RHODE ISLAND DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
Office of Water Resources

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Date Received _____

RIPDES SMALL MS4 ANNUAL REPORT

GENERAL INFORMATION PAGE

RIPDES PERMIT #RIR040 0021_____

REPORTING PERIOD: ✓**YEAR 11**
Jan 2014-Dec 2014

OPERATOR OF MS4

Name: **Town of Lincoln**			
Mailing Address: **100 Old River Road**			
City: **Lincoln**	State: **RI**	Zip: **02865**	Phone: **(401) 333-8415**
Contact Person: **Leslie C. Quish, PE**	Title: **Town Engineer**		
	Email: **lquish@lincolnri.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: **Same as Operator**			
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 **T. Joseph Almond**

Print Title **Town Administrator**

Signature _____ Date _____

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.)

IV.B.1.b.1	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 Town hosts a website focused on our Storm Water Management Program which the Town intends to update during 2015 with the rollout of a new Town website. The following brochures are available in a central location at Town Hall. These brochures, copies of which are provided in Appendix A, will be added to the Town's website in the upcoming year:

- ***A Homeowner's Guide to Protecting Water Quality in the Blackstone River*** **by the Blackstone River Coalition.**
- ***10 Simple Things You Can Do to Help Clean Rhode Island Waters*** **by the RIDEM.**
- ***5 Reasons Why Feeding Waterfowl is Harmful*** **by the RIDEM.**
- ***How to Dispose of Medicine*** **by the EPA**

The Town of Lincoln hosted two electronic waste collections, one hazardous waste collection, and two Drug Take Back collections during 2014. The Town also collects used motor oil during hours of operation. At these events, the Town collected approximately 43,750 pounds of electronic waste, 2,500 pounds of hazardous waste, 1575 gallons of used motor oil, and approximately 125 pounds of medicine. ***A Homeowner's Guide to Protecting Water Quality in the Blackstone River*** **was handed out at one of the electronic waste collections. Informational packages, which included how to properly dispose of medicine, were provided at the Drug Take Back collections.**

Local students were given a tour of Town Hall and educated on the Town's recycling program with a focus on the impacts recycling and proper disposal of trash and litter has on our environment and water bodies.

IV.B.1.b.2	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.

This year, the Town made an improved effort by providing a stormwater brochure at one of the electronic waste collections and included information on how to dispose of medicine at the Drug Take Back collections. The Town also relocated the brochures mentioned in Section IV.B.1.b.1 to a more central location in Town Hall in hopes of reaching more residents. The Town intends to update the stormwater website in the upcoming permit year to provide reference documents for residents.

Additional Measurable Goals and Activities: Please list all stormwater training attended by your staff during the 2014 calendar year and list the name(s) and municipal position of all staff who attended the training.

Trainings:

Attending name of staff and title: _____
Attending name of staff and title: _____

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.)**	
IV.B.2.b.2.ii	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 targeted audiences for public involvement are primarily town residents and business owners. Residents, primarily high school students, volunteer to assist with the electronic and hazardous waste collections. **The Town has an active recycling program run by the Facilities Department. Beginning in 2009, the Town implemented a "No Bin, No Barrel" program where trash is only picked up if recyclables are placed for pickup. Two electronic waste collections, one hazardous waste collection, and two Drug Take Back collections were conducted during 2014 at which applicable informational brochures were handed out.** **The Town Engineer is a member of the Technical Review Committee and reviews projects to ensure new- and re-development projects include appropriate best management practices for stormwater and erosion and sediment control.** **The responsible parties for the above mentioned activities include the Facilities Director, Public Works Director, Town Engineer, and the Technical Review Committee.**	
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

Date of Public Notice: February 26, 2015	How public was notified: The Valley Breeze and Town Website.
Was public meeting held? YES NO Date:	Where:
Summary of public comments received:	
Planned responses or changes to the program:	

