have questions, contact the Engineering Division for assistance.

(401) 767-9216

Inspect for Litter and Debris

Twice each year (spring and fall) and after a major storm, check for debris near the inlets and in the basin. Remove and dispose of debris or litter with household trash.



Outlet Pipe choked with debris and trash

Examine the Side Slopes for Erosion

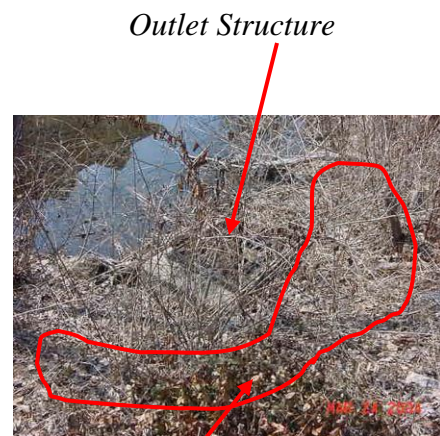
Twice a year (spring and fall) and after a major storm, check for gullies or sloughing of the banks and other disturbances for animals or vehicles. Any damage observed should be repaired immediately by filling any eroded areas with topsoil and seeding with turf grass. It is also important to place mulch or straw over the seed to prevent it from being washed into the basin.

Inspect Vegetation

In the spring and fall, inspect the vegetation on the banks and in the basin. Maintenance activities will vary depending on the type of basin.

Repair bare spots, from vegetation control, along bank with turf grass seed, meadow grass or wildflowers.

Meadow grasses and wildflowers grown along banks of the detention basin will reduce long-term landscape maintenance.



Thick vegetation

Mowing

The amount of mowing required depends on the type of detention basin and the desired appearance. Typically, basins with turf grass only need to be mowed once or twice a year. Basins with native grass or wildflowers should be mowed only once a year in late fall or early spring.



Adding Vegetation to the Banks

You can add more color and visual interest, as well as improve bird habitat by planting a variety of shrubs and wildflowers along the banks of detention basins. Shrubs such as redosier dogwood, silky dogwood, meadowsweet, common elder, buttonbush and highbrush-cranberry typically grow well where the ground is damp. Wildflowers like swamp milkweed, joe-pye-weed, cardinal flower, beggartick, marsh blazing star, aster and goldenrod are good choices for damp areas.

Record Keeping

Keep records of all inspections including date, name of inspector, what was observed, and maintenance activities performed.

Keep records of all cost for inspections, such as consulting with professional engineers, and repair cost. Good records will help you make adjustments to the maintenance program as needed



Attachment 4

Hazardous Waste Collection Day Advertisement

PUBLIC NOTICE
CITY OF WOONSOCKET

CITY OF WOONSOCKET
SOLID WASTE DIVISION
HAZARDOUS WASTE COLLECTION

The City of Woonsocket Solid Waste Division in conjunction with RI Resource Recovery Corporation Eco-Depot will be hosting a **FREE** Hazardous Waste Collection Day on:

Saturday May 19, 2018 (rain or shine)
8 am to 1 pm
Woonsocket Public Services Division Facility
1117 River Street.

Included in this event is:

FREE collection of E-Waste (Rhode Island residents only)
and
FREE document shredding (Woonsocket Residents only)

E-waste includes: computers (CPUs), computer monitors (CRT and flat panel), combination units (CPUs with monitors), laptops (with a screen greater than 9 inches diagonally), televisions (including CRT, LCD and plasma with a screen greater than 9 inches diagonally), and similar video display devices with a screen greater than 9 inches diagonally which contains a circuit board.

It does not include printers.

What is Household Hazardous Waste?

A substance is hazardous if it falls into any of the following categories:

- **Toxic:** poisonous or lethal when ingested, absorbed, touched or inhaled
- **Flammable/Combustible:** ignites under almost all conditions
- **Corrosive/Caustic:** deteriorates metal and causes irreversible alteration of living tissue by chemical action
- **Reactive:** creates an explosion or produces deadly vapors

* Such as **oil-based paint**

Hazardous materials often bear the labels, "Danger", "Warning", "Caution", and "Poison". Many products contain volatile organic compounds (VOCs) which are extremely hazardous to human health. Misusing or mishandling products can result in serious injury, burns, permanent damage to human tissue and organs, severe illness such as cancer, and death.

Appointments are recommended and can be obtained by calling 942-1430 extension 241.

The Eco-Depot collection is open to all Rhode Island residents.

Other items that can also be dropped off are: Propane tanks, car batteries, appliances, clothes, books, rigid plastic, scrap metals and paper/cardboard.

This is the one and only day for this event in the City.

Questions can be directed to the Solid Waste Division at (401) 767-8880.

Attachment 5

National Stormwater Center Training Course Certificates

CERTIFIED STORMWATER INSPECTOR

TIMOTHY BRUNDRETT

HAS BEEN AWARDED THIS CERTIFICATE OF ACHIEVEMENT FOR HAVING
SUCCESSFULLY COMPLETED ALL REQUIREMENTS OF THE
NATIONAL STORMWATER CENTER TRAINING COURSE

THIS CERTIFICATION IS EFFECTIVE FOR A PERIOD OF FIVE YEARS AND
INCLUDES 1.2 CONTINUING EDUCATION UNITS (CEUS)

DISCIPLINES DEVELOPED:
STORMWATER PERMIT COMPLIANCE
AND INSPECTIONS OF INDUSTRIAL
ACTIVITIES, COMMERCIAL FACILITIES,
CONSTRUCTION PROJECTS, AND
MUNICIPAL OPERATIONS



POLLUTION PREVENTION
ILLEGIT DISCHARGE DETECTION AND
ELIMINATION
PUBLIC EDUCATION AND INVOLVEMENT
CONSTRUCTION
POST CONSTRUCTION

Michele Lomax

MICHELE LOMAX, DIRECTOR OF OPERATIONS

8734

CERTIFICATE NUMBER

FEBRUARY 16, 2018

DATE

THE NATIONAL STORMWATER CENTER
107-F EAST BROADWAY STREET BEL AIR, MD 21014
www.NPDES.com

CERTIFIED STORMWATER INSPECTOR

MICHAEL DEBROISSE

HAS BEEN AWARDED THIS CERTIFICATE OF ACHIEVEMENT FOR HAVING
SUCCESSFULLY COMPLETED ALL REQUIREMENTS OF THE
NATIONAL STORMWATER CENTER TRAINING COURSE

THIS CERTIFICATION IS EFFECTIVE FOR A PERIOD OF FIVE YEARS AND
INCLUDES 1.2 CONTINUING EDUCATION UNITS (CEUS)

DISCIPLINES DEVELOPED:
STORMWATER PERMIT COMPLIANCE
AND INSPECTIONS OF INDUSTRIAL
ACTIVITIES, COMMERCIAL FACILITIES,
CONSTRUCTION PROJECTS, AND
MUNICIPAL OPERATIONS



POLLUTION PREVENTION
ILLICIT DISCHARGE DETECTION AND
ELIMINATION
PUBLIC EDUCATION AND INVOLVEMENT
CONSTRUCTION
POST CONSTRUCTION

Michael Lomax

MICHELE LOMAX, DIRECTOR OF OPERATIONS

8733

CERTIFICATE NUMBER

FEBRUARY 16, 2018

DATE

THE NATIONAL STORMWATER CENTER
107-F EAST BROADWAY STREET BEL AIR, MD 21014
WWW.NPDES.COM

Attachment 6

Healthy Trees Training Advertisement

Healthy Trees For Everyone

Thursday, February 22, 2018
Rhode Island College | Gaige Hall

SPEAKERS AGENDA

- 9:30am- 10:15am:** TeeJay Boudreau- Deputy Director, RIDEM-Division of Forest Environment
Greening Rhode Island: The America the Beautiful (ATB) and Energy Saving Tree (EST) Planting Programs
- 10:15am- 11:00am:** Paul Ricard- Forest Health Program Coordinator, RIDEM-Division of Forest Environment
Spring Caterpillar Defoliation Update
- 11:00am- 11:45am:** Craig Hotchkiss- Project Coordinator, RI Tree Council
Simple Approaches for Implementing Local Tree Planting Projects
- 11:45am- 12:30pm:** Lunch
- 12:30pm- 1:15pm:** Chris Rooney- Systems Arborist, The NationalGrid Companies
Trees and Energy
- 1:15pm-2:00pm:** John T Campanini, Jr-Technical Advisor, RI Tree Council
Maximizing Tree-Derived Benefits

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Attachment 7

Floodplain Management Training Advertisement and Certificate



An Orientation to the Floodplain Management Field in Rhode Island

Tuesday, February 27, 2018

RIDEM, 235 Promenade Street, Providence, RI

Objectives

- explain the current structure of floodplain management in Rhode Island, including an overview of the different organizations and agencies involved
- describe the Association of State Floodplain Managers' (ASFPM) Certified Floodplain Manager (CFM®) Program
- discuss the interdisciplinary nature of floodplain management and identify key resources
- recognize the purpose, structure, and function of the RI Flood Mitigation Association (RIFMA)

Agenda

- 9:00 am **Welcome & Introductions** Jennifer West | Narragansett Bay Research Reserve
- 9:10 am **Floodplain Management in Rhode Island** Melinda Hopkins | RI Emergency Management Agency (RIEMA) *What is the structure and who are the players? What kinds of activities are taking place? What are benefits of being involved?*
- 9:30 am **Q&A & Discussion**
- 9:40 am **Interdisciplinary Panel** *Professionals from various sectors discuss how and why they're involved with floodplain management*
Melinda Hopkins, State Hazard Mitigation Officer, RIEMA
Janet Freedman, Coastal Geologist, RI Coastal Resources Management Council
Toni Marie Pignatelli, Senior Planner, Michael Baker International
Wayne Barnes, Senior Planner & Deputy EMA Director, City of East Providence
David Prescott South County Coastkeeper, Save The Bay
- 10:20 am **Wrap up & Evaluations**
- 10:30 am **Adjourn**

Speaker Biographies

Melinda Hopkins, CFM, is the State Hazard Mitigation Officer with the Rhode Island Emergency Management Agency (RIEMA). Melinda is a Certified Floodplain Manager with experience in floodplain management, grants administration, hazard mitigation planning and project implementation having worked closely with Local, State and Federal officials. Her work has focused on implementing the Federal Emergency Management Agency's (FEMA) Hazard Mitigation

ASSOCIATION OF STATE

FLOODPLAIN MANAGERS, INC.

CERTIFICATION BOARD OF REGENTS

HEREBY CERTIFIES THAT PURSUANT TO THE PROVISIONS OF THE CHARTER FOR THE
CERTIFIED FLOODPLAIN MANAGER PROGRAM

Brad R. Ward, CFM

IS DULY REGISTERED AS AN

ASFPM CERTIFIED FLOODPLAIN MANAGER

IN TESTIMONY WHEREOF THIS CERTIFICATE HAS BEEN ISSUED BY THE AUTHORITY OF THE
CERTIFICATION BOARD OF REGENTS, CERTIFICATE NO. US-18-10205, ISSUED 2/9/2018. THIS
CERTIFICATE SHALL EXPIRE 7/31/2020, UNLESS RENEWED ACCORDING TO THE RULES OF THIS BOARD.

Mark A. Riebau

CERTIFICATION BOARD OF REGENTS
PRESIDENT, MARK RIEBAU, CFM

Chad M. Berginnis

ASSOCIATION OF STATE FLOODPLAIN MANAGERS
EXECUTIVE DIRECTOR, CHAD M. BERGINNIS, CFM

ASFPM
CFM®
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Attachment 8

RIDOT Linear Stormwater Manual Training Correspondence

Debroisse, Mike

From: Richardson, Alisa (DOT) [Alisa.Richardson@dot.ri.gov]
Sent: Friday, November 02, 2018 2:42 PM
To: amayer@woodardcurran.com; ASHEAR@CWLTD.NET; agardiner@cherenzia.com; asilvia@pawtucketri.com; Zeman, Art (DEM); ashley.allard-lacroix@unilock.com; WBOMBARD@PROVIDENCERI.GOV; robert.wright@aecom.com; blang@parecorp.com; cung@vhb.com; cnquinn@woodardcurran.com; cduhamel@diprete-eng.com; Raymond, Courtney (DOT); daniel.jannetti@crossmaneng.com; dave.mclaughlin@cleanoceanaccess.org; dmanoni@commonwealth-eng.com; Paiva, Deirdre (DOT); etally@cranstonri.org; EKnuth@Commonwealth-Eng.com; Panciera, Ernie (DEM); Evan.Rambikur@crossmaneng.com; gcapalbo@quonset.com; gerritt@mindspring.com; HAKinfolarin@Commonwealth-Eng.com; Hamilton, Heather (DOT); hperalta@woodardcurran.com; igor.runge@gza.com; Jim@GeremiaEngineering.com; Jgold@essgroup.com; jpeterson@vhb.com; Stout, Jennifer (DEM); Rodas, Jessica (DOT); Eastman, Jill (DEM); Martins, Jose (DOT); Haberek, Joseph (DEM); joseph.skymba@aecom.com; jcurrier@rirrc.org; kbeck@commonwealth-eng.com; kate.mignone@aecom.com; kmacdonald@parecorp.com; Caesar, Kelly (DOT); kaguiar@beta-inc.com; khurshidjahan@uri.com; kwiegand@northkingstown.org; shermanld@cdmsmith.com; LORRICB@VERIZON.NET; mharrington@northkingstown.org; Debroisse, Mike; mkracov@louisberger.com; mzavalia@commonwealth-eng.com; NIannuzzi@BETA-Inc.com; Leporacci, Nicole (DOT); oliver@geremiaengineering.com; pjacques@woodardcurran.com; rcodega@vhb.com; richard@geremiaengineering.com; rrhodes@vhb.com; Rboyer@nei-cds.com; bsykes@parecorp.com; sheila.dormody@tnc.org; teresa@cherenzia.com; tbehan@commonwealth-eng.com; Whetstone, Tyler (DOT); wmsullivan53@gmail.com; wskorupski@cranstonri.org; william.howard@nationalgrid.com; Lincourt, William (DOT)
Cc: Moore, Brian (DOT); Preiss, John (DOT); Baker, Joseph (DOT); Reilly, Jacqueline (DOT)
Subject: FW: Linear Manual Workshop Confirmation for Thursday November 15th



****CONFIRMATION****

YOU ARE REGISTERED TO ATTEND THE RIDOT STORMWATER LINEAR MANUAL WORKSHOP

When: 8am-12pm on Thursday November 15th

Where: New England Technical Institute, East Greenwich, Room First Floor 106 N
(directions here)

Copies of the Final Draft of the RIDOT Manual are currently available [here until November 17th](#) and the file will **soon** be available on the [RIDOT Stormwater Website](#). RIDOT will not be printing copies of the manual for the workshop.

Preliminary agenda is as follows:

8am – Light Breakfast and Coffee – Sponsored by Fuss & O'Neill

8:30

Remarks by Brian Moore, PE – Administrator for the Office of Stormwater, RIDOT

- Remarks by Eric Beck, PE - Chief of Groundwater and Wetlands Protection, RIDEM
- General Overview of the Manual
- How RIDOT will Use the Manual
- How other agencies can use the manual
- Common obstacles to implementing Stormwater and ways the Manual addresses these issues
- Overview of Tools of the Manual (Templates and Worksheets)
- Opportunity for Questions and Comments
- Rollout Plan

12pm- Adjourn

See you there!

Alisa Diaz Richardson, MS, PE, PMP

Project Manager I

Office of Stormwater Management

401-479-1327

www.dot.ri.gov



Attachment 9

Woonsocket Stormwater Task Force Grant Announcement

The Blackstone River Coalition

The Blackstone River
Coalition is a partnership
of numerous organizations,
businesses, municipalities,
agencies and individuals
working to restore the
Blackstone River and to
improve the health of the
Blackstone River watershed.



www.zaptheblackstone.org

October 23, 2018

Mike Debroisse,
Woonsocket Engineering Dept.
City Hall, Main Street
Woonsocket, RI 02895

INVOICE #7

Yearly payment for Woonsocket Stormwater Task Force as per Paragraph 1
"Section 4a(ii)" of the second Order Amending Consent Order entered by Justice
Silverstein on December 18, 2008 (the "2008 Order")

For period September 15, 2017 – September 15, 2018

\$16,576.00

Please make check payable to Blackstone River Coalition.
P.O. Box 70477, Quinsig Village
Worcester, MA 01607

(Vendor: 120062; Account #1-010-049-52-52209).

Thank you very much.

Peter Coffin

BRC Coordinator
508 753.6087
Peter.coffin@zaptheblackstone.org

Attachment 10

Woonsocket Thundermist Task Force Grant Announcement

PRESS RELEASE

For Immediate Release

Contact: Peter Coffin

508 753.6087

peter.coffin@zaptheblackstone.org

The Blackstone River Coalition

The Blackstone River
Coalition is a partnership
of numerous organizations,
businesses, municipalities,
agencies and individuals
working to restore the
Blackstone River and to
improve the health of the
Blackstone River watershed.



www.zaptheblackstone.org

Grant Funding Available for Water Quality Projects in Woonsocket

The Woonsocket Thundermist Task Force is pleased to announce the availability of funding to support projects that will improve the management of stormwater on private and/or public property within the City of Woonsocket and ultimately lead to improvements in the water quality of the Blackstone River.

This is the seventh year that up to \$25,000 has been made available to support local projects in and around Woonsocket that will lead to a cleaner river. Thanks to a settlement with the State of Rhode Island, it is expected that another \$15,000 will be made available each year for the next 14 years. Potential projects include community education, planting rain gardens or buffer vegetation, erosion control or any creative ideas leading to improvements in water quality by improving the management of stormwater. Funded projects are expected to be completed within a year, although if indicated may be part of a multi-year project. Projects do not require a cash match, but competitive proposals will demonstrate community commitment by building partnerships and leveraging other funding or in-kind support.

The application process is as simple as writing a letter describing the project with a detailed budget identifying who will be doing what and explaining what water quality improvements will be achieved. Letters of interest must be received by July 1, 2018 and funding of successful projects will be available this fall.

Please address all letters to: Blackstone River Coalition
P.O. Box 70477
Worcester, MA 01607

If you have any questions, please e-mail or call Peter Coffin @ 508 753.6087.

The Blackstone River Coalition is a group of non-profit organizations from Rhode Island and Massachusetts working throughout the watershed to improve water quality through a variety of programs. Our office is located at Massachusetts Audubon Society's Broadmeadow Brook Sanctuary in Worcester. Our Rhode Island partners include: Blackstone River Watershed Council/ Friends of the Blackstone, Save the Bay, Audubon Society of R.I., and Conservation Law Foundation. Check out our website www.zaptheblackstone.org

####

Attachment 11

Woonsocket Thundermist Project Information

MATHEW PAYNE, LLC

24 WOOD ST.
PROVIDENCE, RI / 02909

JBARTHMAIER@RISD.EDU

LETTER OF AGREEMENT

CLIENT CONTACT

Thundermist Taskforce
Peter Coffin
peter.coffin@zaptheblackstone.org

PROJECT DESCRIPTION	PAYMENT SCHEDULE	DATES SUBJECT TO CHANGE
<h2>Woonsocket Blackstone Design Guidelines</h2> <p>Mathew Payne, LLC is to provide a design guideline document which includes narrative analysis and graphics on the City of Woonsocket, its watershed, the relevant areas along the Blackstone river, and would provide design recommendations for storm water management, water quality, vegetation, public and private land owner needs, and impacts on the larger community.</p> <p>The schedule is broken into four phases;</p> <p>PHASE A: Mapping and analysis within the City of Woonsocket. Investigation of water quality precedents in RI and New England.</p> <p>PHASE B: Site plan that identifies at least 5 areas where new small or medium scale green infrastructure projects would have positive impacts on water quality.</p> <p>PHASE C: List of up to 4 project sites where new projects could be installed, and 4 conceptual images that would illustrate how the design guidelines might transform these spaces, and impact the environment and the community.</p> <p>PHASE D: Design guidelines that meet the requirements of the Thundermist Task Force SEP, and that establish design protocols that will lead to the greatest water quality improvements on the Blackstone River.</p>	<p>Phase A Kickoff \$7,500</p> <p>Phase B+C Kickoff \$6,000</p> <p>Phase D Complete \$1,500</p>	
<p>Please agree to the terms and description of the project listed here to begin this project.</p> <hr/> <p>CLIENT: SIGNED + PRINTED NAME</p> <p>DATE</p> <hr/> <p>MATHEW PAYNE, LLC: SIGNED + PRINTED NAME</p> <p>DATE</p>	TOTAL PAYMENT	\$15000

EXTENDED TERMS Transfer of rights to client for use of the final artwork (design) only after final payment has been received by Mathew Payne, LLC and final files delivered to client. Alterations and modifications to final artwork cannot be made without first consulting Mathew Payne, LLC who has first option to make alterations. Extensive changes requested after the final is approved by the client may be at an additional cost determined by Mathew Payne, LLC and agreed on by the client.