MINIMUM CONTROL MEASURE #3:
ILLICIT 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.)**	
IV.B.3.b.1:	Indicate if the outfall map was not completed, 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.) **Date of Completion: 2013**
The Town conducted an outfall inventory and dry weather survey in 2013 during which 139 outfalls were located with a handheld GPS unit. An Outfall Map was created using GIS software, a copy of which was previously provided to the RIDEM. No changes were made to the Excel file documenting the outfalls since the file was submitted to RIDEM in the 2013 Annual Report.	
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 2014 calendar year.
All outfalls located during the 2013 outfall inventory were located with a handheld GPS device and added to the Town's GIS database.	
IV.B.3.b.3	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.
Catch basins, manholes, and outfalls were previously located with handheld GPS equipment. A GIS based map depicting the locations of catch basins, manholes, and outfalls was provided with the 2013 Annual Report. This activity was not at the result of tracing illicit discharges but has aided the Town with assuring each drainage structure is maintained.	
IV.B.3.b.4	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. **Date of Adoption: 1985** If the Ordinance was amended in 2014, please indicate why changes were necessary.
Currently, the existing Sewer Ordinance, which was previously provided to the RIDEM, covers the prevention and enforcement of illicit connections. A new Prohibition of Illicit Discharges and Illegal Connections Ordinance was finalized in 2014 and is pending review and approval from the Town's Ordinance Committee. Once reviewed and recommended by the Ordinance Committee, the ordinance must be approved by the Town Council. It is expected that the ordinance will be adopted in the upcoming permit year. The new ordinance is based on the RIDEM's Model IDDE Ordinance for Municipalities. A copy of the draft ordinance was provided in the 2013 Annual Report.	
IV.B.3.b.5.ii, iii, iv, & v	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.

If an illicit discharge is suspected, the complaint would be forwarded to the Town Engineer and Director of Public Works for field inspection. Depending on the suspected connection, the Town's Sewer Department would assist in the review. As outlined in the new *Prohibition of Illicit Discharges and Illegal Connections Ordinance*, to be adopted in early 2015, if an illicit connection is found, the owner of the property would be given a written notice of the violation with direction to eliminate the connection by a specific date or be subject to a fine to cover administration and remediation costs. No complaints were received and no illicit discharges were detected in 2014.	
IV.B.3.b.5.vi	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.
Town catch basins are inspected and cleaned at least once per year by the Public Works Department. The crew performing the work notifies the Public Works Director if discharges where observed. During 2014, there were no illegal discharges identified in any of the Town's drainage structures. **Between July 2011 and September 2013, a consulting engineering firm conducted over 106,000 linear feet of smoke testing and 2,400 sanitary manhole inspections to identify connections between the Town's sewer and storm drainage systems. No connections between the sanitary system and storm drainage systems were detected.**	
IV.B.3.b.5.vii	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.** **Date of Completion: 2013 (previously submitted in the 2013 Annual Report)**
The dry weather survey was completed in 2013 during low ground water conditions. Dry weather flows previously observed and sampled were determined to be irrigation water, natural water, or tap water. Further sampling is not required.	
IV.B.3.b.7	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.
No illicit discharges have been detected involving interconnected MS4's. Should one be detected or reported, the Stormwater Coordinator for the MS4 will be contacted.	
IV.B.3.b.8	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.
There have been no referrals to RIDEM for non-storm water discharges this year.	

IV.B.3.b.9	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.
As previously mentioned, the Town hosted two electronic waste collections, one hazardous waste collection, and two "Drug Take Back" collections during 2014 to promote proper disposal of waste and pollutants. During the electronic waste collections, *A Homeowner's Guide to Protecting Water Quality in the Blackstone River* was provided to participants. Information packages, which included how to properly dispose of medicine, were provided at the Drug Take Back collection. Responsible parties include the Facilities Director, Public Works Director, and Town Engineer.	
Additional Measurable Goals and Activities	

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

# of Illicit Discharges Identified in 2014: **0**	# of Illicit Discharges Tracked in 2014: **0**
# of Illicit Discharges Eliminated in 2014: **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): **1**	Total # of Illicit Discharges remaining unresolved at the end of 2014: **0**
Summary of Enforcement Actions:	
Extent to which the MS4 system has been mapped: **99% of the Town's system (catch basins, manholes, and outfalls) are on a GIS based stormwater map. The Town will continue to map the MS4 system as drainage components are discovered or constructed.** Total # of Outfalls Identified and Mapped to date: **139**	

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:
None Known.					

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.)

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: 2004** If the Ordinance was amended in 2014, 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 Soil Erosion and Sedimentation Control Ordinance was updated and is pending review and approval from the Town's Ordinance Committee. The purpose of the revision was to incorporate the recommendations in *Updating Municipal Model Erosion and Sediment Controls To Meet Phase II MS4 Permit Requirements August 2009* by the Southern Rhode Island Conservation District and the URI Cooperative Extension NEMO Program. Once reviewed and recommended by the Ordinance Committee, the ordinance must be approved by the Town Council. It is expected that the ordinance will be adopted in 2015. A copy of the draft ordinance was provided in the 2013 Annual Report.

IV.B.4.b.6	Describe actions taken as a result of receipt and consideration of information submitted by the public.

No information was submitted this year.

IV.B.4.b.8	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.

No referrals were submitted to the State. Complaints or comments are received by the Engineering, Building, and Highway Departments. All comments received are promptly investigated with corrective action requirements identified and discussed with the property owner or developer. The Assistant Highway Supervisor visits active construction sites on a weekly basis (minimum) and conducts inspections of the erosion and sedimentation controls. Furthermore, excavations are prohibited in Town until erosion controls are installed and approved by the Assistant Highway Supervisor. As a result, the majority of active construction sites are in stable condition throughout construction. When non-compliances issues are observed, property owners or developers are promptly notified. During 2014, all observed issues were satisfactorily and promptly addressed by the property owner or developer and referrals to the State were not necessary. One complaint for a construction site was received during a heavy rainstorm in 2014. The property owner/developer was contacted immediately and the issue was resolved within 24 hours.

Additional Measurable Goals and Activities

SECTION II. A - Plan and SWPPP/SESC Plan Reviews during Year 11 (2014), 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 Reviews completed:**1 new project**
Summary of Reviews and Findings, include an evaluation of the effectiveness of the program. Identify person(s) /Department and/or parties responsible for the implementation of this requirement. **All land disturbances greater than 1 acre are required to submit a SWPPP (SESC) conforming to RIDPES requirements. Prior to excavations on the site, the erosion controls must be inspected and approved by the Town Assistant Highway Supervisor or the Town Engineer. All construction projects are visited and inspected on at least a weekly basis, including a final inspection at the completion of construction to ensure site stabilization. This has proven to be extremely effective as contractors are aware of the thoroughness of the Town's review and inspections.**

SECTION II.B - Erosion and Sediment Control Inspections during Year 11 (2014), 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).

# of Site Inspections: **Numerous**	# of Complaints Received:1
# of Violations Issued: 0	# of Unresolved Violations Referred to RIDEM: 0
Summary of Enforcement Actions, include an evaluation of the effectiveness of the program. Identify person(s) /Department and/or parties responsible for the implementation of this requirement. **All projects with land disturbances are visited at least once per week by the Town Assistant Highway Supervisor. This includes the subdivision referenced above in Part IV.B.4.II.B, all residential buildings under construction, and one condominium project that has been under construction since 2013. Prior to excavations in Town, the erosion controls must be inspected and approved by the Town Assistant Highway Supervisor or the Town Engineer. All construction projects are visited and inspected at least once per week and at the completion of construction to ensure site stabilization. This has proven to be extremely effective as contractors are aware of the thoroughness of the Town's review and the frequency of visits. One complaint for a construction site was received during a heavy rainstorm in 2014. The property owner/developer was contacted immediately and the issue was resolved within 24 hours.**	

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.)

IV.B.5.b.5	Describe activities and actions taken to coordinate with existing State programs requiring post-construction stormwater management.

All land development projects, subdivisions, and single family house building permit applications are required to provide post-construction stormwater controls. Currently, post-construction stormwater control requirements are provided in the Land Development and Subdivision Regulations and the Soil Erosion and Sedimentation Ordinance. A new Post Construction Stormwater Control Ordinance should be adopted during the upcoming permit year. The Town Engineer reviews plans to ensure compliance to applicable requirements. Developers of single family dwellings are encouraged to use the State of Rhode Island Stormwater Management Guidance for Individual Single-Family Residential Lot Development to aid in the design of the stormwater controls.