The client agrees to indemnify and hold Mathew Payne, LL harmless against any and all claims, costs, and expenses, including attorney's fees, due to materials included in the artwork at the request of the client for which no copyright permission or privacy release was requested or for which uses exceed the uses allowed pursuant to a permission or release. Dates of scheduled meetings and deliverables are subject to change pending change in scope, feedback and revisions of deliverables for each phase.

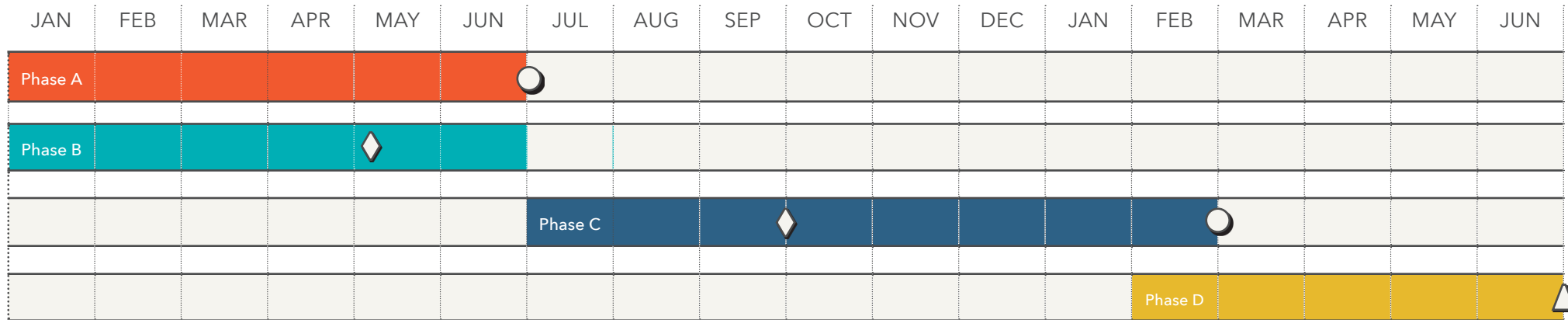
All rights not expressly granted here are retained by Mathew Payne, LLC, including, but not limited to, all rights in sketches, comps or other preliminary and original materials. Payment is due within 30 days of receipt of invoice from Mathew Payne, LLC.

THUNDERMIST PHASE B+C

Progress Report | November 2, 2018

Prepared For:
Woonsocket Thundermist Task Force

In our last meeting we found we were ahead of schedule, having completed the selection of zones for potential stormwater projects. Phase C, which focuses on identifying sites, has been a slower process, as it requires more time for us to meet with potential partners as we search Woonsocket for potential sites. We have adjusted our schedule to reflect this, and have an anticipated completion date of May 17th for the final design guidelines.



Milestones



Check-in / Progress Meetings



Final Phase Presentation / Exhibition



Project Completion

PHASE A 1+2- Analysis(January 4th to June 11th)

- **January 10th** Phase A 1+2 Kick-Off Meeting with Thundermist Task Force
- Begin mapping data from the City of Woonsocket, RI DEM and RI DOT to show:
 1. Stormwater infrastructure
 2. Stormwater controls and other drainage systems
 3. Location of existing green infrastructure stormwater installations throughout the City
 4. Results of TMDL studies on the Blackstone River and its tributaries
 5. City parks and open space
 6. Other relevant Information
 7. Research SEP models and maintenance in the Woonsocket
- **May 9th** Phase A Progress Meeting with Thundermist Task Force
- **June 11th** Phase A Complete, Meeting with Thundermist Task Force

PHASE B - Identify Zones(January 4th to June 11th)

- **January 10th** Phase B Kick-Off Meeting with Thundermist Task Force
- Begin using mapping and analysis from Phase A to identify 5 zones for new small and medium scale green infrastructure installations that could have positive impacts on the water quality of the Woonsocket
- Complete case studies from Phase A 1+2
- Continue necessary mapping and analysis from Phase A 1+2
- **June 11th** Phase B Complete, Meeting with Thundermist Task Force

PHASE C - Identify Sites(June 11th to February 15th)

- **June 11th** Phase C Kick-off Meeting with Thundermist Task Force
- Recommend up to 4 optimal sites per area identified in Phase B for stormwater installations
- Visualize preliminary Conceptual Design of proposed BMPs at 4 sites (location, and approximate size of proposed BMPs, schematic drawings of BMPs) through photographic perspective renderings
- **November 2nd** Phase C Progress Report sent to Thundermist Task Force
- **February 15th** Phase C Complete, Meeting with Thundermist Task Force

PHASE D - Design Guidelines(February 15th to May 17th)

- **February 15th** Phase D Kick-Off Meeting with Thundermist Task Force
- Prepare a document of Design Guidelines to assist in the design and visualization of up to 4 sites identified in Phase C and research / mapping developed in Phase A+B
- Continue necessary mapping and analysis from Phase A 1+2, B and C
- **April 19th** Phase D Progress Meeting with Thundermist Task Force
- **May 17th** Phase D Complete, Meeting with Thundermist Task Force

What Have We Been Doing Since Our Last Meeting?

PHASE B+C PROGRESS

Key Dates

6/11/18	Phase A Wrap-up Meeting
6/12 - 8/1	Ongoing Mapping
8/1-9/15	Graham Foundation Grant Application Writing
8/18/18	Woonsocket Site Visits
9/15/18	Graham Foundation Grant Submitted
10/8/18	Woonsocket Site Visits 2
10/9/18	Meeting with Allison Hamel at RIDOT
10/11/18	Presentation to GIC at Save the Bay

Identifying Sites for Storm Water Projects

Over the summer and early Fall we have been working to identify sites that can be used for future RFP's. We have done this using our research from Phase A, feedback from our team meetings about priorities and potential sites, and visits to Woonsocket to survey for potential sites in the target zones we identified. Through this process we have identified 12 potential sites; they are located within these or correspond to priority drainage areas identified by DEM. These sites vary in size, location, type, proximity to the river, and relationship to public space. Generally, the sites fall into two categories: medium to large sites that will require either a public or private partner. A summary of each site is provided in the next section.

Meetings with Potential Partners

In addition to identifying sites, we have been continuing to meet with potential partners for future storm water projects. We had a productive meeting with Allison Hamel, the Principal Environmental Scientist at RIDOT. Allison informed us that due to the recent consent decree, RIDOT is systematically working through watershed districts to improve their storm water management practices. They will be starting in Providence and Pawtucket, and moving up towards Woonsocket within the next 2 years. They have funding to support these projects, but are looking for partnerships because they lack the space to implement these projects within RIDOT right-of-way land. They are very interested

in working with the task force and the city of Woonsocket to identify sites for storm water improvement projects. Both Woonsocket and RIDOT need to do this anyways to meet the requirements of the consent decree so this potential partnership seems like it could be very fruitful.

Application for Graham Foundation Grant

In September we applied for a Graham Foundation Grant. The Graham Foundation supports 'opportunities to create, develop, and communicate a project about the designed environment.' We are hoping to use this grant to support mounting an exhibition about the research we have done for this project, and to produce additional drawings, mappings, and visualizations to help illustrate the history of the Blackstone River Valley, the impact it has had on the current health of the watershed and on Woonsocket. We will find out in December if we have passed the first round of application review.

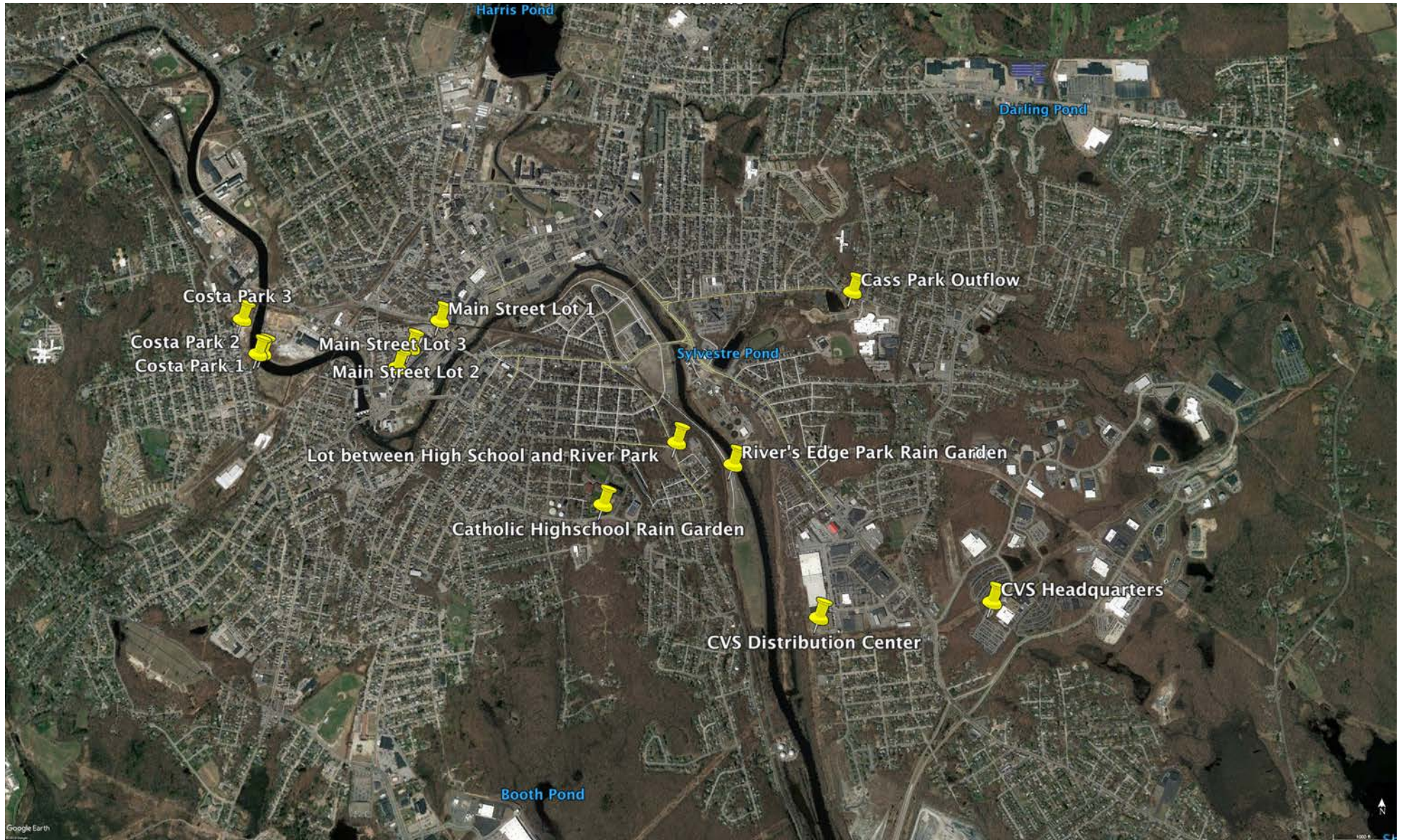
Mapping

Our research assistants have been working with the water flow maps provided by Mike Debroisse to compile a comprehensive digital map of the water flows in Woonsocket. They also have been working to create a map of RIDOT road jurisdictions so that we can look for sites that might be appropriate for partnership. During the summer, they visited the map archives in Woonsocket to photograph and document useful historical maps for the research project.

Presentation to Save the Bay

We were invited by Meg Kerr to present Phase A work at the Green Infrastructure Council's quarterly meeting on October 11th. We gave a brief overview of the research with a focus on the process developed to identify potential sites in Woonsocket. The work was well received, and as a result we got feedback on additional agencies and potential partners to reach out to, such as the Northern and Eastern Conservation Districts. Additionally, another member of the council has reached out about hearing more about the work (Amelia Rose of Groundwork), and this could potentially lead to other useful connections and visibility for the project.

We Have Identified 12 Potential Sites.



RIVER'S EDGE COMPLEX RAIN GARDEN



Address: 135 Davison Ave, Woonsocket, RI 02895

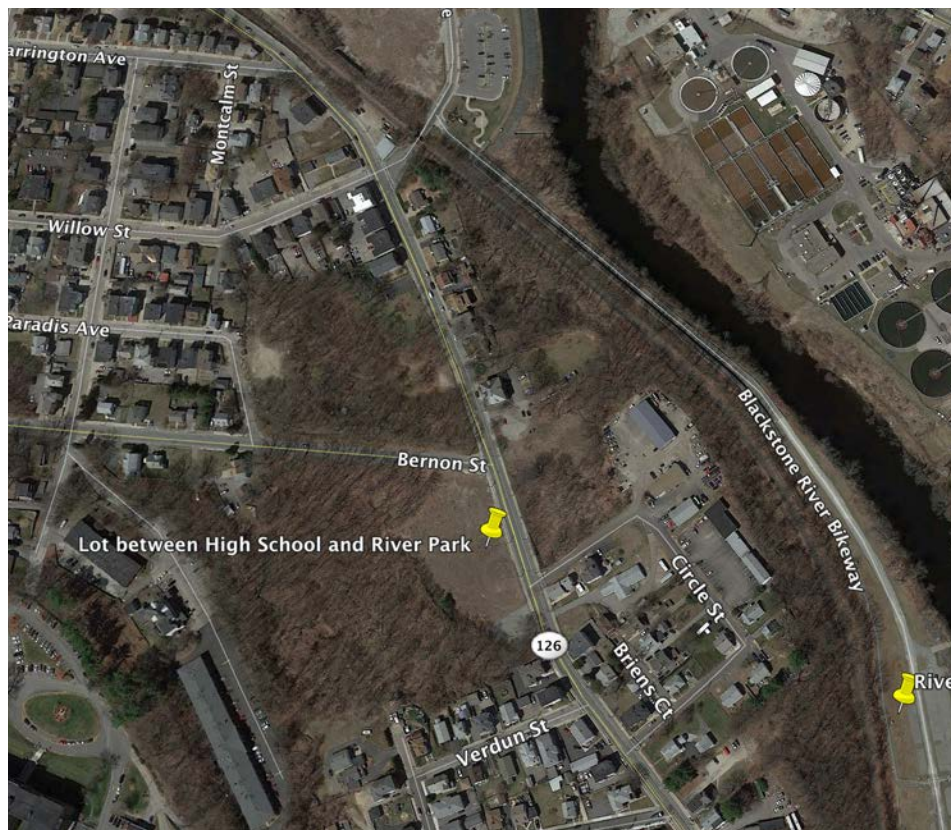
Owner/Partner: City Of Woonsocket

Type: Public

Size: .75 Acres

River's Edge Recreation Complex, located parallel to RT-126 Manville Road and the Blackstone River Bikeway, is accessed by Willow Road and Davison Avenue. It is a public park owned and maintained by the City of Woonsocket with a multitude of recreational activities spanning over 33 acres. The specific site, .75 Acres, lies within the sloped interstitial space between the Bikeway and Davison Avenue before the parking lot approach. This area is a major southbound threshold into the complex for bikers, pedestrians and cars, and is currently underutilized as part of the overall stormwater management system already in place. Our proposal is to integrate a vegetated swale connecting to an inlet system already in place. This project would greatly enhance the entry experience in and out of the park while capturing a large amount of water from the bluff and Bikeway before entering the Blackstone River. We see this project being in partnership with the City, but also a public community engagement opportunity.

ROUTE 126 LOT



Address: RI-126 at Bernon Street, Woonsocket, RI 02895

Owner/Partner: City Of Woonsocket / RIDOT

Type: Semi Public

Size: 5.75 Acres

This parcel is located along RI-126 Manville Road and Bernon Road. This is a relatively level site sitting right below Mt. Saint Charles Academy and the Bernon Bluff. It is mostly occupied by an urban ruderal ecology. There is a bituminous parking lot located in the southern section of the site being used as a construction material staging area—In online aerial imagery, there is evidence of structural demolition. We chose this parcel to study because of its position below the bluff, adjacency to the Blackstone River, ability to sequester large portions of run-off and test different storm-water infrastructure opportunities to create new public space. In partnership with RI-DOT, there is potential for this site becoming a large public asset for neighboring students and residents. This site falls within a critical outfall drainage area making it prone to toxic outwash.

MOUNT ST. CHARLES ACADEMY



Address: 800 Logee St, Woonsocket, RI 02895
Owner/Partner: Mount St. Charles Academy
Type: Semi Public
Size: 1,800 Sq Ft

The site at Mount St. Charles Academy is located between two tennis courts along Logee Street, across from the Academy's main entrance. The plaza is comprised mostly of simple unit paving and permanent seating. This site is owned and maintained by the school and their facilities. On the site there is currently a turf depression located adjacent to a public plaza space used for academic events and passive community use. We would like to utilize this space to demonstrate how a vegetated swale could improve the aesthetic and function of the hydrologic system currently in use to drain their athletic courts. As this project would greatly improve the visual impact of the campus, partners would include the school. This site falls within a critical outfall drainage area making it prone to toxic outwash.



CVS HEADQUARTERS



Address: 1 CVS Drive, Woonsocket, RI 02895

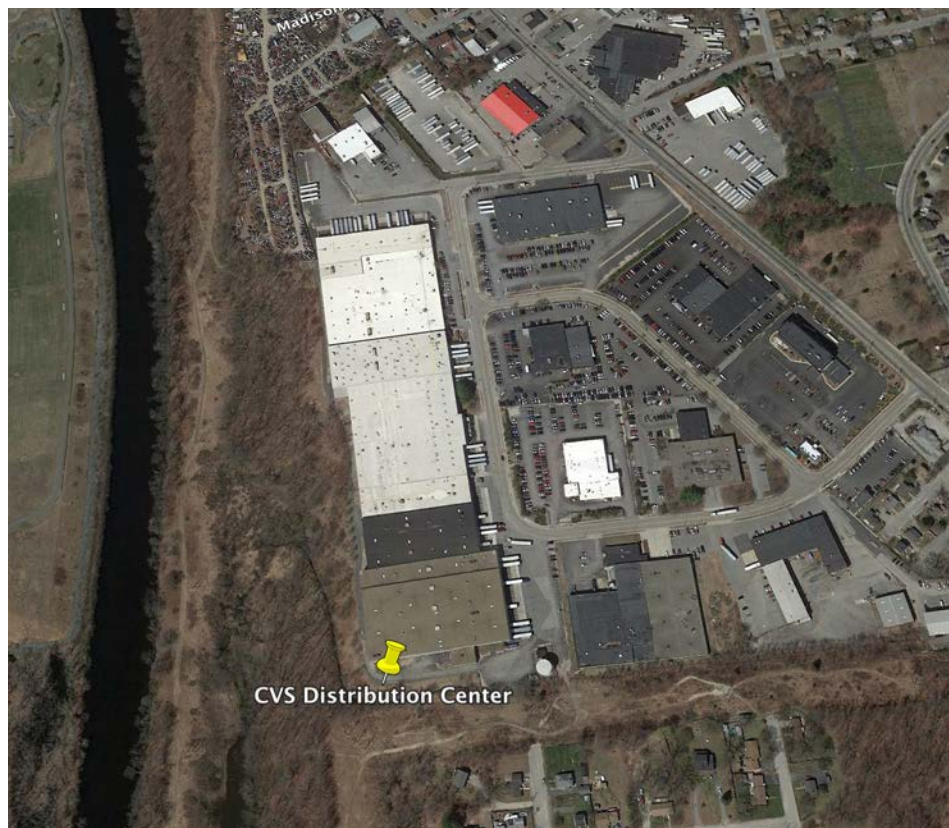
Owner/Partner: CVS Health

Type: Private

Size: Varies

The CVS Health Headquarters is located at 1 CVS Drive off RI-122 on the western edge of Woonsocket. This is a sprawling campus, with over 40 acres of impervious parking and building surface that accommodates a majority of the brands administrative and customer service employees. The campus sits at the top of the highlands surrounded by forest buffer. There are two ponds and several tributaries on the site that drain into the Blackstone River south of Woonsocket in Manville. We see many stormwater infrastructure opportunities within their network of parking lots that would make a significant environmental impact. The potential relationship formed through this proposal and at their distribution center could help to establish CVS Health as a significant benefactor to other projects within Woonsocket. This is a private site, only being used by employees and clients, however the improvements and visual impact for these people and wildlife could be significant.

CVS HEALTH DISTRIBUTION



Address: 400 Founders Dr, Woonsocket, RI 02895

Owner/Partner: CVS Health

Type: Private

Size: Varies

The CVS distribution center is located along the Blackstone River on Founders Drive off RI-122. This is a massive closed private facility for shipping and receiving, with acres of bituminous surfacing. The southern edge of the property along the River's edge is a vegetated buffer with significant slope leading to the River. A majority of the site, including the building's flat roof, is impervious and drains into The River—this likely has provided great negative impacts to water quality of and the ecosystem of the buffer. We are hoping to establish partnership with CVS Health that will help to organize a system of projects within the distribution center to mitigate the negative storm-water impacts. While this is a private site without any public contribution, the environmental impacts are great and will hopefully influence other large impervious parcel owners in the area. This site falls within a critical outfall drainage area making it prone to toxic outwash.



CASS PARK OUTFLOW



Address: 1117 River Street, Woonsocket, RI 02895

Owner/Partner: City Of Woonsocket

Type: Public

Size: 5,000 Sq Ft

Cass park is located directly next to Woonsocket High School on River Street. It is situated between a wood buffer and several athletic fields managed by the school. The park includes over a mile of defined and undefined walking paths, a Playground, Cass Pond, and tributary to the Sylvestre Pond eventually that eventually leads to the Blackstone River. The tributary and pond has recently been renovated with a vegetated buffer. Located on the western edge of Cass Pond is a concrete and stone wall pump station and culvert outlet. There is a bridge for crossing the culvert as it meets the pond, and a chain link fence surrounding it. While the culvert is necessary, we have identified opportunities to improve the station by removing the tall concrete walls and fencing, utilizing the available surrounding space to build in vegetated slopes. Potential partners for this project would be the City of Woonsocket with Woonsocket High School.

COSTA PARK SITES 1+2



Address: Cass Avenue, Woonsocket, RI 02895

Owner/Partner: City Of Woonsocket

Type: Public

Size Site 1: 7,000 Sq Ft

Size Site 2: 8,250 Sq Ft

Located in the Fairmount neighborhood of Woonsocket, Costa Park contains 8 acres along the Blackstone River. There are a few recreational amenities; playground, gazebo, athletic fields and designated walking paths. The surrounding residential buildings are built on steep slopes draining into the park and eventually The River. The two smaller proposed sites within the park sit along the southern edge just west of the gazebo. Site one sits just below the steep slope and homes to the south, the second just east of the playing fields. Both areas are currently underutilized turf depressions, prone to flooding. Our proposal is to develop a rain garden and connecting buffered swale between two projects. Potential partners include City of Woonsocket, RI DEM, Blackstone River Watershed Council and Friends of the Blackstone.

COSTA PARK SITE 3

Address: 35 1st Avenue, Woonsocket, RI 02895

Owner/Partner: City Of Woonsocket

Type: Public

Size: 2,700 Sq Ft

Site 3 at Costa Park is located along 1st Avenue between Olo and Fairmount Street just north of Costa Park. This site will intervene along the sidewalk in the narrow space between the street's edge borrowing land from the adjacent abandoned mill manufacturing parcel. The Blackstone River lies just west of the mill parcel. The residential neighborhood along the park and defunct mill is built on steep slopes, this linear intervention has an opportunity to visually improve 1st street along the park and capture a large amount of water before entering The River.

MAIN STREET PARKING LOTS 1+2+3



Main Street Parking Lot 1
 Address: 190 Main Street, Woonsocket, RI 02895
 Owner/Partner: State of Rhode Island / RIDOT
 Type: Semi Public
 Size: 10,000 Sq Ft



Main Street Parking Lot 2
 Address: 84 Main Street, Woonsocket RI 02895
 Owner/Partner: State of Rhode Island / RIDOT
 Type: Semi Public
 Size: 11,000 Sq Ft



Main Street Parking Lot 3
 Address: 12 Main Street, Woonsocket, RI 02895
 Owner/Partner: State of Rhode Island / RIDOT
 Type: Semi Public
 Size: 1,800Sq Ft

The three free public parking lots are located on the northbound side of Main Street between Arnold and High Street in the main business district of Woonsocket. They each provide very limited planted area, each are a combination of impervious concrete and bituminous material. All three fall within what RI DEM identified as critical outfall drainage areas. While Main Street is not owned and maintained by RI-DOT, they have agreed that these parking lots would be good opportunities for partnership to design green storm water infrastructure interventions because of public visibility and outreach potential.

PARTNERSHIPS + SITES

Over the next 3 months we will be researching the viability of these 12 sites. This will include meeting with the Planning Department of Woonsocket to determine who has oversight for the public lots, and what current storm water initiatives they may have planned in the future. We are also trying to get in touch with someone at CVS so we can explore potential partnerships. Our goal is to have the sites categorized and evaluated (using our criteria scales) by January 15th. We will also be prepared how to proceed for each site, and who the partner will need to be for the site to be selected (city, state agency, private agency, or private owner). By the time we deliver the final Design Guidelines, we will include recommendations for how long the fund should be held to be used for each site. We will also include recommendations, in partnered projects, for how the fund should be used. For instance, it could be used for maintenance or design fee if materials and construction are covered by a partner such as RIDOT.

Massachusetts

Harris Pond

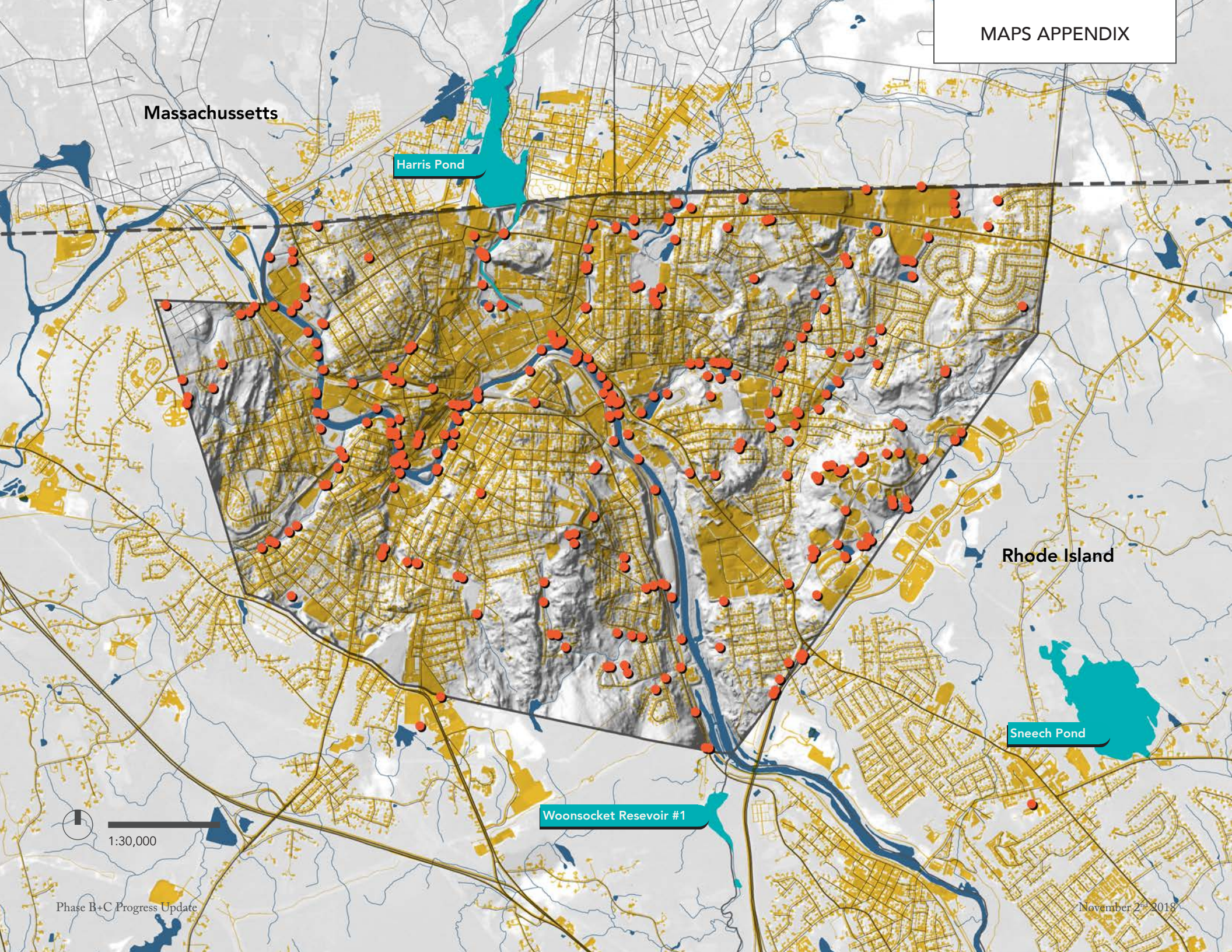
Rhode Island

Sneech Pond

Woonsocket Reservoir #1



1:30,000



PROJECT ZONES

Massachusetts

Rhode Island

Downtown Main Street

Cass Park Area

Costa Park Area

Bernon Area

CVS Distribution Center

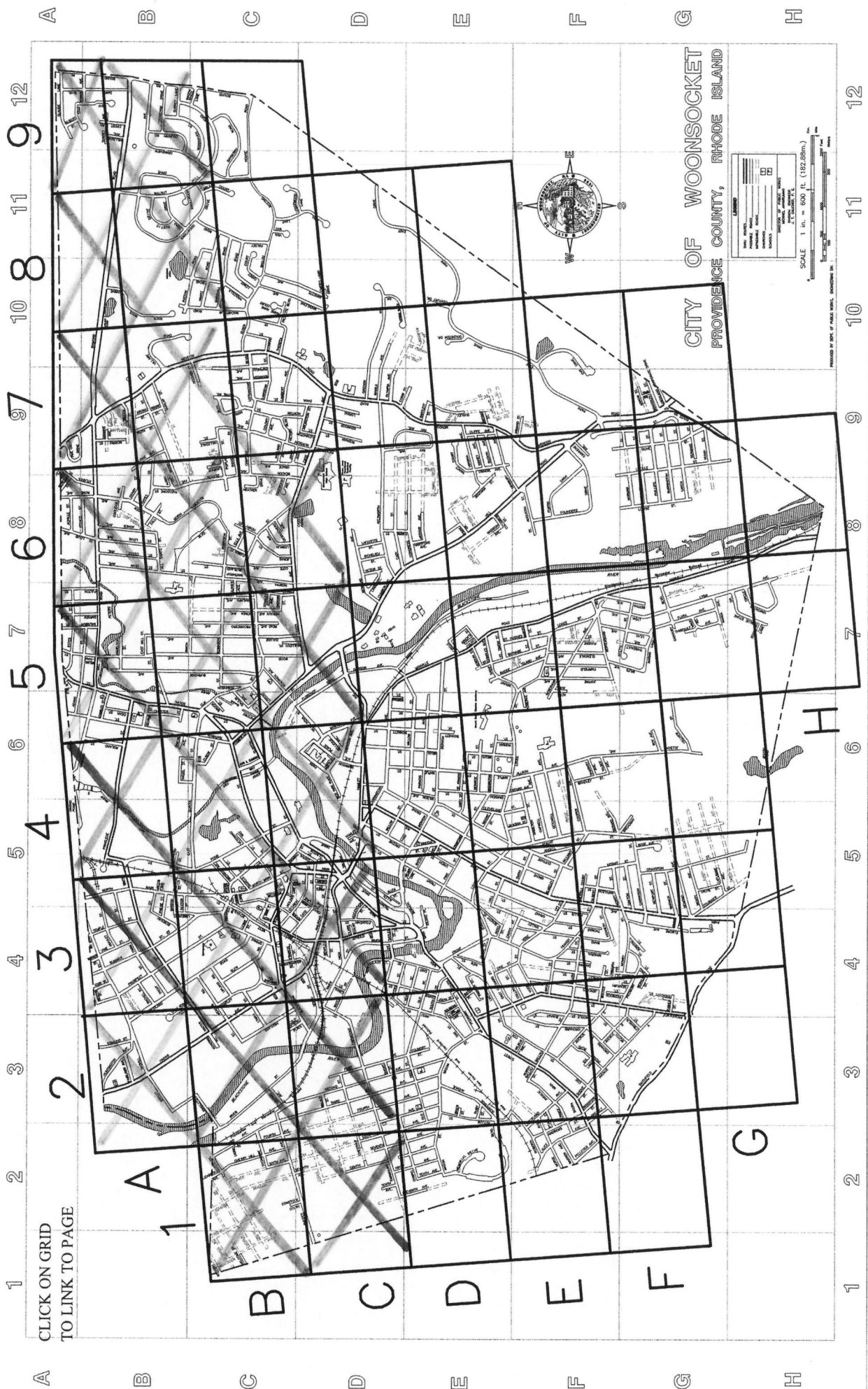
River's Edge Recreation Area



1:30,000

Attachment 12

Catch Basin Cleaning Map



A CLICK ON GRID
TO LINK TO PAGE

X = CATCH BASINS CLEANED 2018

Attachment 13

2018 Stormwater System Evaluation Report-Veolia

City of Woonsocket, RI 2018 Storm Water System Evaluation Report



October 11, 2018

Jonathan R. Pratt P.E.
City Engineer
City of Woonsocket, RI
169 Main Street
Woonsocket, RI 02895

Re: City of Woonsocket, RI 2018 Storm Water System Evaluation Report

Dear Mr. Pratt,

Veolia North America is pleased to submit the results of the storm water system pipe cleaning, CCTV, and catch basin inspection project conducted in the City of Woonsocket, RI during the months of July, August and September 2018.

Methodology

The sections of storm water mains and catch basins that were focused on were first cleaned using a high velocity combination jet/vac unit. This was to ensure the pipes were cleaned thoroughly and all debris was vacuumed out of the sewer mains to prevent potential blockages downstream. The pipes were then CCTV'd using a closed circuit television recording system (CCTV) to identify any structural defects. The Veolia crews utilized electronic handheld devices, and thus paperless, field data acquisition software program, which would then be uploaded to the InfoNet asset management database program each day. Quality control measures were then executed on the collected data to ensure accuracy and the following report was generated directly from InfoNet, which includes defect photos and summaries.

Focus Areas

This study was conducted on the following streets that were part of the 2018 City paving list. These streets are Winter Street, Bailey Street, Roland Street, and Elmore Avenue.



Observations

The Veolia field crew completed 5,582 linear feet of pipe cleaning and CCTV and also cleaned and inspected 33 storm drain catch basins and manholes.

Defect Count

Catch Basin Defects	
Defect	Count
Broken cover	1
Curbing defect	7
Missing or detached bricks	19
Frame defect	3
No access	1
Foreign substance	1
Total	32

The crew removed a total of 525 inches (44ft) of sand from the thirty-three (33) basins and drain manholes that were cleaned and inspected.

CCTV Defect List	
Defect	Count
Pipe Broken	3
Pipe Broken Soil Visible	2
Pipe Broken Void Visible	1
Crack Circumferential	16
Crack Longitudinal	40
Crack Longitudinal Hinge	1
Crack Spiral	2
Fracture Circumferential	4
Fracture Longitudinal	2
Fracture Hinge	2
Hole in Pipe	1
Hole in pipe soil visible	1
Infiltration Weeper	1
Joint off set Medium	2
Joint separated medium	1
Multiple Cracks	44
Multiple Fractures	8
Total	131



CCTV Defect List					
	Street	US MH	DS MH	Defect	Footage
1	Winter Street	DMH_273	DMH_279	Crack Longitudinal Hinge	61
2	Winter Street	DMH_273	DMH_279	Crack Longitudinal	84
3	Winter Street	DMH_273	DMH_279	Crack Longitudinal	122
4	Winter Street	DMH_273	DMH_279	Multiple Cracks	138
5	Winter Street	DMH_273	DMH_279	Multiple Fractures	118 - 132
6	Winter Street	DMH_273	DMH_279	Crack Longitudinal	146
7	Winter Street	DMH_273	DMH_279	Multiple Fractures	153 - 157
8	Winter Street	CB_718	DMH_279	Broken Soil Visible	10
9	Winter Street	CB_718	DMH_279	Fracture Circumferential	24.8
10	Winter Street	DMH_274	DMH_273	Multiple Fractures	19.5
11	Winter Street	DMH_274	DMH_273	Crack Circumferential	50.9
12	Winter Street	DMH_274	DMH_273	Crack Longitudinal	65.6 - 73.8
13	Winter Street	DMH_274	DMH_273	Multiple Cracks	100.4
14	Winter Street	DMH_274	DMH_273	Hinge Fracture	112.4 - 158.1
15	Winter Street	DMH_274	DMH_273	Multiple Cracks	160.4
16	Winter Street	DMH_274	DMH_273	Crack Circumferential	210
17	Winter Street	DMH_274	DMH_273	Fracture Circumferential	217.9
18	Winter Street	DMH_275	DMH_274	Crack Circumferential	56.5
19	Winter Street	DMH_275	DMH_274	Hinge Fracture	125.1 - 139.3
20	Winter Street	DMH_275	DMH_274	Broken Void Visible	127.8
21	Winter Street	DMH_275	DMH_276	Fracture Circumferential	11.3
22	Winter Street	DMH_275	DMH_276	Multiple Cracks	32.3
23	Winter Street	DMH_275	DMH_276	Multiple Cracks	37.7
24	Winter Street	DMH_275	DMH_276	Multiple Cracks	46.1
25	Winter Street	DMH_275	DMH_276	Multiple Cracks	46.6
26	Winter Street	DMH_275	DMH_276	Multiple Cracks	54.9
27	Winter Street	DMH_275	DMH_276	Multiple Cracks	58.8
28	Winter Street	DMH_275	DMH_276	Multiple Cracks	71
29	Winter Street	CB_135	CB_137	Multiple Cracks	3
30	Winter Street	CB_134	CB_136	Hole in pipe	103.2
31	Winter Street	CB_134	CB_136	Multiple Fractures	109
32	Winter Street	DMH_27	CB_90	Multiple Cracks	3
33	Winter Street	CB_85	DMH_28	Crack Circumferential	21
34	Winter Street	DMH_28	CB_87	Crack Longitudinal	16.2