IV.B.5.b.6	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).

In 2014, the Town of Lincoln did not refer any new discharges of stormwater associated with industrial activities to the State.

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: 2004** If the Ordinance was amended in 2014, 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.

Currently, post-construction stormwater control requirements are provided in the Land Development and Subdivision Regulations and the Soil Erosion and Sedimentation Ordinance. A Post Construction Stormwater Control Ordinance was created which is in the process of being finalized. The Ordinance should be adopted during the upcoming permit year. The new ordinance is based on the RIDEM's Model Stormwater Control Ordinance and incorporates requirements of the 2010 RI Stormwater Design and Installation Manual.

IV.B.5.b.12	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.

The existing stormwater structural BMPs are listed in the spreadsheet submitted to RIDEM with a previous annual report. The stormwater BMP's are inspected each year. Recommended operation and maintenance actions are sent to the Highway Division. During 2014, all stormwater basins were inspected, and maintained as needed, by the DPW.

Additional Measurable Goals and Activities

SECTION II.A. - Plan and SWPPP/SESC Plan Reviews during Year 11 (2014), 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).

# of Post-Construction Reviews completed: **20**
Summary of Reviews and Finding, include an evaluation of the effectiveness of the program. Identify person(s) /Department and/or parties responsible for the implementation of this requirement. **All BMPs are reviewed by the Town Engineer during the design/permitting period, at least once during construction, and again prior to issuing a Certificate of Occupancy. BMPs are also reviewed prior to releasing bonds for land development projects and subdivisions, and/or prior to acceptance of new roadways. These procedures have proven to be effective.**

SECTION II.B. - Post Construction Inspections during Year 11 (2014), 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).

# of Site Inspections: **15**	# of Complaints Received: **0**
# of Violations Issued: **0**	# of Unresolved Violations Referred to RIDEM: **0**
Summary of Enforcement Actions: **All BMPs are inspected by the Town Engineer or Assistant Highway Supervisor prior to issuing Certificate of Occupancies. BMPs are also inspected prior to releasing bonds for land development projects and subdivisions, and/or prior to accepting new roadways. These procedures have proven to be effective.**	

SECTION II.C. - Post Construction Inspections during Year 11 (2014), 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:**65±**	# of Complaints Received:**0**
# of Violations Issued:**0**	# of Unresolved Violations Referred to RIDEM:**0**

Summary of Activities and Enforcement Actions. Evaluate the effectiveness of the Program in minimizing water quality impacts. Identify person(s) /Department and/or parties responsible for the implementation of this requirement.

The Town requires developers prepare and record an Operations and Maintenance Agreement for all new stormwater treatment systems as the Town assumes no responsibility for privately owned and maintained structural BMPs. If the Town discovers a BMP in need of maintenance, the Town will contact the person for the deficient site. During 2014, the Town contacted one property owner regarding required maintenance for a stormwater basin. The property owner responded promptly to the maintenance needs. No violations were issued.

All known, Town-owned, stormwater basins were inspected, and maintained as necessary, in 2014.

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.)**	
IV.B.6.b.1.i	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.
The Town of Lincoln owns and operates multiple structural BMPs connected to the Town's MS4; the vast majority of which are detention basins, catch basis, and manholes. The current list of Town detention basins is provided in Section IIA of Minimum Control Measure 6 of this Report. Catch basins and manholes have been located with GPS equipment and are depicted on the Stormwater Map provided with the 2013 Annual Report.	
IV.B.6.b.1.ii	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.
All catch basins are inspected and cleaned on an annual basis. As a result of our yearly catch basin inspections, 12 catch basins were repaired by the Town DPW. Additionally, the catch basins at the following intersections were repaired during our annual paving project due to poor conditions of the existing structures: • **Drop Inlet at the intersection of Progress Street and Hill Avenue** • **Two drop inlets and one catch basin at or near the intersection of Westwood Road, Parker Street, and Wood Road** • **One drop inlet and pipe replacement at the intersection of Parker Street and Fairlawn Way** **All Town owned stormwater basins were inspected and maintained as needed by the Highway Department in 2014.**	
IV.B.6.b.1.iii	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. Total # of CBs within regulated area (including SRPW and TMDL areas): **1280** Total # of CBs inspected in 2014: **1000** Total # of CBs cleaned in 2014: **500**
The majority of Town catch basins were inspected, and cleaned if necessary, by the DPW staff in 2014. Due to staffing limitations in 2014, not all structures were inspected.	
IV.B.6.b.1.iv	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.