35	Winter Street	DMH_28	CB_87	Crack Circumferential	17.2
36	Winter Street	DMH_28	CB_87	Crack Circumferential	19.5
37	Winter Street	DMH_28	CB_87	Crack Longitudinal	36.6
38	Winter Street	DMH_28	CB_87	Multiple Cracks	39.6
39	Winter Street	DMH_28	CB_87	Crack Circumferential	51.8
40	Winter Street	DMH_28	CB_87	Multiple Cracks	55.6
41	Winter Street	DMH_28	CB_87	Broken Soil Visible	58.9
42	Winter Street	DMH_28	CB_87	Multiple Fractures	58.9
43	Winter Street	CB_86	CB_87	Broken	8.6
44	Summer Street	DMH_28	CB_89	Multiple Cracks	42.9
45	Winter Street	DMH_27	CB_96	Crack Longitudinal	6.6
46	Winter Street	DMH_27	CB_96	Crack Circumferential	28.2
47	Winter Street	DMH_27	CB_96	Multiple Cracks	83.7
48	Winter Street	DMH_27	CB_96	Crack Longitudinal	103.4
49	Winter Street	DMH_27	CB_96	Crack Spiral	107.4
50	Winter Street	DMH_27	CB_96	Crack Longitudinal	109.1
51	Winter Street	DMH_27	CB_96	Multiple Cracks	131.6
52	Winter Street	DMH_27	CB_96	Crack Longitudinal	153.1
53	Winter Street	DMH_27	CB_96	Multiple Cracks	157.1
54	Winter Street	DMH_27	CB_96	Multiple Fractures	173
55	Winter Street	DMH_27	CB_96	Hole Soil Visible	175.9
56	Winter Street	DMH_27	CB_96	Multiple Cracks	185.1
57	Winter Street	DMH_27	CB_96	Multiple Fractures	286.3 - 303.6
58	Winter Street	DMH_27	CB_96	Crack Longitudinal	326
59	Winter Street	DMH_27	CB_96	Multiple Cracks	328
60	Winter Street	DMH_27	CB_96	Fracture Longitudinal	332.2
61	Winter Street	DMH_28	DMH_29	Multiple Cracks	8.3
62	Winter Street	DMH_28	DMH_29	Crack Longitudinal	11.1
63	Winter Street	DMH_28	DMH_29	Crack Circumferential	29.9
64	Winter Street	DMH_28	DMH_29	Crack Longitudinal	39.8
65	Winter Street	DMH_28	DMH_29	Multiple Cracks	102.2
66	Winter Street	DMH_28	DMH_29	Multiple Cracks	110.9
67	Winter Street	DMH_28	DMH_29	Joint off set medium	130.4
68	Winter Street	DMH_28	DMH_29	Crack Longitudinal	221
69	Winter Street	DMH_28	DMH_29	Multiple Cracks	244.4
70	Winter Street	DMH_28	DMH_29	Multiple Cracks	258.7
71	Winter Street	DMH_28	DMH_29	Crack Longitudinal	299.7
72	Winter Street	DMH_28	DMH_29	Multiple Cracks	302.7
73	Winter Street	DMH_29	CB_91	Joint off set medium	15.4



74	Winter Street	DMH_29	CB_91	Multiple Cracks	18.3
75	Winter Street	CB_96	DMH_31	Crack Longitudinal	13.1
76	Winter Street	CB_96	DMH_31	Crack Longitudinal	55
77	Temple Street	DMH_31	DMH_32	Crack Longitudinal	20.2
78	Temple Street	DMH_31	DMH_32	Multiple Cracks	29.5
79	Temple Street	DMH_31	DMH_32	Multiple Cracks	39.3
80	Temple Street	DMH_31	DMH_32	Crack Longitudinal	48
81	Temple Street	DMH_31	DMH_32	Multiple Cracks	70.4
82	Temple Street	DMH_31	DMH_32	Crack Longitudinal	82.6
83	Winter Street	CB_91	DMH_30	Crack Longitudinal	3.2
84	Winter Street	CB_91	DMH_30	Crack Longitudinal	4.8
85	Winter Street	CB_91	DMH_30	Crack Longitudinal	7.5
86	Winter Street	CB_91	DMH_30	Multiple Cracks	9.4
87	Privilege Street	DMH_60	DMH_59	Crack Circumferential	28.7
88	Privilege Street	DMH_60	DMH_59	Crack Longitudinal	38.7
89	Privilege Street	DMH_60	DMH_59	Crack Circumferential	45.7
90	Ormond Street	CB_4138	CB_4139	Multiple Cracks	6.3
91	Ormond Street	DMH_1278	CB_4139	Multiple Fractures	17.7
92	Ormond Street	DMH_1278	CB_4139	Crack Longitudinal	34
93	Elmore Avenue	CB_4137	DMH_1233	Crack Circumferential	16.1
94	Elmore Avenue	DMH_1233	DMH_1232	Crack Longitudinal	279.8
95	Elmore Avenue	DMH_1233	DMH_1232	Crack Circumferential	327
96	Elmore Avenue	DMH_1233	DMH_1232	Crack Circumferential	385.6
97	Elmore Avenue	CB_3888	DMH_4923	Joint separated medium	7
98	Elmore Avenue	DMH_1232	DMH_1306	Crack Longitudinal	17.5
99	Elmore Avenue	DMH_1232	DMH_1306	Crack Circumferential	65.9
100	Elmore Avenue	DMH_1232	DMH_1306	Crack Circumferential	88.3
101	Elmore Avenue	DMH_1232	DMH_1306	Multiple Cracks	89.9
102	Elmore Avenue	DMH_1232	DMH_1306	Broken	108.6
103	Elmore Avenue	DMH_1232	DMH_1306	Multiple Cracks	115.9
104	Elmore Avenue	DMH_1306	DMH_4923	Fracture Circumferential	68.2
105	Bailey Street	DMH_1299	DMH_5067	Multiple Cracks	26.5
106	Bailey Street	DMH_1299	DMH_5067	Fracture Longitudinal	31.9



107	Bailey Street	DMH_1299	DMH_5067	Crack Longitudinal	40.1 - 59.8
108	Bailey Street	DMH_1299	DMH_5067	Multiple Cracks	46.9
109	Bailey Street	DMH_1299	DMH_5067	Crack Longitudinal	54
110	Bailey Street	DMH_1299	DMH_5067	Multiple Cracks	57.7
111	Bailey Street	DMH_1299	DMH_5067	Crack Longitudinal	65.4
112	Bailey Street	DMH_1299	DMH_5067	Crack Longitudinal	83.9
113	Bailey Street	DMH_1299	DMH_5067	Multiple Cracks	86.1
114	Bailey Street	DMH_1299	DMH_5067	Multiple Cracks	88.3 - 114.4
115	Bailey Street	DMH_1299	DMH_5067	Multiple Cracks	96.8
116	Bailey Street	DMH_1299	DMH_5067	Crack Longitudinal	104.2
117	Bailey Street	DMH_1299	DMH_5067	Crack Longitudinal	187.4
118	Bailey Street	DMH_1299	DMH_5067	Crack Longitudinal	203.2
119	Bailey Street	DMH_1299	DMH_5067	Crack Longitudinal	233.2
120	Bailey Street	DMH_1299	DMH_5067	Crack Longitudinal	247.9
121	Bailey Street	DMH_1299	DMH_5067	Crack Longitudinal	250.5
122	Bailey Street	DMH_1299	DMH_5067	Infiltration Weeper	253.9
123	Bailey Street	DMH_1299	DMH_5067	Crack Spiral	254
124	Bailey Street	DMH_1299	DMH_5067	Multiple Cracks	280.7
125	Bailey Street	DMH_1299	DMH_5067	Multiple Cracks	295.6 - 302.4
126	Bailey Street	DMH_1299	DMH_5067	Crack Longitudinal	303.8
127	Bailey Street	DMH_1299	DMH_5067	Multiple Cracks	305.2
128	Bailey Street	DMH_1299	DMH_5067	Crack Longitudinal	313.8
129	Bailey Street	DMH_1299	DMH_5067	Multiple Cracks	326.1
130	Bailey Street	DMH_1299	DMH_5067	Crack Longitudinal	342.2
131	Winter Street	CB_137	CB_135	Broken	59.4

Should you have any questions or require additional information, please do not hesitate to contact me at (401) 265-0525. Veolia North America looks forward to continuing our valued partnership with the City of Woonsocket.

Sincerely,

Paul Rodman
Special Projects Manager
Veolia North America



Attachment 14

RIDEM Correspondence Regarding Construction Complaint



RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
235 Promenade Street
Providence, Rhode Island 02908

CERTIFIED MAIL & E-Mail

February 7, 2018

Edward Beauchemin
12 Tanglewood Rd
North Smithfield, RI 02896

Letter of Non-Conformance

Re: Application No. 05-0392 in reference to the location below:

Approximately 50 feet north of Chestnut Street, at Utility Pole No. 13, and approximately 100 feet northeast of its intersection with Sixth Avenue, Assessor's Map 2, Parcel 227, Woonsocket, RI

Dear Mr. Beauchemin:

In response to a recent anonymous complaint regarding possible new unauthorized work, the Department of Environmental Management's ("DEM") Freshwater Wetlands Program ("Program") conducted an inspection of the above referenced site on February 7, 2017. This inspection revealed that, while it had recently been determined that the project was completed in conformance with the terms and conditions of the permit issued by this Program on April 14, 2006 for Application No. 05-0392 (copy of letter enclosed), recent additional work was performed on the site that was not specifically authorized by DEM. Specifically, you are in non-conformance with the terms and conditions of the permit in the following instances:

1. In non-conformance with Permit Condition 2, work was performed that was not specifically depicted on the approved site plans. Specifically, surface water flowing from the west onto the property has been redirected by construction of a ditch and a new berm around the yard associated with the new dwelling that was recently constructed. Additionally, a new roof drain pipe has been installed directing roof runoff to the new ditch. Neither the new ditch/berm diversion nor the rood leader outfall are depicted on the approved site plans.

This unauthorized work represents a violation of the RI Freshwater Wetlands Act (RIGL Section 2-1-18 et. al.) and is inconsistent with the permit issued to you under Application 05-0392. It is noted that a portion of the work referenced above was completed on property owned by the City of Woonsocket, west of your property.

As you know, we discussed all of the above items on site after you arrived while I was completing my inspection. At the time, I advised you to restore all disturbed areas on the City of Woonsocket's property, west of your property, to original grade, and stabilize any disturbed soils. In retrospect, this could cause other unanticipated problems by either leaving the flow with no suitable route to flow westerly as it previously did, or even allowing flow to be routed south and then east towards the new house again. It is now advised to leave the diversion in place until such time that the unauthorized work is resolved in accordance with the requirements outlined below in this letter.

At this time, the Program feels that immediate threats to the environment are minor in nature, and can be informally resolved without the need to refer this matter to the DEM's Office of Compliance & Inspection for formal enforcement action. In order to resolve this matter

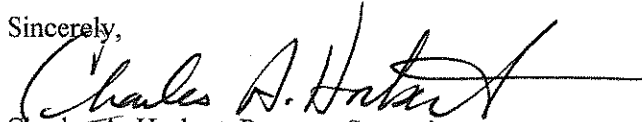
1. **Immediately** stop any work that is not specifically authorized by your permit;
2. Until a final design solution is implemented, you are responsible for monitoring all stormwater flow and stabilizing any disturbed, unstable soils to prevent any discharge of soil or sediment into the stream and wetlands east of the end of the new ditch. It is recommended straw bale or mulch-filled fiber log check dams be installed across the ditch to act as sediment traps.
3. Submit a complete Request for Preliminary Determination to obtain approval for diverting flow around the house on the property. You are advised to pursue one of two options, as noted below. For either option, you are required to submit the complete application **no later than March 30, 2018**. Your application must include a signed application form, a signed Site Work Affidavit, three (3) copies of site plan sheets depicting your proposed solution (one of the options outlined below), a narrative description of the revisions and why they were needed, and a fee of \$150.00. Checks are to be made payable to the RI General Treasurer. The two options we will accept in order to resolve your flow problems are as follows:
 - a. Keep the ditch and berm in place as currently exists, while providing better stabilization to prevent erosion under significant flows, such as by lining the ditch with rip-rap (rock). For this option, since it involved alterations that occurred on property owned by the City of Woonsocket **your application must also include a notarized letter of authorization from an appropriate City official that authorizes you to act as the applicant for the alterations**. Your site plans will need to accurately depict the as-built ditch with whatever additional work is required to stabilize it, together with other existing fixed reference points and a limit of disturbance.
 - b. If you cannot obtain authorization from the City, you will need to provide a new design to divert the water flow as desired that completely restores all disturbed areas on that property to original condition (i.e. completely fills in the ditch that was dug up to surrounding grades, to the point that the ditch enters your property) and depicts a proposed alternative solution that involves work **entirely on your property**. It is likely that either a new diversion ditch, or a drop-inlet with an outlet pipe directing flow further down onto your property, will have to be established further within your property borders. Site plans meeting all standards of Rule 7.03 will need to clearly depict all alterations, including grade changes, pipe locations/sizes, and limits of disturbance as necessary to implement a suitable diversion away from the house.

Within ten (10) days of receipt of this letter, you must notify this office in writing of your intent to comply with the requirements of this letter. Failure to notify this office of your intent to comply or failure to satisfy the requirements of this letter within a timely and appropriate manner will result in the referral to the DEM's Office of Compliance and Inspection for additional enforcement action including assessment of penalties as appropriate.

Upon receipt of a complete Request for Preliminary Determination, this Program will commence its review towards of your proposal. It is hoped that prompt action to resolve this matter will both allow you to protect your property appropriately and with proper authorizations.

Please feel free to contact me should you have any questions regarding this letter (telephone: (401) 222-6820, ext. 7402).

Sincerely,



Charles A. Horbert, Program Supervisor
Freshwater Wetlands Program
Office of Water Resources
CAH/KHM/khm

w/enclosures: Permit Letter dated April 14, 2006

cc: Stephen Tyrell, Office of Compliance and Inspection
Eric Beck, Chief, Groundwater and Wetlands Protection
Michael Debrousse, Woonsocket Engineering Superintendent



RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
235 Promenade Street
Providence, Rhode Island 02908

June 11, 2018

Alex & Erin Bickford
c/o Edward Beauchemin
12 Tanglewood Road
North Smithfield, RI 02896

Re: Application No. 18-0123 in reference to the location below:

Approximately 100 feet north of Chestnut Street, at Utility Pole No. 13, and approximately 100 feet northeast of its intersection with Sixth Avenue, Assessor's Map D2, Parcel 2-227, Woonsocket, RI

Dear Mr. & Mrs. Bickford, & Mr. Beauchemin:

Kindly be advised that the Department of Environmental Management's ("DEM") Freshwater Wetlands Program ("Program") has completed its review of your **Request for Preliminary Determination** application. This review included a site inspection of the above referenced property ("subject property") and an evaluation of the proposed stormwater swale and PVC roof drain extension as illustrated and detailed on site plans submitted with your application. These site plans were received by the DEM on May 25, 2018.

Our observations of the subject property, review of the site plans and evaluation of the proposed project reveals that alterations of freshwater wetlands are proposed or have already occurred. However, pursuant to Rule 9.00 of the Rules and Regulations Governing the Administration and Enforcement of the Fresh Water Wetlands Act (Rules), this project may be permitted as an **insignificant alteration** to freshwater wetlands under the following terms and conditions:

Terms and Conditions for Application No 18-0095:

1. This letter is the DEM's permit for this project under the R.I. Fresh Water Wetlands Act, Rhode Island General Laws (RIGL) Section 2-1-18 et seq.
2. This permit is specifically limited to the project, site alterations and limits of disturbance as detailed on the site plans submitted with your application and received by the DEM on May 25, 2018. A copy of the site plans stamped approved by the DEM is enclosed. Changes or revisions to the project that would alter freshwater wetlands are not authorized without a permit from the DEM.
3. Where the terms and conditions of the permit conflict with the approved site plans, these terms and conditions shall be deemed to supersede the site plans.
4. You must notify this Program in writing immediately prior to the commencement of site alterations and again upon completion of the project.

5. A copy of the stamped approved site plans and a copy of this permit must be kept at the site at all times during site preparation, construction, and final stabilization. Copies of this permit and the stamped approved plans must be made available for review by any DEM or City representative upon request.
6. Within ten (10) days of the receipt of this permit, you must record this permit in the land evidence records of the City of Woonsocket and supply this Program with written documentation obtained from the City showing this permit was recorded.
7. The effective date of this permit is the date this letter was issued. This permit expires four years from the effective date unless renewed pursuant to the Rules. **Note however that since this was an after-the-fact approval to address unauthorized alterations,** be advised that rip-rap stabilization of the swale must be completed **no later than July 15, 2018.**
8. Any material utilized in this project must be clean and free of matter that could pollute any freshwater wetland.
9. Prior to commencement of site alterations, you shall erect or post a sign resistant to the weather and at least twelve (12) inches wide and eighteen (18) inches long, which boldly identifies the initials "DEM" and the application number of this permit. This sign must be maintained at the site in a conspicuous location until such time that the project is complete.
10. Temporary erosion and sediment controls detailed or described on the approved site plans shall be properly installed at the site prior to or commensurate with site alterations. Such controls shall be properly maintained, replaced, supplemented, or modified as necessary throughout the life of this project to minimize soil erosion and to prevent sediment from being deposited in any wetlands not subject to disturbance under this permit.
11. Upon permanent stabilization of all disturbed soils, temporary erosion and/or sediment controls must be removed.
12. You are obligated to install, utilize and follow all best management practices detailed or described on the approved site plans in the construction of the project to minimize or prevent adverse impacts to any adjacent freshwater wetlands and the functions and values provided by such wetlands.

Pursuant to the provisions in Rule 7.09 and Rule 11.04, as applicable, any properly recorded and valid permit is automatically transferred to the new owner upon sale of the property.

You are required to comply with the terms and conditions of this permit and to carry out this project in compliance with the Rules at all times. Failure to do so may result in an enforcement action by this Department.

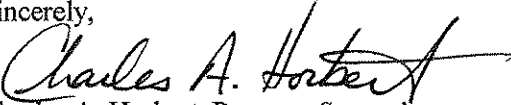
In permitting the proposed alterations, the DEM assumes no responsibility for damages resulting from faulty design or construction.

Kindly be advised that this permit is not equivalent to a verification of the type or extent of freshwater wetlands on site. Should you wish to have the types and extent of freshwater wetlands verified, you may submit the appropriate application in accordance with the Rules.

This permit does not remove your obligation to obtain any local, state, or federal approvals or permits required by ordinance or law and does not relieve you from any duties owed to adjacent landowners with specific reference to any changes in drainage.

Please contact me (telephone: 401-222-6820 x 7402) should you have any questions regarding this letter.

Sincerely,



















Charles A. Horbert, Program Supervisor
Office of Water Resources
Freshwater Wetlands Program
CAH/cah

Enclosure: Approved site plans

cc: Edward Beauchemin
Michael Debroisse, Woonsocket Public Works, Engineering Division
Marc N. Nyberg, PLS, Marc N. Nyberg Associates, Inc.