The vast majority of Town streets have stabilized shoulders due to the presence of curb, sidewalk, and/or loam and seed. When areas of erosion are identified, or reported, the Town Engineer or Public Works Director investigates the issue to identify the solution. DPW staff is notified to address the issue, most commonly done by the installation of berms, promptly. Roadside erosion is not a significant issue and this method is appropriate and effective. During Year 11, berm was installed along a short section of Angell Road.	
IV.B.6.b.1.v	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.
The outfall data collected during the 2013 outfall inventory was analyzed and evaluated during 2014 to establish a prioritized list of outfalls requiring maintenance and/or repair work. Each outfall was evaluated on a scale of 1 to 5 (with 1 equating to great condition and 5 equating to poor condition). The results of the outfall evaluation are provided in Appendix B. Two of the outfalls in the poorest condition were repaired in 2014. The prioritized list of outfalls will be given to the Town DPW staff so that repairs and maintenance can commence. Town staff will begin with the outfalls in the poorest of condition and progress through the list until all outfalls requiring repair/maintenance are acceptable. This task is expected to take a few years.	
IV.B.6.b.1.vi	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. Total roadway miles within regulated area (including SRPW and TMDL areas): **100 Miles** Total roadway miles that were swept in 2014: **130 Miles (approximately)**
The Town of Lincoln has had an aggressive road sweeping program for many years. Every Town road in Lincoln was swept once this year with the more heavily sanded roads swept twice. The sweepings are then disposed of properly through Rhode Island Resource Recovery Corporation. This has proven to be effective as the sedimentation within catch basins has decreased and therefore decreases the amount of sedimentation that reaches the outfalls. During 2014, the Town applied for a Bay and Watershed Restoration Grant from the RIDEM for the purchase of new sweeper. The Town intends to purchase a new sweeper in 2015 if selected as grant recipients.	
IV.B.6.b.1.vii	Describe activities and actions taken for controls to reduce floatables and other pollutants from the MS4. Evaluate appropriateness and effectiveness of this requirement.
The street sweeping and catch basin cleaning described herein reduce floatables which would discharge into the MS4. Trash and recyclables are picked up on a weekly basis, including the public trash cans available at Town facilities and parks. Further reduction of floatables is managed by the Facilities Director who coordinates litter pickups with different organization throughout the Town and coordinated two electronic waste collections and one hazardous waste collection during 2014. The Highway Garage collects used motor oil during all hours of operation. Additionally, a new Illicit Discharge Ordinance is in the process of being adopted which prohibits non-stormwater discharges to the Town's drainage system, requires proper spill notification, and provides the town with enforcement capabilities. These measures are appropriate and effective.	
IV.B.6.b.1.viii	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.
Recyclables are sorted out and are properly disposed of at Rhode Island Resource Recovery Corporation (RIRRC). Sediments are collected and disposed at the RIRRC. Street sweepings are also disposed of at the RIRRC.	
IV.B.6.b.4 and IV.B.6.b.5	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.
The Highway Supervisor inspects equipment, and processing and material handling areas for pollutant releases multiple times throughout the year. Any observed issues are addressed immediately. Roads are treated with a sand/salt mix (2 parts sand to 1 part salt) during the winter. The road sand/salt mix is stored in a salt barn which reduces the migration of pollutants into adjacent areas. Waste oil is stored in a shed which is maintained on a regular basis. As previously reported, the floor drains have been disconnected from the storm drain system in the front bays of the Highway Garage. The Highway Department staff has been trained on the Town's Storm Water Pollution Prevention Plan.	