Attachment 15

2018 Construction Projects

 <input checked="" type="checkbox"/> SUBMITTED BY	PLAN TITLE	LOCATION	SUBMITTED D...	ACCE...	DESTINATIO...
 <input checked="" type="checkbox"/> Marc Nyberg Associates	Site Plan for Louis Calcagni	Map B5 Lot 38-365 All Sain...	Fri 12/14/2018	Tue 2/1...	Approved
 <input checked="" type="checkbox"/> National Land Surveyors	Proposed Site Plan for Preci...	Map F4 Lot 30-12	Wed 12/12/2018	Fri 2/15/...	Approved
 <input checked="" type="checkbox"/> Marc Nyberg Associates	Site Plan for Christopher Ja...	Map A6 Lot 38-569 Prince ...	Wed 12/12/2018	Fri 1/25/...	Approved
 <input type="checkbox"/> Marc Nyberg Associates	Site Plan	Map B6 Lot 47-76 Morin St...	Mon 12/3/2018	None	Pending
 <input checked="" type="checkbox"/> Cataldo Associates	Site Plan - Peter Menard	Olympia Ave. Map D6 Lot...	Wed 10/24/2018	Mon 12/...	Approved
 <input checked="" type="checkbox"/> Leddy Land Surveying Co.	Proposed Building Plan	Map D6, Lot 44-135 Olym...	Tue 10/23/2018	Tue 2/1...	Approved
 <input checked="" type="checkbox"/> Level Design Group	Manila Avenue Extension	Map D7, Lots 55-60&61	Thu 10/18/2018	Mon 1/2...	Approved
 <input checked="" type="checkbox"/> Marc Nyberg Associates	Site Plan for Jeff Piete	Map D3 Lot 9-173	Fri 9/28/2018	Tue 10/...	TB
 <input checked="" type="checkbox"/> Marc Nyberg Associates	Site Plan	Sublot 8 Sapphire Estates	Mon 9/24/2018	Wed 9/2...	Approved
 <input checked="" type="checkbox"/> Darveauland Surveying	Proposed Easement Plan fo...	Map E4 Lot 23-62 800 Log...	Mon 9/24/2018	Tue 2/1...	Approved
 <input checked="" type="checkbox"/> Marc Nyberg Associates	Site Plan	Sublot 7 Sapphire Estates	Mon 9/24/2018	Wed 9/2...	Approved
 <input checked="" type="checkbox"/> National Surveyors	Proposed Site Plan	Map A5 Lot 35-169 Dewey...	Thu 9/20/2018	Tue 10/...	Approved
 <input type="checkbox"/> Paul Groome	proposed house	Lot 48-318 Beacon Ave	Wed 9/12/2018	None	Pending
 <input checked="" type="checkbox"/> DEtec	Site Plan	Map B6 Lot 38-13 S.L. 7	Thu 9/6/2018	Wed 2/2...	Approved
 <input checked="" type="checkbox"/> DEtec	Site Plan	Map B6 Lot 38-13 S.L. 8	Thu 9/6/2018	Wed 2/2...	Approved
 <input checked="" type="checkbox"/> Level Design Group	Preliminary Plans--Oak Gro...	Map G6 Lot 45-1 Oak Grove	Thu 9/6/2018	Tue 2/1...	Approved
 <input checked="" type="checkbox"/> Nabil Rashid	Survey and Plan	1188 Cumberland Hill Rd	Mon 7/30/2018	Tue 9/1...	Approved
 <input checked="" type="checkbox"/> Level Design Group	Plot Plan	Map G6 Lot 45-105, Sub lo...	Mon 5/21/2018	Thu 7/1...	Approved
 <input checked="" type="checkbox"/> Level Design Group	Plot Plan	Map G6 Lot 45-108, Sub L...	Mon 5/21/2018	Thu 7/1...	Approved
 <input checked="" type="checkbox"/> Level Design Group	Plot Plan	Map G6 Lot 45-107, Sub lo...	Fri 5/4/2018	Wed 6/1...	Approved
 <input checked="" type="checkbox"/> Level Design Group	Plot Plan	Map G6 Lot 45-106, Sub L...	Fri 5/4/2018	Fri 6/1/2...	Approved
 <input checked="" type="checkbox"/> Nyberg-Assoicates	Site Plan for Hammerheads...	Map F2 Lot 4-199 Morse A...	Tue 4/17/2018	Wed 7/1...	Pending
 <input checked="" type="checkbox"/> Level Design Group	Plot Plan, Map G6, lot 45-1...	Danielle Drive	Wed 4/4/2018	Thu 4/2...	Approved
 <input checked="" type="checkbox"/> Level Design	Single Family Dwelling	133 Springwater Drive	Mon 4/2/2018	Thu 4/1...	Approved
 <input checked="" type="checkbox"/> National Land Surveyors	Proposed Garage	Map C6 Lot 48-192-197-Ca...	Thu 2/22/2018	Wed 7/1...	jp

Attachment 16

BMP List

<u>LOCATION</u>	<u>OWNER</u>	<u>MAP</u>	<u>LOT</u>	
PARK EAST DR / CVS DRIVE	CITY OF WOONSOCKET	F7	56-15	Detention Pond
WALMART (woonsocket) (2 one in front one in back) 1919 Diamond Hill Rd	WALMART STORES PO BOX 967 MANDAN ND 58554	B7	52-6	Grassed Detention Basins
LOWES (Woonsocket) 2010 Diamond Hill Rd	FDP LLC. PO BOX 5651 BISMARCK ND 58506	B7	52-20	Grassed Detention Basin
BROOKHAVEN POND (2)	STERLING SERVICES 589 CONCORD ST HOLLISTON, MA 01746	C8	58-31	Grassed Detention Basin
TARA LANE/ LEDGEWOOD DR.	CITY OF WOONSOCKET	C7	58-37	Grassed Detention Basin
EAST WOONSOCKET	CITY OF WOONSOCKET	B7	57-88	Detention Pond
HOLLEY SPRINGS (POND) (Naturally occurring)	H S Realty Corporation 53 STATE ST. 38TH FL BOSTON MA 02109	D7	55-1	Detention Pond
HOLLEY SPRINGS (BASIN)	PAM DISALVO 304 HOLLEY LANE WOONSOCKET, RI 02895	D7	55-203	Grassed Detention Basin tele: 769-2900
OREGON AVE	CITY OF WOONSOCKET	D7	59-2	Grassed Detention Basin
DIAMOND HILL RD (Darling Pond)	CITY OF WOONSOCKET	B7	53-5	Detention Pond
ROBINSON STREET POTHIER SCHOOL	CITY OF WOONSOCKET	C5	36-136	Grassed Detention Basin
PARK DRIVE & HARTFORD AVE	OAKLAND GROVE ASSOCATES 560 CUMBERLAND HILL RD WOONSOCKET, RI 02895	E6	41-29	Grassed Detention Basin
1026 PARK EAST DRIVE	CVS Pharmacy Inc One CVS Dr. WOONSOCKET, RI 02895	D7	59-13	Grassed Detention Basin
300 PARK EAST DRIVE	TECHNIC, INC 300 PARK EAST DRIVE WOONSOCKET, RI 02895	E6	50-51	Grassed Detention Basin
500 PARK EAST DRIVE	CARPENTER POWDER PRODUCTS 500 PARK EAST DRIVE WOONSOCKET RI 02895-6148	E7	50-211	Grassed Detention Basin
1 CVS DRIVE	CVS 1 CVS DRIVE WOONSOCKET, RI 02895	F7	51-2	Grassed Detention Basin
811 PARK EAST DRIVE	811 PARK EAST DRIVE LLC 811 PARK EAST DRIVE	E7	56-6	Grassed Detention Basin

	WOONSOCKET, RI 02895			
475 PARK EAST DRIVE	CVS 1 CVS DRIVE WOONSOCKET, RI 02895	E7	56-23	Grassed Detention Basin
117 CENTURY	JM & KM REALTY LLC 1775 SNAKE HILL ROAD CHEPACHET, RI 02814	E7	59-21	Grassed Detention Basin
GAUTHIER DRIVE (2)	CITY OF WOONSOCKET	G5	33-54	Grassed Detention Basin
222 GOLDSTEIN DRIVE	IMPREGLOON INC 220 FAIRBURN INDUSTRIAL PARKWAY FAIRBURN, GA 30213 (also services 100 Goldstein Dr stormwater)	E7	50-233	Grassed Detention Basin
88 CENTURY DRIVE	CITY OF WOONSOCKET (by easement) ACW REALTY LLC (property owner) 88 CENTURY DRIVE WOONSOCKET, RI 02895	E7	55-20	Grassed Detention Basin
88 CENTURY DRIVE	ACW INC. 88 CENTURY DRIVE WOOSOCKET RI 02895	E7	56-20	Grassed Detention Basin
841 PARK EAST DRIVE	T.E.A.M. 841 PARK EAST DRIVE WOONSOCKET, RI 02895	E7	56-101	Grassed Detention Basin
77 FULTON STREET	SOUTHWOOD REALTY LLC 325 AYER ROAD HARVARD, MA 01451	A5	35-36	Grassed Detention Basin
100 GOLDSTEIN DRIVE (3)	KEY/PARKINSON REALTY 100 GOLDSTEIN DRIVE WOONSOCKET RI 02895-6169	E6 & E7	50-5	Grassed Detention Basins
1044 MENDON ROAD	WYNDEMERE WOODS LLC 1044 MENDON ROAD WOONSOCKET RI 02895	D7	55-167	Grassed Detention Basin
115 FRONT STREET Behind 175 Front St	MCU COMMERCIAL SERVICES LLC 50 MAIN STREET MILLBURY, MA 01527	D3	15-16	Detention Basin
400 MENDON ROAD NORTH SMITHFIELD	LHOSPICE ST ANTONINE 400 MENDON ROAD NORTH SMITHFIELD, RI 02896-6999	D1	2-16	Grassed Detention Basin Mario at 767-3500 ext 110
1285 MENDON ROAD	DOLLAR GENERAL CORP STORE # 15533 P O BOX 182595 COLLUMBUS OH 43218	D6	49-395	Detention Basin
108 HIGH STREET	WOONSOCKET EDUCATION DEPARTMEN	B6	36-136	Detention Basin

Attachment 17

Street Sweeping Tonnage Report

2018 Street Sweeping Monthly Tonage

JAN	0.00 Tons
FEB	0.00 Tons
MAR	9.79 Tons
APR	105.93 Tons
MAY	182.60 Tons
JUN	76.68 Tons
JUL	111.52 Tons
AUG	0.00 Tons
SEP	68.71 Tons
OCT	23.80 Tons
NOV	0.00 Tons
DEC	63.22 Tons
TOTAL	642.25 Tons

Attachment 18

Blackstone River Watershed TMDL Implementation Plan

**Storm Water Management Program Plan
Amendment No. 1 and Implementation
Plan for the
Blackstone River Watershed
Pathogen and Trace Metals Impairments
Total Maximum Daily Loads**

City of Woonsocket
Rhode Island

February 2015



317 Iron Horse Way
Suite 204
Providence, RI 02908

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1 Introduction

On December 8, 1999, the U.S. Environmental Protection Agency (USEPA) promulgated Phase II of its National Pollution Discharge Elimination System (NPDES) storm water regulations. Phase I of the USEPA storm water program established regulations for storm water discharges from municipal separate storm sewer systems (MS4s) in municipalities with populations of 100,000 or greater, construction activities disturbing five or more acres of land, and ten categories of industrial facilities.

The Phase II Final Rule expands the Phase I program by requiring smaller communities with MS4s in urbanized areas to implement programs and practices to control polluted storm water runoff through the use of NPDES permits. Urbanized areas are based on the 2000 census. The Rhode Island Department of Environmental Management (DEM) has been delegated the authority to implement the EPA's NPDES program, which includes Phase II storm water requirements in the February 5, 2003 amended version of the RIPDES Regulations.

The City of Woonsocket (City) developed its Phase II storm water management plan in March 2004, entitled *Phase II Storm Water Management Program Plan and Implementation Plan for the City of Woonsocket* (Fuss & O'Neill, 2004) (hereinafter SWMPP). The documentation contained in this plan constitutes the first amendment to the City's SWMPP and is intended to address the *Blackstone River Watershed Pathogen and Trace Metals Impairments Total Maximum Daily Loads* (Blackstone River Watershed TMDL) issued by DEM in February 2013.

1.1 General Requirements for MS4 Operators under Storm Water Phase II

As part of the permitting process, regulated municipalities are required to prepare and submit storm water management program plans that address compliance with six minimum control measures. These six minimum measures include:

- Public Education and Outreach
- Public Participation/Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-Construction Runoff Control
- Good Housekeeping/Pollution Prevention

MS4 operators are also required to meet provisions of approved total maximum daily load (TMDL) studies within 180 days of notification by DEM in areas where a TMDL indicates significant contribution by storm water.

In 2004, the City developed a program plan to address the six minimum measures throughout the Town as a whole. This document, *Storm Water Management Program Plan and Implementation Plan Amendment No. 1 for the Blackstone River Watershed Pathogen and Trace Metals Impairments Total Maximum Daily Loads*

(hereinafter Amendment No. 1), is the first amendment to the original SWMPP and addresses the requirements of the Blackstone River Watershed TMDL.

1.2 Requirements for Impaired Waters with Finalized TMDLs

Under Storm Water Phase II Rule IV.D, DEM may designate an MS4 operator as regulated and require “nonstructural or structural controls based on an approved TMDL or other water quality determination that identifies provision for discharges that contribute to a violation of water quality standards or are significant contributors of pollutants to waters of the State.” Rule IV.D.8 indicates that an MS4 operator designated under Rule IV.D must submit a SWMPP which addresses the six minimum measures and provisions of approved TMDLs within 180 days of notification. The purpose of this plan amendment is to satisfy that requirement.

1.3 Structure of Amendment No. 1

The remainder of this plan provides detail for the purposes of addressing the Blackstone River Watershed TMDL. Other aspects of Woonsocket’s Storm Water Management Program should be considered to remain as described in the 2004 SWMPP and other program plan documents, including RIPDES MS4 annual reports.

The remainder of this plan includes the following general sections:

- *Review of the TMDLs (Section 2.0)* – This section provides a discussion on the Blackstone River Watershed TMDL and efforts that led to its development, covering impairments to the waterbodies as discussed in the TMDLs, likely sources of impairment identified by TMDL staff during the course of TMDLs development, and TMDLs recommendations for improving water quality in these areas.
- *Structural BMPs proposed to address the TMDLs (Section 3.0)* – This section discusses a process for planning and designing storm water best management practices (BMPs).
- *Revisions to the six minimum measures (Section 4.0)* – This section discusses revisions proposed to Woonsocket’s existing SWMPP.
- *Measurable goals for implementation (Section 5.0)* – This section discusses the general timeline and process for implementation of the measures to improve storm water management in the Blackstone River.
- *Program evaluation (Section 6.0)* – This section describes anticipated annual reporting in accordance with the TMDL.

2 Review of the Blackstone River Watershed TMDL

2.1 Waterbody Description

This section of the amendment provides waterbody descriptions and has been adapted from the *Total Maximum Daily Load Analysis for Blackstone River Watershed Pathogen and Trace Metals Impairments* (DEM, 2013).

2.1.1 Blackstone River

The Blackstone River Watershed (see *Figure 1*), which is located in south-central Massachusetts and northern Rhode Island, has a length of about 48 miles and an average width of 12 miles. The total drainage of the watershed is 454 square miles, with 335 square miles in Massachusetts and 140 square miles in Rhode Island. The river flows south from Worcester, MA to the Main Street Dam in Pawtucket, RI. At this point, it becomes the headwater for the Seekonk River, which is a tidal estuary that flows for approximately seven miles before combining with the Providence River. The Blackstone River is the second largest source of freshwater to Narragansett Bay.

The Massachusetts portion of the watershed encompasses Worcester County and small sections of Middlesex, Norfolk, and Bristol Counties. It encompasses a total of thirty cities and towns including Worcester and Attleboro. In Rhode Island, the watershed encompasses a portion of the following cities and towns: Burrillville, Glocester, North Smithfield, Smithfield, Woonsocket, Cumberland, Lincoln, Central Falls, and Pawtucket.

Primary tributaries to the Blackstone River in Rhode Island are the Branch River, Mill River, Peters River, and Abbot Run Brook. The Mill River has a drainage area of approximately 35 square miles, located primarily in Massachusetts. The drainage area is characterized by open land and low-density residential development, with limited areas of high-density urban development. The headwater of the Mill River is North Pond, located in Hopkinton, MA. The Peters River has a smaller drainage area of 13 square miles which is less than half of the Mill River. Its headwaters are located in Bellingham, Massachusetts. The river flows for approximately 3.5 miles to the State line and continues for an additional 0.94 miles where it combines with the Blackstone River. Abbott Run Brook has a drainage area of 29 square miles, with approximately 30% of its watershed located in Massachusetts, and its headwaters at Arnold Mills Reservoir. The Branch River has a drainage area of 93 square miles with approximately 95% of its watershed within the State of Rhode Island.

The Rhode Island section of the Blackstone River is separated into two reaches. The Upper reach is characterized by medium to medium-high density residential areas with high density urban development in the City of Woonsocket. The lower reach is characterized by high-density urban development in the City of Pawtucket.

The river has had a significant historical role in the industrialization of the northeast and an equally significant role in the environmental health of the Seekonk River and Narragansett Bay. The river is a major source of suspended solids, nitrogen, metals, and organics to these waters, resulting in impacts to fishing, shell fishing, tourism, and recreation. Resuspension and movement of contaminated sediments, headwaters defined by drainage from Worcester and its wastewater treatment facility, multiple other wastewater treatment facility discharges, stormwater contributions from CSO facilities and urban centers, and fluctuations in water levels due to hydropower operations, create a river system with problems characteristic of many others in the United States.

2.1.2 Mill River

As mentioned previously, the Mill River has a drainage area of approximately 88.35 square miles with most of the area in Massachusetts. The drainage area is characterized by open land and low-density residential development with limited areas of high-density urban development. North Pond in Hopkinton, MA is the headwater for the river. The river flows into Harris Pond at the Massachusetts-Rhode Island state line, and serves as a water supply for the City of Woonsocket. After Harris Pond, the river flows for approximately 3,200 feet before being conveyed underground to the Blackstone River. This underground passage is 1,150 feet long through two 10-foot wide by 12-foot high concrete conduits that were built in 1963 by the Army Corps of Engineers as part of a city-wide flood control project. Tributaries to the Mill River are Hop Brook, Quick River, Spring Brook, and Muddy Brook, all of which are located in Massachusetts.

2.1.3 Peters River

The headwaters for the Peters River are located in Bellingham, MA, with a total drainage area of 13 square miles. The river flows south for approximately 3.5 miles to the state line and continues for another mile through Rhode Island before it joins with the Blackstone River in Woonsocket. The drainage area is characterized by medium to medium-high residential development with high-density urban development in Woonsocket. Peters River flows for approximately 5,000 feet before being conveyed underground through a 10-foot by 10-foot concrete conduit at Elm Street. The river travels another 1,180 feet before its confluence with the Blackstone River. As with the Mill, the Corps of Engineers built this conduit in 1963 for flood control. The tributaries to the River are Bungay Brook, Arnold Brook, and unnamed streams that originate in Franklin State Forest.

2.1.4 Cherry Brook

The headwaters for Cherry Brook are Cedar Swamp Brook, a large wetland area located in North Smithfield, RI, at a low point between Woonsocket Hill and Whortleberry Hill Roads. The drainage area is approximately 33 square miles. The main stem of the brook is approximately 3.8 miles long and flows in a northwest direction until it crosses under Route 146A, where it bends to the southeast and eventually joins the Blackstone River adjacent to the Providence and Worcester (P&W) railroad easement at Olo Street. The area is characterized by rural and low-density residential development at the headwater, with medium-density residential and urban development as it travels through Woonsocket, RI. Tributaries to the brook are several unnamed first order streams that join Cherry Brook at various points along its mainstem.

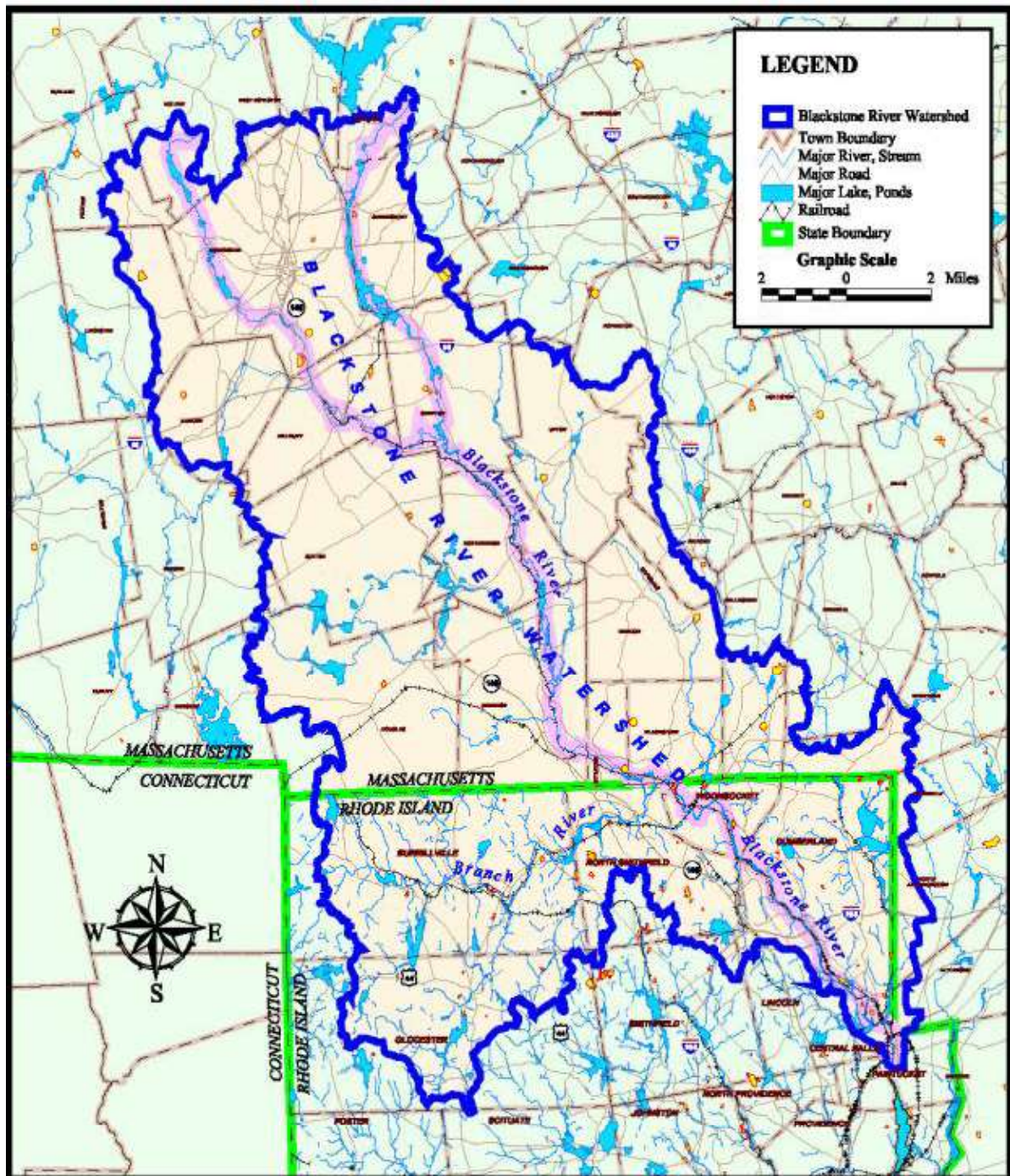


Figure 1—Blackstone River Watershed (Reprinted from *Blackstone River TMDL*)

2.2 Impairments of Concern

The DEM Office of Water Resources has prepared a list of impaired waters in Rhode Island in compliance with Section 303(d) of the federal Clean Water Act (CWA). In accordance with Section

305(b) of the CWA, states are required to survey their water quality for attainment of the fishable/swimmable goals of the CWA, and to report the water quality assessments biennially (every two years). The attainment of CWA goals is based on whether waters support their designated uses (defined as the most sensitive; and therefore, governing water uses that the class is intended to protect). For the purposes of water quality assessments, seven designated uses are evaluated fish and wildlife habitat (aquatic life use), drinking water supply, shellfish consumption, shellfish controlled relay and depuration, fish consumption, primary contact recreation and secondary contact recreation. In the assessments, use-support status is determined by comparing available water quality information to the water quality standards established in the *Rhode Island Water Quality Regulations*. The methodology for this assessment process is outlined in RI's Consolidated Assessment and Listing Methodology (CALM), June 2009.¹ Available water quality information may come from a variety of sources, including but not limited to, studies conducted by DEM, the federal government, and municipal studies.

Impaired waters are defined as those that do not meet *Rhode Island Water Quality Regulations*, and DEM develops TMDLs for each of these waters. The purpose of a TMDL is to identify the capacity of a surface water to assimilate pollutants without limiting designated uses (e.g., fishable, swimmable) or violating the *Rhode Island Water Quality Regulations*.

Until fairly recently, TMDLs commonly focused on large point sources of pollution such as wastewater treatment facilities. These sources are relatively easy to track and abate as they tend to be centrally located and managed. Other TMDLs (and most TMDLs that will be developed in the foreseeable future) focus on storm water outfalls and diffuse nonpoint sources of pollution. These sources are numerous, decentralized, and less easily located; may have uncertain ownership, and were unregulated prior to Phase II.

The surface waters within Woonsocket identified on the State's 303(d) list for 2012 are presented in *Table 1*, which also includes pollutants causing impairment, TMDL development priority, and the target year for TMDL development for these waters.

¹ <http://www.dem.ri.gov/programs/benviron/water/quality/pdf/finalcalm.pdf>

Table 1
Impaired and Delisted Waters – City of Woonsocket

Waterbody Name (Identification #)	Cause	Calendar Year Target for TMDL ^a	Control Action ^b
Blackstone River (RI0001003R-01A)	Benthic-Macroinvertebrate Bioassessments	2018	Determine need for TMDL post wastewater treatment facility upgrades
	Cadmium	2012	Not Developed
	Eurasian Water Milfoil, Myriophyllum spicatum	--	No TMDL required. Impairment is not a pollutant.
	Lead	2012	Not Developed
	Non-Native Aquatic Plants	--	No TMDL required. Impairment is not a pollutant
	Oxygen, dissolved	2018	Determine need for TMDL post wastewater treatment facility upgrades.
	Phosphorus (Total)	2018	Determine need for TMDL post wastewater treatment facility upgrades.
	Mercury in Fish Tissue	2022	Not Developed
	PCB in Fish Tissue	2022	Not Developed
	Enterococcus	2012	Not Developed
	Fecal Coliform	2012	Not Developed
Blackstone River (RI0001003R-01B)	Benthic-Macroinvertebrate Bioassessments	2018	Determine need for TMDL post wastewater treatment facility upgrades.
	Cadmium	2012	Not Developed
	Lead	2012	Not Developed
	Oxygen, dissolved	2018	Determine need for TMDL post wastewater treatment facility upgrades.

Waterbody Name (Identification #)	Cause	Calendar Year Target for TMDL ^a	Control Action ^b
	Phosphorus (Total)	2018	Determine need for TMDL post wastewater treatment facility upgrades.
	Mercury in Fish Tissue	2022	Not Developed
	PCB in Fish Tissue	2022	Not Developed
	Enterococcus	2022	Compliance with Consent Agreement for CSO abatement expected to negate need for TMDL
	Fecal Coliform	2022	Compliance with Consent Agreement for CSO abatement expected to negate need for TMDL
Cherry Brook & Tributaries (RI0001003R-02)	Copper	2012	Not Developed
	Enterococcus	2012	Not Developed
	Fecal Coliform	2012	Not Developed
Mill River (RI001003R-03)	Enterococcus	2012	Not Developed
	Fecal Coliform	2012	Not Developed
Peters River (RI0001003R-04)	Copper	2012	Not Developed
	Enterococcus	2012	Not Developed
	Fecal Coliform	2012	Not Developed

Notes:

- The target year as stated in the Final 2012 303(d) list.
- Control Action does not currently include TMDL, other actions are to be taken before re-evaluating the impairment.

In accordance with Table 5.1 of the Blackstone River Watershed TMDL, the Blackstone River segment (RI001003R-01A) (including sampling stations W-21, W-22, W-17, W-02, W-03, W-04, P-04 and W-25) must achieve a 88 percent (with a 10 percent margin of safety) reduction in fecal coliform and a 28 percent (with a 10 percent margin of safety) reduction in enterococci to meet the TMDL. Other segments of the river and its tributaries must meet even higher percent reductions (see *Table 2*.)

Table 2
Required Percent Reductions for Bacteria to Meet TMDL

Section	Sampling Stations	% Reduction for Fecal Coliform	% Reduction for Enterococci
Blackstone River at Massachusetts- Rhode Island State Line	W-01	93	32
Blackstone River	W-21, W-22, W-17, W-02, W-03, W-04, P-04, W-25	88	28
Mill River at Massachusetts	W-11	--	--
Mill River	W-12, W-13	97	94
Peters River at Massachusetts-Rhode Island State Line	W-14	98	95
Peters River	W-15, W-16	98	98
Cherry Brook	W-31	98	91

Note: Values include a 10% margin of safety

Table 6.4 of the Blackstone River Watershed TMDL states that the Blackstone River segment (RI001003R-01A) must achieve a 0.57-37.1 lb/day load reduction for lead and a 0.06-13.1 lb/day load reduction for cadmium to meet the chronic TMDL criteria (no data is available for copper load reduction requirements.) *Table 3* provides a summary of the required load reductions for each segment of the river for each constituent.

Table 3
Required Percent Reductions for Trace Metals to Meet TMDL

Parameter	Blackstone River at Massachusetts-Rhode Island State Line	Blackstone River (RI0001003R-01A)	Blackstone River (RI0001003R-01B)	Peters River at Massachusetts-Rhode Island State Line	Peters River	Cherry Brook
Copper (lbs/day)	NA	NA	NA	0.08	0.16	0.03
Lead (lbs/day)	1.12 - 30.1	0.57 - 37.1	0.97 - 14.6	NA	NA	NA
Cadmium (lbs/day)	0.01 - 19.3	0.06 - 13.1	0.04 - 10.0	NA	NA	NA

Notes: NA is used to indicate that either there was not an impairment requiring a TMDL for this waterbody, or sampling was not conducted for this constituent)

2.3 Sources of Impairment Described in the TMDLs

The TMDLs discusses water quality monitoring and analysis, which led to the development of the Blackstone River Watershed TMDL. The TMDL indicates the most prevalent source of fecal coliform bacteria to the waterbody is stormwater runoff. Other possible sources include RIPDES permitted discharges (illegal and “legal” dry weather discharges from stormwater outfalls, dry and wet weather CSO discharges, failing septic systems, animal waste and sediment resuspension. Actual and potential sources to the entire Blackstone River are summarized in *Table 4* (adapted from the *Total Maximum Daily Load Analysis for Blackstone River Watershed Pathogen and Trace Metals Impairments* (DEM, 2013)) and are discussed below.

Table 4
Actual and Potential Sources of Pollution to the Blackstone River

Source	Location / Explanation
Stormwater Runoff	<u>Throughout watershed particularly in more urban areas.</u> Runoff from parking lots, streets, roofs, and runoff contaminated with pet, feral, animal wastes, and heavy metals (Cu, Pb, and Cd)
Urban Runoff from Dry Weather	<u>Watershed-wide.</u> Overland flows from various land use practices enter storm drains, which including lawn irrigation runoff, car washing, sidewalk washing and commercial pavement washing. These urban flows can contain bacteria and metals.
RIPDES sanitary and industrial wastewater discharges	<u>There is one major RIPDES permittee, Woonsocket WWTF, and two minor RIPDES permittees, Okonite Company and OSRAM Sylvia discharging effluent containing the TMDL's pollutants of concern into the Blackstone River. Watershed-wide there are several MSGP holders that discharge stormwater from areas where metal contamination may be present.</u>
Wet and Dry Weather CSO Discharges	<u>CSOs discharge into the lower Blackstone River reach between Whipple Bridge and Slater Mill Dam.</u> CSOs carry sanitary waste and stormwater runoff. Their discharges contain floating debris, pathogens, stormwater runoff and raw sewage. Dry-weather CSO discharges can occur when the conduits are blocked with debris, garbage, and structure failures.
Animal Waste	<u>Watershed-wide.</u> Pet waste left on pavement, thrown into catch basins or left on lawns can be washed into storm drains by rain or melting snow. Farm animals also may contribute to elevated bacteria levels due to contaminated runoff and/or unrestricted access of farm animals to wetlands and surface waters. Feral animals attracted by garbage and other litter can congregate, resulting in their waste being transported through runoff into the river.
Illegal Waste	<u>Watershed-wide.</u> Illegal sources include illicit connections of sanitary wastewater to storm drains, as was discovered in the area of Broad and Blackstone Streets in Cumberland.
Septic System Failures	<u>Watershed-wide.</u> Failing or improperly designed or installed on-site septic tanks and/or drain fields that allow discharge of partially treated or untreated effluent.

Source	Location / Explanation
Sediment Resuspension/ Sloughing	<u>Watershed-wide.</u> Metals such as Cd, Cu, and Pb have an affinity for sediments. Previous studies have identified impoundments in the Massachusetts portion of the Blackstone River where sediments have become entrenched behind dams. Flow fluctuations due to precipitation, runoff, and hydropower operations may increase bank scouring, sloughing, and re-suspension of bottom sediment. This re-suspended contaminated material moves into the water column and can be transported and redeposited several miles downstream.
Waste Sources	<u>Watershed-Wide.</u> Waste sources include waste cleanup such as superfund sites, federal facilities, brownfields, underground storage tank system releases and waste lagoons.
Massachusetts Source	<u>From Massachusetts segments of river.</u> The Blackstone River Watershed TMDL data showed significant pollutant loads coming across the state line for both bacteria and metals. Historically, NPDES permitted facilities in MA were issued permits with winter bacteria limits that were documented to cause exceedances in the RI portion of the river, where no seasonal bacteria criteria are applied. More recent NPDES permits have resolved this issue. CSO discharges in Worcester may also contribute to elevated pollutant concentrations in the RI portion of the Blackstone.
Branch River	<u>Branch River.</u> Results of the Blackstone River Watershed TMDL field study show that the Branch River is a consistent and significant source of lead to the Blackstone during dry weather. Wet-weather contributions of lead from the Branch River are relatively low and not a concern.

The Blackstone River Watershed TMDL also provides a description of potential sources. *Section 2.3.1 – Section 2.3.10* (below) summarize this description. Discussion of this information and selection of appropriate BMPs are discussed in *Section 3.0* of this plan. Note that some of the potential sources identified do not apply to the City of Woonsocket. This plan discusses each potential source to the Blackstone River, inclusive of those outside the City of Woonsocket, but only provides the TMDL recommendations for the sources identified as potential issues for the City of Woonsocket.

2.3.1 Storm Water

The Blackstone River Watershed TMDL discusses storm water as a potential source.

Pages 43 – 46 of the Blackstone Watershed TMDL:

Stormwater runoff is a significant source of pollution to the Blackstone River and its tributaries, particularly in the more urbanized areas of Woonsocket, Lincoln, and Cumberland. The majority of stormwater in the watershed's other two urban centers, Pawtucket and Central Falls is discharged into Combined Sewer Overflows and is discussed separately below. Throughout the non-CSO portion of the watershed, storm drainage systems collect, concentrate and route polluted runoff from streets and highways directly to the river. Stormwater from privately owned property, such as parking lots, and commercial and industrial areas may be discharged into these municipal or state owned drainage systems or may be conveyed directly to the Blackstone River via overland flow, stormwater pipes, or other conveyances...

Urban/suburban land uses dramatically change watershed hydrology by affecting the quantity and quality of runoff. Urban development results in increases in stormwater runoff peaks and volumes and increased frequency of runoff from smaller storms. With increasing impervious

cover within a watershed, the greater quantities of stormwater runoff wreak havoc with the physical structure and stability of streams and the habitat for aquatic life, and less base flow is available to aquatic life in streams during low flow periods. Typically, water quality also deteriorates with increasing imperviousness...

2.3.2 RIPDES Sources

Page 46 of the Blackstone River Watershed TMDL states:

The Woonsocket WWTF, RIPDES permit number RI0100111, discharges municipal wastewater to the upper reach of the Blackstone River (Segment 1A). There are a number of other industrial facilities that discharge into the Blackstone River that are operating under RIPDES permits. Of these, three (Okonite Company, OSRAM Sylvania Products, and Woonsocket Water Treatment Facility) are considered minor dischargers, and only OSRAM Sylvania Products, located on the lower reach (Segment 1B) historically discharged lead, a pollutant of concern relative to this TMDL. This facility discharges both contact and non-contact cooling water which is defined as water that is used to reduce temperature and which does not come into direct contact with any raw materials or intermediate, final or waste product (other than heat).

2.3.3 Combined Sewer Overflow (CSO)

Pages 50-51 of the Blackstone River Watershed TMDL state:

A combined sewer system is a wastewater collection system owned by a municipality (as defined by Section 502(4) of the Clean Water Act) that conveys domestic, commercial, and industrial wastewater and stormwater runoff through a single pipe system to a publicly owned treatment works (POTW). A CSO is defined as a discharge from a point prior to the POTW treatment plant. CSOs generally occur in response to wet weather events. During wet weather periods, the hydraulic capacity of the combined system may become overloaded, causing overflows to receiving waters at the discharge points.

Thirteen CSOs discharge into the Blackstone River between Whipple Bridge (W-04) and Slater Mill Dam (W-05). The operation and maintenance of these CSOs is the responsibility of the Narragansett Bay Commission (NBC), a POTW which is responsible for the combined sanitary and storm sewers, sanitary sewers, and the wastewater treatment plants at Fields Point in Providence and Bucklin Point in East Providence. CSO discharges include a mix of domestic, commercial, and industrial wastewater and stormwater runoff. As such, CSO discharges contain human, commercial, and industrial wastes as well as pollutants washed from streets, parking lots, and other surfaces.

Pages 111-113 of the Blackstone River Watershed TMDL state:

The combined sewer overflows into Narragansett Bay are a violation of the Federal Clean Water Act. In July of 1994, DEM approved a comprehensive Combined Sewer Overflow Control Facilities Program prepared by the Narragansett Bay Commission. The Program proposed the construction of six underground storage facilities and three deep rock tunnel segments at a cost of \$467 million (1992 dollars). The underground storage tanks and tunnels would contain the sewage overflows during rain events so that the stored flows could be returned to the system for treatment after the storm. Subsequently, NBC reevaluated their CSO abatement plan and prepared an amended CSO Control Facilities Program that was approved by DEM in July of 1999. The amended Program replaced the underground storage facilities with a combination of CSO interceptors and sewer separation projects, and refined the sizing of the deep rock tunnels, with a total cost of \$390 million (1998 dollars)... The entire CSO abatement project is being undertaken in three phases over the course of approximately 20 years.

There are currently 15 active combined sewer overflows discharging to the Blackstone River between River Street and Slater Mill Dam. Of these 15, twelve are monitored for flows (six in Central Falls and 6 in Pawtucket). At these sites, flow meters monitor either volume of overflow or activity of the overflow. The flow monitoring results are used to determine if and when an overflow to the Blackstone occurs, monitor surcharging in the interceptor, and to develop a history of the flow data to better identify problem situations and improve efficiency.

The NBC Interceptor Maintenance Report on the CSO for the first half of 2012 indicated that there were no dry weather discharges observed at any of the Central Falls or Pawtucket CSOs that discharge to the Blackstone mainstem. Additionally, NBC maintains two sampling locations on the Blackstone mainstem, one at the Mendon Road/ Lonsdale Avenue bridge crossing of the Blackstone and one adjacent to the Slater Mill Museum Site.

As noted above, none of the CSOs that enter the Blackstone are from the City of Woonsocket.