IV.B.6.b.6	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.
A SWPPP was previously prepared for the Highway Garage and DPW staff is retrained as needed basis. Operation and maintenance procedures are in place for activities such as vehicle maintenance, material stockpiling and storage, spill prevention and response, and general good housekeeping measures. These measures have proven to be effective.	
IV.B.6.b.7	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.
All Town projects are evaluated for their impacts on water quality. While no applicable projects were constructed during 2014, the Town designed a parking lot expansion at Lincoln Senior Center and incorporated a sand filter designed in accordance with the current edition of the *Rhode Island Stormwater Design and Installation Standards Manual.* The Town expects the parking lot expansion and sand filter to be constructed during 2015.	
Additional Measurable Goals and Activities	

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

BMP ID:	Location:	Name of BMP Owner/Operator:	Description of BMP:
1.	Ann Drive	Town of Lincoln	Detention Basin
2.	Barbette Drive	Town of Lincoln	Detention Basin
3.	Birchwood Estates (Old River Road & Logan Drive)	Town of Lincoln	Detention Basin
4.	Bridle Drive (Jenckes Hill Rd.)	Town of Lincoln	Detention Basin
5.	Butterfly Estates (East Butterfly Way)	Town of Lincoln	Detention Basin
6.	Butterfly Estates (East Butterfly Way)	Town of Lincoln	Detention Basin
7.	Butterfly Estates (East Butterfly Way)	Town of Lincoln	Detention Basin
8.	Butterfly Estates (East Butterfly Way)	Town of Lincoln	Detention Basin
9.	Butterfly Estates (East Butterfly Way)	Town of Lincoln	Detention Basin
10.	Butterfly Estates (East Butterfly Way)	Town of Lincoln	Detention Basin

11.	Carcieri Farm Estates (Riata Drive)	Town of Lincoln	Detention Basin
12.	Cider Mill Lane	Town of Lincoln	Detention Basin
13.	Cider Mill Lane	Town of Lincoln	Detention Basin
14.	Christian Court	Property Owner	Detention Basin
15.	Driftwood Estates (Whalen & Meeting House)	Town of Lincoln	Detention Basin
16.	Ducarl Drive (East)	Town of Lincoln	Detention Basin
17.	Fairoaks III (Fair Oaks Drive)	Town of Lincoln	Detention Basin
18.	Foxwood Drive	Town of Lincoln	Detention Basin
19.	Greenwood Lane	Town of Lincoln	Detention Basin
20.	Heritage View (Mark Dr. & Prov. Town Line)	Town of Lincoln	Detention Basin
21.	Hill Farm Estates (Hill Farm Road)	Town of Lincoln	Detention Basin
22.	Joyce Ann Drive	Town of Lincoln	Detention Basin
23.	Kendall V (Paddock Drive)	Town of Lincoln	Detention Basin
24.	Kendall Estates (Citation Ct.)	Town of Lincoln	Detention Basin
25.	Kendall Estates (Grandstand Drive)	Town of Lincoln	Detention Basin
26.	King Philip Road	Town of Lincoln	Detention Basin
27.	Lantern Brook Drive	Town of Lincoln	Detention Basin
28.	Lantern Brook Drive	Town of Lincoln	Detention Basin
29.	Lincoln Center Blvd. (Rt. 116)	Town of Lincoln	Detention Basin
30.	Lincoln Center Blvd. (Rt. 116) (Blackstone Valley Rd.)	Town of Lincoln	Detention Basin
31.	Lincoln Meadows I	Town of Lincoln	Detention Basin
32.	Lynn Lane	Town of Lincoln	Detention Basin
33.	Maria Street	Town of Lincoln	Detention Basin
34.	Meadow Glen Drive (North)	Town of Lincoln	Detention Basin
35.	Meadow Glen Drive (South)	Town of Lincoln	Detention Basin