2.3.4 Domestic Animal and Vermin Waste

Pages 51-52 of the Blackstone River Watershed TMDL states:

Pet waste left to decay on streets, sidewalks, or on grass near the street may be washed into storm sewers by rain or melting snow. Dogs in particular are likely a major source of fecal coliform bacteria in urban runoff, given their population density and daily defecation rate. DNA fingerprinting techniques have clearly shown pet waste to be a major contributor of bacteria in urban and suburban watersheds. A study by Lim and Oliveri (1982) found that dog feces were the single greatest source contributing fecal coliform and fecal strep bacteria in highly urban Baltimore catchments. RIDEM staff observed significant amounts of pet waste in areas frequented by people walking their dogs in municipal parks and around apartment and condominium complexes that are located adjacent to the mainstem of the Blackstone River and its tributaries.

Livestock and dairy operations are another potential source of bacteria in the watershed. Further investigation narrowed the area of concern primarily to the headwaters of Cherry Brook in the vicinity of Pound Hill Road (Stations CB04, CB05, and CB06). Pathogen sampling conducted in August 2009 by RIDEM staff documented that rising levels of fecal coliform also occur at the furthest downstream sampling location at Olo Street (W-31) as compared to upstream concentrations (CB01 and CB02) indicate that sources in the lower reach in Woonsocket are contributing to elevated bacteria levels.

During the field portion of the [Blackstone River Watershed TMDL] study, runoff from a small family farm located at the intersection of Carrington Street and Lonsdale Avenue in Lincoln was observed to be flowing off the far side of the farm field into a catch basin at the corner of Lonsdale Avenue and Cook Street, near the Whipple Bridge.

2.3.5 Illicit Sources

Page 52 of the Blackstone River Watershed TMDL states:

One of the pollution hot spots identified in the [Blackstone River Watershed TMDL] Field Study was a channel that discharges into the Blackstone River adjacent to the Ann & Hope Warehouse parking lot (located at the intersection of Ann and Hope Way and Broad Street) and drains a fairly extensive mixed urban area of Cumberland. RIDEM Office of Compliance and Inspection staff sampled up gradient of the outfall identified in the report as W-35 (OF-317), pulling manhole covers to sample these locations in order to isolate the source of the bacterial pollution to the river. The Office of Compliance and Inspection also dye tested the sewage lines of many of the homes and discovered five residences and a church that were directly connected to the stormwater lines rather than to the sewer lines. Two of the residences were multi-family homes such that a total of 13 sources were found to be discharging sewage directly to the Blackstone River via the storm drain. Since the surveys were completed, all locations have been properly connected to the sewers and the fecal coliform levels have been reduced to 9 MPN/100ml from a high of greater than 16,000 MPN/100ml that was reported during a dry weather survey taken during the [Blackstone River Watershed TMDL] field work.

[There are many] outfalls that flow directly into the Blackstone Watershed that are potential sources of pathogens. Observed elevations of bacteria in the lower reach of Cherry Brook during dry weather suggest possible illicit discharges. The high bacteria levels observed during the dry weather surveys on Mill River also suggest illicit discharges. [Table 5 below] lists those outfalls that were sampled during the [Blackstone River Watershed TMDL] study and which were observed to be flowing during dry weather [or were identified as priority outfalls in the City of Woonsocket.]

Table 5 below summarizes the results of the Blackstone River Watershed TMDL outfall sampling as well as the illicit discharge detection and elimination studies completed by Fuss & O'Neill. The sampling results used for analysis in the Blackstone River Watershed TMDL came from a study conducted by RIDEM and the Louis Berger Group, Inc. for which samples were taken in the fall of 2005. The study is entitled *Water Quality—Blackstone River Final Report 2: Field Investigations*. Table 5 also presents data from

the Woonsocket illicit discharge detection and elimination (IDDE) program for which samples were taken in 2006 and 2007. The IDDE report was produced by Fuss & O'Neill and is entitled *Illicit Discharge Detection & Elimination Plan: Dry Weather Sampling*. Because no discrete geolocations are provided for the outfalls in the Blackstone River Watershed TMDL exact comparisons to the outfalls in the IDDE program could not be made. The outfalls were compared via maps that are available of each set of outfalls. If it was unclear which outfalls were compared due to areas with many outfalls in close proximity, all the potential outfalls that could be the same outfall were listed. Some outfalls in the Blackstone River Watershed TMDL were not in the IDDE program and vice versa. The comparison was the best possible given the available data.

Table 5
Outfall Bacteria Sampling Results

Blackstone TMDL Outfall ID	Potential DOT Ownership?¹	Dry Flow (cfs)	Highest Observed Fecal Coliform concentration in 2005 (MPN/100mL)²	IDDE Program Outfall ID	Highest Observed Dry Weather Bacteria concentration in 2006-2007 (MPN/100mL)
201	Yes	0.14	110	Not Detected	-
214	No	0.14	0	Not Detected	-
219	Yes	0.75	300	610-611	No Flow
231	No	2	16,000	543	1,800
242	Yes	0.2	3,000	444	1,600
243	Yes	-	1,700 (wet weather)	447	1,600
247	Yes	-	>16,000 (wet weather)	485-491	No Flow
258	No	-	>16,000 (wet weather)	383	No Flow
263	Yes	0.15	>16,000	554	No Flow
266	Yes	0.5	220	370	130
703	Yes	-	Not Sampled	615	0
704	No	-	2,400	395	No Flow
802	Yes	1.5	NA	404-409	No Flow
804	Yes	-	Not Sampled	Not Detected	-
815	No	0.1	NA	Not Detected	-

Notes:

- 1) The Blackstone River Watershed TMDL identifies outfalls that may be DOT owned based on the road closest to the outfall. All outfalls that are not owned by DOT are owned by the City of Woonsocket
- 2) MPN is the "Most Probable Number" and is a statistically derived number that represents the actual number of colonies in a sample.

2.3.6 Failing Septic Systems

Pages 54-55 of the Blackstone River Watershed TMDL states:

Although the City of Woonsocket is sewered, as is Pawtucket and Central Falls, portions of Lincoln and Cumberland, a significant portion of the watershed is more rural and dependent upon on-site septic systems. Proper maintenance and upkeep of septic systems are critical to both public health and ecological health. A failing system can release untreated or inadequately treated wastewater containing pathogens into the groundwater, and directly or indirectly to surface waters. Storm drains may serve as conduits for inadequately treated wastewater to be discharged into surface waters, in both dry weather via cracked storm drains intercepting the contaminated plumes or in wet weather through the mixing of “surfaced” wastewater and stormwater runoff. Through these pathways, even failing septic systems located away from the direct vicinity of the river may impair water quality. Since 2005, a total of 47 septic system infractions in the watershed of the Blackstone River were identified by RIDEM. It should be noted that DEM does not have evidence that these were directly contributing to observed bacteria elevations, though they represent a significant potential source.

Figure 2 below shows septic system-related infractions in the Blackstone Watershed between 2005 and 2009 including Notices of Violation (NOVs) and permit applications. It should be noted that permit applications are not associated with failing OWTS and are not potential sources. The vast majority of the NOVs shown in Figure 2 are associated with septic system failures. NOVs may also include illegal tie-ins to storm drain systems, illegal direct discharges and System Suitability Determination Infractions (issued when owners make significant upgrades to residences without submitting an application to the Office of Water Resources to determine if existing system is adequate to service additional demands.)

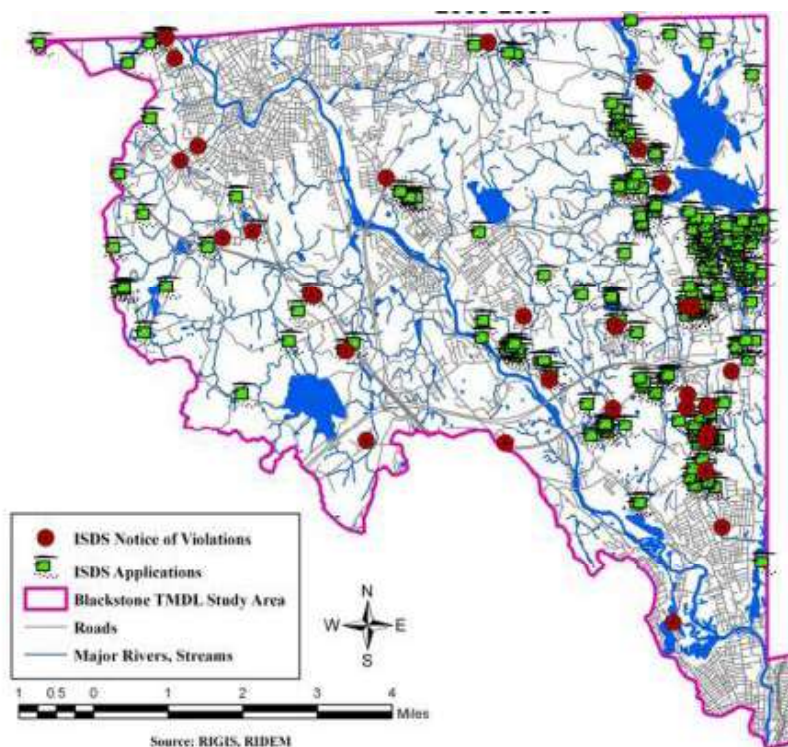


Figure 2—ISDS[i.e., OWTS] Applications and Notice of Violations (NOVs) in Blackstone River Watershed TMDL Study Area 2005-2009 (Reprinted from *Blackstone Watershed TMDL*)

It should be noted that this plan is intended to address the MS4 and not wastewater.

2.3.7 Sediment Resuspension and Embankment Sloughing

Page 56 of the Blackstone River Watershed TMDL states:

In previous studies, sediment resuspension and sloughing of river embankments have been observed in the impoundments along the Massachusetts portion of the Blackstone River. Toxic sediments tend to build on the upstream side of impoundments and these can be transported downstream during periods of high flows. Fisherville Pond and Rice City Pond in Massachusetts are two of the more notable impoundments along the Blackstone due to the large areas of exposed sediments that are present. In the study conducted on these impoundments for the Army Corps of Engineers (Wright, et al, 2004), re-suspension and sloughing was a significant source sediments in the downstream river reaches. It was also noted in the BRI (Wright, et al, 2001) that Rice City Pond was a significant source of re-suspended sediments during wet weather events. This impoundment is approximately 8.2 miles upstream of W-01. Other impoundments between Fisherville and the MA/RI border that may be potential sinks for toxic sediments include Farnumsville, Riverdale, and the Blackstone Gorge.

The Blackstone River Watershed TMDL does not identify embankment sloughing as a source from Woonsocket riverbank areas.

2.3.8 Waste Sources

Page 56 of the Blackstone River Watershed TMDL states:

There are numerous waste cleanup sites located within the Blackstone River watershed. Waste cleanup sites include Superfund sites, federal facilities, brownfields, underground storage tank system releases, treatment, storage and disposal facility accidental releases, and oil spills. EPA New England's Office of Site Remediation and Restoration (OSRR) administers the region's waste site cleanup and reuse programs and provides a web site to locate hazardous waste sites in New England...

In the portion of the Blackstone River watershed addressed in this TMDL, there are approximately 166 Leaking Underground Storage Tanks (LUST), 128 Waste Management Sites, with 17 of these on the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) which indicates further investigation may be necessary to determine if these sites should be included on the National Priorities List as a superfund site. Additionally, there are 6 waste lagoons in the watershed, one of which is inactive, three are closed, and two still active at the Riverview Quarry in Cumberland and Wrights Dairy Farm in North Smithfield.

It should be noted that although LUSTs are present in the watershed, they are likely not sources of metals or pathogens.

2.3.9 Massachusetts

Pages 57-59 of the Blackstone River Watershed TMDL states:

As part of the [Blackstone River Watershed TMDL] study, field investigations included collection of samples under both dry and wet weather conditions at stations located just north of the state line on each of the Blackstone, Mill and Peters Rivers to evaluate contributions of pollutants from the Massachusetts portion of the respective watersheds. As documented in the [Blackstone River Watershed TMDL] report with the exception of fecal coliform, more than 50% of the dry weather annual loads of individual constituents observed at Station W-02 at Manville Dam were contributed by Massachusetts' sources. For fecal coliform, 41% of the annual dry weather fecal coliform load measured at Station W-02 was contributed by Massachusetts' sources (without consideration for bacterial decay). Water quality at Station W-01 in Millville, MA exceeded 200 MPN/100 coliform criteria for seven of the eighteen surveys. Prior to 2008, MA treatment facilities did not have a fecal coliform limit from November 1 to March 30. [Blackstone River Watershed TMDL] data showed a geomean of 1056 MPN/100ml for this period of dry weather sampling. A revised NPDES permit issued for Upper Blackstone Water Pollution Abatement District by the USEPA effective on October 1, 2008 limits the maximum daily value at 1,429 MPN/100ml. Massachusetts sources as measured at Station W-01 accounted for 129% of the average wet weather percent load measured at Station W-02 at Manville Dam (not accounting for bacterial decay). By comparison, the Branch, Mill and Peters Rivers' contribution averaged 14%, 11% and 13% respectively over the three storms. For dissolved lead, 67% of the annual dry weather load measured at Station W-02 was contributed by Massachusetts' sources as measured at Station W-01. For wet weather, approximately 97% of the total average wet weather lead load to the reach was accounted for at Station W-02, with Massachusetts sources accounting for 84% of the average wet weather percent load observed at Station W-02.

On the Peters River, unlike the Mill River, sources above the State line are important and do represent a significant portion of the fecal coliform load in the lower stations (W-15 and W-16)... Dissolved copper and lead samples collected as part of the [Blackstone River Watershed TMDL] field surveys showed that significant sources of these elements are located in the Massachusetts portion of the watersheds for the Mill and Peters Rivers.

This source affects the waters of the Blackstone River in the City of Woonsocket, but is not caused by sources entering the river from the City of Woonsocket.

2.3.10 Branch River

Page 60 of the Blackstone River Watershed TMDL states:

The Branch River is a significant contributor of fecal coliform to the Blackstone in the RI portion of the river between the state line and Manville Dam (W-02). The Branch River exceeded the State's 200 MPN/100ml limit for three of the four times that it was sampled during the dry weather surveys. A mass balance for surveys 7, 9, and 11 where all stations were

sampling showed that an average of 301% of the fecal load at Station W-02 was accounted for. Of this 109% was contributed by the Branch, followed by 108% at W-01, and the Mill in third at 71% of the load... The Branch River was the largest [Rhode Island] contributor at 28% of the dissolved lead load at Manville Dam (W-02) during the dry weather surveys...

RIDEM will further evaluate the sources of lead and pathogens to the Branch River, and needed reductions to meet both Branch River and Blackstone River water quality standards as part of the Branch River TMDL investigation [are] scheduled to be completed by 2020.

2.4 Waterbody-Specific TMDL Recommendations

This section of the plan summarizes the DEM recommendations presented in the Blackstone River Watershed TMDL. Each of the sections in *Section 2.3* are addressed individually, although some were determined to not need action based on the findings described in *Section 2.3*. Outfalls discussed in this section can be found on the map in *Appendix A*.

2.4.1 Storm Water

Pages 92-93 of the Blackstone River Watershed TMDL states:

The watershed of the Blackstone River contains a mix of high density and rural areas. When possible, efforts by municipalities, land trusts and others to preserve open space should continue. As land is developed, it is critical that significant natural features be protected to maintain the area's unique characteristics and to prevent further degradation of water quality – as can be achieved through use of conservation development and LID techniques.

Redevelopment projects represent opportunities to reduce the water quality impacts from the watershed's urban uses by reducing impervious cover and/or attenuating runoff on-site. As described below, municipal ordinances must be reviewed and revised to make sure that future development projects do not add to water quality problems and that redevelopment projects reduce contributions to the water quality problems in the Blackstone River Watershed.

Pages 103-105 of the Blackstone River Watershed TMDL states specifically for the City of Woonsocket:

Woonsocket must... assess and prioritize drainage systems listed in [Table 6] for the design and construction of BMPs that reduce the pollutants of concern and stormwater volumes to the *maximum extent feasible*...

Table 6
Priority Outfalls

BTMDL Data Report ID	Outfall Size (inches)	Dry Flow (cfs)	Wet Flow Estimated (cfs)	Highest Observed Fecal Coliform (MPN/100ml)	Highest Observed Dissolved Copper (µg/L)	Highest Observed Dissolved Lead (µg/L)	Drains 2 or more Impervious Acres	Presumed Ownership*
Woonsocket								
Blackstone River								
201	48	0.14	5.0	110	1.8	0.19	√	Woonsocket/ DOT
205	60	-	0.20	270	5.3	5.7		Woonsocket/ DOT
213	36							Woonsocket
214	48	0.14					√	Woonsocket
215	36							Woonsocket
218	30						√	Woonsocket
219	72	0.75		300	4.2	0.23	√	Woonsocket/ DOT
222	36							Woonsocket
225	42							Woonsocket
231	48	2.0	5.0	16,000	3.1	1.5	√	Woonsocket
233	30						√	Woonsocket
234	36 x 36							Woonsocket
235	15		0.10	2,200	8.5	2.0		Woonsocket
242	30	0.08	0.20	3,000	12.0	3.7		Woonsocket/ DOT
243	48		0.40	1,700	17.0	8.1	√	Woonsocket/ DOT
244	18		0.2	130	5.4	3.4		Woonsocket
245	36 x 48						√	Woonsocket/ DOT
247	72		3.5	>16,000	8.9	4.6	√	Woonsocket/ DOT
251	24							Woonsocket
252	24							Woonsocket
255	27						√	Woonsocket
258	60		0.25	>16,000	12.0	3.3	√	Woonsocket
260	24							Woonsocket/ DOT
263	36	0.15	2.5	>16,000	7.1	3.5	√	Woonsocket/ DOT
266	48	0.50	6.0	220	4.8	0.7	√	Woonsocket/ DOT
Mill River								
703	24							Woonsocket/ DOT
704	36		0.5	2,400	5.7	7.2	√	Woonsocket
Peters River								
802	24	1.5	5		2.5	1.1	√	Woonsocket/ DOT
804	72						√	Woonsocket/ DOT
806	18-24							Woonsocket
815	24	0.10			1.7		√	Woonsocket

(Reprinted from Blackstone River Watershed TMDL)

[Table 6] lists thirty-one priority outfalls located in Woonsocket of which, the City of Woonsocket is the presumed owner of eighteen, and either RIDOT or Woonsocket the presumed owner of thirteen. As a preliminary step, Woonsocket must work with RIDOT to confirm ownership, to identify interconnections among the drainage systems to the priority outfalls, and to prioritize those with high pathogen levels and/or trace metals in their discharges based upon available information. Woonsocket should begin this assessment process by reviewing available information for priority outfalls listed in [Table 6], as well as any other monitoring data collected by the City or others.

The outfalls [listed] below are a subset of the priority outfalls listed in [Table 6] [and were selected due to their high pollutant concentrations and the amount of impervious surface in

their catchments]...These should be considered a starting point for further investigations by Woonsocket. (List adapted from Blackstone River Watershed TMDL)

- **Outfall 219**- located at the mouth of Cherry Brook as it enters the Blackstone River
- **Outfall 231**- had dry weather flow and high pathogen and lead concentrations
- **Outfall 242**- had dry weather flow and high pathogen and dissolved metals concentrations
- **Outfall 243**- had a wet weather fecal coliform concentration of 1,700 MPN/100mL and high lead concentrations
- **Outfall 247**- had a wet weather pathogen concentration of 16,000 MPN/100mL and high lead concentrations
- **Outfall 258**- area draining to outfall has experienced significant redevelopment and had high pathogen and trace metals concentrations
- **Outfall 263**- had dry weather flow and is located across from the Woonsocket WWTF and had high pathogen and trace metal concentrations
- **Outfall 704**- had high wet weather pathogen and lead concentrations
- **Outfall 703**- not originally sampled but was identified as a possible source due to an auto parts yard in the outfall's catchment
- **Outfall 802**- catchment contains impervious surfaces and samples contained trace metals
- **Outfall 804**- is partially submerged and was determined to potentially have a low dry weather flow
- **Outfall 815**- had a dry weather flow and high dissolved metals concentrations; white foam was observed, suggesting the potential presence of domestic wastewater containing detergents

The IDDE Program completed sampling of many of the same outfalls as identified in the list above. The results from this study are presented in *Table 5*. *Table 7* below describes the recommended action for each of the outfalls listed above. Those outfalls for which it is recommended that further action be taken are highlighted in orange.

Table 7
Recommendations for Priority Outfalls

Blackstone TMDL Outfall ID	IDDE Program Outfall ID	Recommendation
219	610-611	This outfall had no flow during the IDDE sampling and a very low bacteria concentration during the TMDL sampling. Because the IDDE sampling was completed most recently, it is recommended that this outfall be removed from the priority outfall list.
231	543	This outfall should be kept on the priority outfall list. Dry weather flows with high bacteria concentrations were noted during each sampling program.
242	444	This outfall should be kept on the priority outfall list. Dry weather flows with high bacteria concentrations were noted during each sampling program.

Blackstone TMDL Outfall ID	IDDE Program Outfall ID	Recommendation
243	447	This outfall should be kept on the priority outfall list. Dry weather flows with high bacteria concentrations were noted during the IDDE program. However, wet weather flows with high bacteria concentrations alone from the TMDL study would not warrant identification as a priority outfall.
247	485-491	This outfall had no flow during the IDDE sampling and no flow during dry weather for the TMDL sampling. It is recommended that this outfall be removed from the priority outfall list.
258	383	This outfall had no flow during the IDDE sampling and no flow during dry weather for the TMDL sampling. There was a wet weather sample with a high bacteria concentration. It is recommended that the watershed draining to this outfall is investigated.
263	554	This outfall had no flow during the IDDE sampling which was completed more recently than the TMDL sampling. It is recommended that this outfall be removed from the priority outfall list.
703	615	This outfall had no flow during the IDDE sampling and no flow during dry weather for the TMDL sampling. Location near an auto parts yard does not warrant identification as a priority outfall if sampling proves the outfall is not a source of bacteria during dry weather. It is recommended that this outfall be removed from the priority outfall list.
704	395	This outfall had no flow during the IDDE sampling and no flow during dry weather for the TMDL sampling. There was a wet weather sample with a high bacteria concentration. It is recommended that the watershed draining to this outfall is investigated.
802	404-409	This outfall had no flow during the IDDE sampling and no flow during dry weather for the TMDL sampling. There was no bacteria detected during wet weather sampling during the TMDL study. It is recommended that the watershed draining to this outfall is investigated.
804	Not Detected	This outfall had no flow during the IDDE sampling and no flow during dry weather for the TMDL sampling. Partial submersion does not warrant identification as a priority outfall. It is recommended that the watershed draining to this outfall is investigated.
815	Not Detected	This outfall had no flow during the IDDE sampling and no flow during dry weather for the TMDL sampling. There was no bacteria detected during wet weather sampling during the TMDL study. It is recommended that the watershed draining to this outfall is investigated.

For the outfalls that remain on the priority list (outfalls #231, 242, 243, 258, and 704) the following next steps should be taken as described in *The City of Woonsocket Storm Water Management Plan*:

1. Delineate the drainage area of each outfall with a dry-weather flow component to determine the extent of potential sources. This could be done by two methods.

- Utilize TV inspection to identify sources of the dry-weather flows. This inspection could identify the extent of the system where there is a dry-weather flow component and identify connections to the storm sewer that are contributing dry-weather flow.
 - Inspect the drainage system, structure by structure, to determine the extent of the system where there is a dry-weather flow component. At this time, the system and its connections where a dry-weather flow component was observed, should be mapped, or sketched a minimum. This should be the first task completed as it will limit the extent of the investigation.
2. Inventory the drainage area of each outfall of concern to evaluate the locations of potential pollutant sources. This will consist of reviewing the City's GIS database, land use and street maps to identify potential pollutant sources in the drainage area. In addition, water quality data from the outfall of concern should be reviewed to determine what the potential sources may be.
 3. Conduct additional "targeted" wet or dry-weather sampling at selected locations down-gradient of suspected pollutant sources to "bracket" sources of pollutants in the system. Based on experience with past projects, this effort will be able to specifically identify portions of the storm sewer system where illicit discharges enter the system.
 4. Conduct detailed field inventory. Field inventories should be performed on foot and via windshield surveys, beginning at the point discharge, and following the bracketed drainage system up-gradient. The purpose of the field inventories is to further define what the potential source(s) may be.

Conduct Dye testing to pinpoint a specific discharge. This would require access into buildings and inserting dye at all potential illicit discharges which will require the field staff to be thorough. Permission would be required to enter businesses.
 5. Eliminate the illicit discharge once found.
 6. Confirm elimination of illicit discharges by collecting appropriate confirmation samples. This could either be done at the outfall or just downstream of the eliminated discharge.

2.4.2 RIPDES Sources

Regarding "RIPDES sources," Section 5.8.1.1 of the Blackstone River Watershed TMDL states:

The allocations for the Woonsocket WWTF are the same in dry or wet weather and, consistent with EPA policy, are set to meet the bacteria standards at the point of discharge. Since Rhode Island adopted recreational enterococci criteria in 2009, the Woonsocket WWTF RIPDES permit (which expires in October 2013) will be revised consistent with this wasteload allocation when it is reissued. The Class B/B1 enterococci criterion is a geometric mean concentration of 54 colonies per 100 mL...While the re-issued permit will not include limits for fecal coliform, the plant will be required to continue its monitoring of fecal coliform.

2.4.3 Combined Sewer Overflow (CSO)

As noted in *Section 2.3.3* none of the known CSOs mentioned in the Blackstone River Watershed TMDL are discharging from the City of Woonsocket, therefore no action is required.

2.4.4 Domestic Animal and Vermin Waste

Page 114 of the Blackstone River Watershed TMDL states:

Municipalities' education and outreach programs should highlight the importance of picking up after pets and not feeding birds. Pet wastes should be disposed of away from any waterway or stormwater system that discharges to the study area. The cities and towns in the Blackstone Watershed should work with volunteers to map locations where pet waste is a significant and a chronic problem. This work should be incorporated into the municipalities' Phase II plans and should result in an evaluation of strategies to reduce the impact of pet waste on water quality. This may include installing signage, providing pet waste receptacles or pet waste digester systems in high-use areas, enacting ordinances requiring clean-up of pet waste, and focusing educational and outreach programs in problem areas.

Towns and residents can take several measures to minimize bird-related impacts. They can allow tall, coarse vegetation to grow in areas along the shores of the Blackstone River that are frequented by waterfowl. Waterfowl, especially grazers like geese, prefer easy access to the water. Maintaining an uncut vegetated buffer along the shore will make the habitat less desirable to geese and encourage migration. With few exceptions, Part XIV, Section 14.13 of Rhode Island's Hunting Regulations prohibits feeding wild waterfowl at any time in the state of Rhode Island (2009a). Educational programs should emphasize that feeding waterfowl, such as ducks, geese, and swans, contributes to water quality impairments in the Blackstone Watershed and can harm human health and the environment.

2.4.5 Illicit Sources

As mentioned in *Section 2.3.5* a few stormwater discharges were the only noted illicit source in the City of Woonsocket. Recommendations for monitoring these discharges can be found in *Section 2.4.1*.

2.4.6 Failing Septic Systems

As noted in *Section 2.3.6* the City of Woonsocket is sewerage; although, there were a few ISDS applications and ISDS notice of violations between 2005 and 2009 in the City of Woonsocket.

Page 98 of the Blackstone River Watershed TMDL states: "An educational campaign targeted to residential land uses should include activities that residents can take to minimize water quality and water

quantity impacts. Measures that can reduce bacteria contamination include proper septic system maintenance...”

2.4.7 Sediment Resuspension and Embankment Sloughing

As noted in *Section 2.3.7* sediment resuspension and embankment sloughing is not a source of concern after the river crosses through the City of Woonsocket.

2.4.8 Waste Sources

As stated in *Section 2.3.8* there are many cleanup sites in all portions of the Blackstone River. Continuing cleanup efforts to address waste management should be made to reduce the potential of contaminating the Blackstone River. Voluntary river cleanups should be organized to promote community recognition of the issue and healthy waste disposal practices. Additionally enforcing the existing dumping prohibitions will likely reduce potential contamination due to waste sources.

2.4.9 Massachusetts

This potential source is not a source that can be managed by the City of Woonsocket.

2.4.10 Branch River

As stated in *Section 2.3.10* the Branch River is a known source of lead and pathogens to the Blackstone River. RIDEM is evaluating the sources and needs for reducing these loads. The TMDL is scheduled to be completed by 2020. It is suggested that the area downstream of the Branch River is paid less attention until more is known about the sources contributing from the Branch River. Sources on the Branch River can be paid more attention immediately.

2.5 Identifying Pollution Sources to Waters with Finalized TMDLs

The Blackstone River Watershed TMDL points to stormwater as the most likely source of fecal coliform and dissolved metals to the waterbody within the City of Woonsocket. It is noted, however, that the general level of investigations conducted to this point do not support determination of relative level of contribution from municipal, State (RIDOT) and private sources; or even whether sources have been definitively identified. Prior to the planning and implementation of BMPs and expenditure of significant money and effort, it is recommended that the current understanding of the sources contributing to Woonsocket reaches of the Blackstone River be further refined. *Table 8*, below, provides a breakdown of available methods to determine the nature and extent of pollution contribution by suspected source.

Table 8
Suspected Sources and
Methods to Determine Level of Contribution

Source	Method ^a
Stormwater	<ul style="list-style-type: none"> Wet-weather sampling Modeling calibrated with limited sampling
Wastewater	<ul style="list-style-type: none"> IDDE (e.g., dry-weather surveys) Presence of signature pollutants (e.g., bacteria, surfactants, ammonia, DNA) OWTS permit/violation locations Groundwater studies (to identify areas where exfiltrating wastewater from leaky sewer pipes may be contaminating storm drains)
Domestic Animal and Vermin Waste	<ul style="list-style-type: none"> Direct observation Limited DNA sampling for presence of nonhuman sources Presence of signature pollutants (e.g., fecal coliform, ammonia, and surfactants) to differentiate human/nonhuman sources

Notes:

a The methods in this column are general methods, some of which have already been used to narrow down sources in the subject areas.

Storm Water

To better ascertain the nature and extent of storm water impacts on water quality within the Blackstone River, the City of Woonsocket anticipates continuing monitoring the outfalls listed as potential outfalls of concern in *Section 2.4.1* of this document. It is envisioned that such an approach will refine the City's strategy regarding storm water sources of contamination, allowing for more targeted selection and siting of BMPs.

Wastewater

It has been determined that in the City of Woonsocket, wastewater is not a source of concern due to the permitting requirements of the Woonsocket WWTF and presence of a municipal sewer system. No further source identification is proposed under this plan.

Domestic Animal and Vermin Waste

Although waste from waterfowl and domestic pets is a very tangible source of pollution to the Blackstone River, no specific reaches, ponds or riverfront areas within the City of Woonsocket are cited in the TMDL as locations where animal waste is deemed to be a concern. The Town will continue in to comply with the six minimum measures (i.e., education/outreach and signage) to encourage proper pet waste management and discourage the feeding of waterfowl (see *Section 4* below).

3 Selection of Structural BMPs to Address the TMDL

3.1 Identify Remaining Discharges

As previously noted, the City of Woonsocket has completed the outfall mapping requirement as part of the RIPDES Phase II Program for Small MS4s. The City expects that all municipally owned storm water outfalls have been identified; however, it is possible that unidentified discharges exist. As needed the City will work to identify, survey, and document any previously unidentified outfalls discharging to the Blackstone River (including source and ownership).

3.2 Process for Defining Catchments

The City has already mapped its outfalls and catch basins. A copy of the City of Woonsocket outfall map that was developed for the Dry Weather Sampling program in 2006 is in *Appendix A*. If needed, the City will define the drainage areas of outfalls of concern using available topographical information (including USGS maps). The Blackstone Rivers will be the focus of the SWMPP for future implementation of BMPs.

3.3 Process for Identifying Interconnections

The City of Woonsocket has geolocated its catch basins and mapped its stormwater outfalls. The City cleans and inspects its catch basins annually. To date, no interconnections have been identified; however, if future investigatory work (e.g., catch basin inspections) reveals previously unidentified interconnections, the City will add such connections to its drainage system data.

3.4 Identify Potential Structural BMPs

This section of the plan discusses a process for tailoring types and locations of structural BMPs. Although the IDDE program was completed, it is recommended that more sampling occur at those outfalls identified as priority outfalls in *Section 2.4.1* occur before implementation of structural BMPs. This is to allow for more targeted and successful BMP implementation.

- Pollutants of concern.
 - The pollutant of concern in the Woonsocket reach of the Blackstone River has been identified in the Blackstone River Watershed TMDL as bacteria and dissolved metals.
- Locations
 - BMP locations should be identified pursuant to the results of any future modeling and water quality data as appropriate. It is suspected that BMPs will be sited in the catchments draining to the priority outfalls.
- BMPs
 - Structural BMPs that target bacteria include:

- Gravel wet vegetated treatment systems
- Infiltration practices (infiltration trenches, sub-surface chambers and dry wells)
- Permeable pavement
- Filtration practices (sand filters, organic filters, and bioretention basins)
- Structural BMPs that target dissolved metals include:
 - Infiltration practices (infiltration trenches, sub-surface chambers and dry wells)
 - Permeable pavement
 - Filtration practices (sand filters, organic filters, and bioretention basins)
 - Open channel systems (dry swales and wet swales)

4 Revisions to the Six Minimum Measures in North Providence's SWMPP

4.1 Public Education and Outreach

Certain actions by the general public may have a direct and adverse effect on water quality (e.g., illicit dumping, illicit discharging, improper management of pet feces, etc.). This SWMPP revision includes implementation of several general measures to address the pollutants of concern for the Blackstone River.

The City's 2004 SWMPP provides detailed information on the public education and outreach measures that the City will implement. As recommended in the TMDL, the City will focus its efforts on proper septic system maintenance, proper pet waste management, discouragement of feeding waterfowl and waste management. The City will continue to work with the University of Rhode Island Cooperative Extension, Nonpoint Education for Municipal Officials (NEMO) as well as neighborhood associations and other local groups to incorporate public education and outreach materials into the City's storm water program. To help address illegal dumping, these efforts will include continuing to sponsor and assist with Earth Day Cleanups (distributing flyers, providing trash removal, etc.) The City will also continue to disseminate fact sheets to inform residents of recycling, electronic waste disposal, and best management practices for storm water runoff quality (pet waste clean-up, use of fertilizers, car washing, low-impact development), employing NEMO-developed materials as appropriate.

4.2 Public Involvement/Participation

Studies show that stewardship messages alter behavior most effectively when delivered by peers. Public participation (i.e., volunteerism) will encourage behavior that will lead to better water quality in the City's waterbodies. Individuals who help to deliver these messages tend to internalize them, which also results in behavior change.

The City intends to maintain public involvement through the Engineering, Planning, and Public Works Departments. Through coordination with local civic groups and the Mayor's office the town will continue to maintain public participation on stormwater management activities related to public participation, education and outreach.

Several examples of public participation activities are listed in the City's 2004 SWMPP. DEM, RIDOT, and URI are developing watershed protection programs through the Storm Water Outreach Program. Implementation of these programs will be tailored for use by the City.

4.3 Illicit Discharge Detection and Elimination

As previously noted, the City has recently completed the required dry-weather IDDE surveys and has reported the results to the RIPDES permitting program. Through dry-weather surveys, each outfall is inspected, and if flowing, sampled for the presence of bacteria, ammonia, and surfactants. Of the 285 outfalls located, 42 were found to be discharging and only 40 had sufficient flow for collection of a sample. These outfalls are not necessary illicit but were identified as potentially illicit.

The City included seven next steps to investigate the potential illicit discharges found. These are listed below.

- 1) Delineate the drainage area of each outfall with a dry-weather flow component
- 2) Inventory the drainage area of each outfall of concern to evaluate the locations of potential pollutant sources
- 3) Conduct additional targeted wet and dry-weather sampling at selected locations downstream of outfalls of concern
- 4) Conduct detailed field inventories to further define the potential sources.
- 5) Conduct site investigations at each suspected source.
- 6) Eliminate the illicit discharge once found.
- 7) Confirm elimination of illicit discharges by collecting appropriate samples.

4.4 Construction and Post Construction Control

The City has completed the required elements pursuant to the Construction Site Storm Water Runoff Control measure, and the 2004 SWMPP describes the Town's implementation strategy.

The following section has been adapted from the Blackstone River Watershed TMDL pages 100-101.

New land development and redevelopment projects in the City will employ stormwater controls to prevent any net increase in bacteria and trace metals pollution to the waterbodies in the Blackstone River. Waterbodies of specific importance within the watershed include the Blackstone River mainstem (RI0001003R-01A) for pathogens, cadmium and lead; the Blackstone River mainstem (RI0001003R-01B) for pathogens, cadmium and lead; the Cherry Brook (RI0001003R-02) for pathogens and copper; the Mill River (RI0001003R-03) for pathogens and Peters River (RI0001003R-04) for pathogens and copper.

Woonsocket will consider expanding existing ordinances to include projects that disturb less than one acre (as the existing ordinance only requires establishing post construction stormwater controls for sites disturbing one or more acres.)

4.5 Pollution Prevention/Good Housekeeping

The City of Woonsocket has completed the elements required pursuant to the pollution prevention/good housekeeping minimum measure. This includes annual catch basin inspection and cleaning. Any required repairs or modifications to storm water collection and conveyance systems identified through these inspections are undertaken by the City DPW, which will continue to perform such corrective measures as required. Inspections of facilities owned and operated by the City are conducted on a regular basis; to date these inspections have been appropriate and effective in preventing pollution from potential sources from entering the municipal drainage systems.

5 Measureable Goals for Implementation

The City will complete the measures identified in *Section 4.3* as part of their IDDE program in order to determine the locations of potential sources within the watershed. Further testing should also be done at those outfalls identified in *Section 2.4.1*. After additional sampling efforts have been completed, structural BMPs that treat the known pollutants at each source should be designed and constructed. Suggested BMPs are listed in *Section 3.4*.

The City also intends to introduce a post-construction storm water management ordinance. The post-construction storm water management ordinance includes a land-disturbance threshold of 1,000 square feet and addresses both low-impact development and redevelopment projects. Adoption of the ordinance is contingent upon acceptance by City Council.

It is expected that the City can apply for a 319 Nonpoint Source Pollution Abatement grant application to DEM to address the feasibility of conducting low-impact development retrofits in the Blackstone River.

6 Program Evaluation

6.1 Revisions to the Storm Water Management Program

Regulated municipalities must annually evaluate the compliance of its storm water management program with the conditions of the general permit. The evaluation must consider the appropriateness of the selected BMPs in efforts towards achieving the defined measurable goals. The Town will report on its efforts to achieve measurable goals discussed in *Section 5.0* of this SWMPP revision as part of its annual report.

6.2 Ongoing Projects

Currently, the City of Woonsocket is working on developing project plans to dredge accumulated sediment from a recreational pond. The sediment is understood to have been deposited into the pond via storm drains that deposit directly into the pond. Part of the project plan is to determine where the water carrying the sediment is coming from. Additional goals of this project include upgrading the amenities of the park surrounding the waterbody.

Appendix A

Outfall Map

**City of Woonsocket
Dry Weather Sampling
July 1-October 31, 2006**