36.	Morgan Court	Town of Lincoln	Detention Basin
37.	Oak Hill Estates (Eagle Nest Drive & White Horse Rd.)	Town of Lincoln	Detention Basin
38.	Oak Hill Estates (Eagle Nest Drive)	Town of Lincoln	Detention Basin
39.	Oak Hill Estates (South Eagle Nest & White Horse Rd.)	Town of Lincoln	Detention Basin
40.	Oak Hill Estates (South Eagle Nest Drive)	Town of Lincoln	Detention Basin
41.	Old Jenckes Hill Rd. (Rt. 246)	Town of Lincoln	Detention Basin
42.	Partridge Drive	Town of Lincoln	Detention Basin
43.	Pascale Drive	Town of Lincoln	Detention Basin
44.	Pond View (Graywood Drive)	Town of Lincoln	Detention Basin
45.	Presidential Estates	Property Owner's	Detention Basin
46.	Quality Drive	Town of Lincoln	Detention Basin
47.	Red Brook Crossing	Property Owner's	Detention Basin
48.	Red Brook Crossing (Bridle Drive)	Town of Lincoln	Detention Basin
49.	Red Brook Crossing (Preakness Drive & Rt. 246)	Town of Lincoln	Detention Basin
50.	Red Brook Crossing (Suffolk Way)	Town of Lincoln	Detention Basin
51.	Red Brook Crossing	Town of Lincoln	Detention Basin
52.	Reverie Lane	Property Owner	Detention Basin
53.	Rollingwood Drive	Town of Lincoln	Detention Basin
54.	Sables Way	Property Owner	Detention Basin
55.	Saddle Lane	Town of Lincoln	Detention Basin
56.	Alyssa Lane	Town of Lincoln	Detention Basin
57.	Steeple Lane	Property Owner's	Detention Basin
58.	Stephanie Drive (Manchester Farm Road & Kerry Lane)	Town of Lincoln	Detention Basin
59.	Ashley Drive	Town of Lincoln	Detention Basin
60.	Thornwood Drive	Town of Lincoln	Detention Basin
61.	Winterberry Road	Property Owner's	Detention Basin
62.	Lincoln Senior Center	Town of Lincoln	Detention Basin 1

63.	Lincoln Senior Center	Town of Lincoln	Detention Basin 1
64.	Lincoln Senior Center	Town of Lincoln	Detention Basin 1
65.	Lime Acres Park	Town of Lincoln	Bioretention Basin
66.	Lincoln Senior Center	Town of Lincoln	Sand Filter (to be constructed in 2015)

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:
See Appendix B				

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 Town intends to expand the existing parking lot at the Lincoln Senior Center in 2015. The construction will include a sand filter.

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.

The Town of Lincoln has not received notification from the RIDEM that discharges from our MS4 require storm water controls based on an approved TMDL or other water quality determination during Year 11. However, the Town is aware that the following TMDLs have been approved by the EPA:

- **A TMDL was approved by the EPA for the Blackstone River for pathogens and trace metals impairments. The segment of the Blackstone River within Lincoln (RI0001003R-01A) is specifically impaired for pathogens, cadmium, and lead. The TMDL identifies twelve priority outfalls within the boundaries of the Town of Lincoln and states that the Town of Lincoln is the presumed owner of nine and with either RIDOT or Lincoln the presumed owner of the other three. After an internal review of the locations of the twelve priority outfalls, it appears that the RIDOT is the owner of 9 of the 12 outfalls (440, 438, 437, 435, 448, 431, 446, 428, and 450) and outfalls 410 and 416 are located on private property with no connection to the Town's MS4. The remaining outfall, Outfall 422, is owned by the Town of Lincoln.**
- **A TMDL was approved by the EPA for Scott Pond for Phosphorus and Dissolved Oxygen. The TMDL states that the Blackstone Canal makes up 97% of the external load of phosphorus to Scott Pond and that the discharges from municipal wastewater treatment facilities upstream of the Town of Lincoln have been identified as the primary contributor of eutrophication impacts to the Blackstone River. The TMDL identifies two priority outfalls, one at the northern end of Scott Pond near Front Street and the other at the southern end of Scott Pond near Walker Avenue. After an internal review of the priority outfalls, both outfalls were determined to be RIDOT outfalls as they are located on State Roads. The Town previously treated Scott Pond with copper sulfate, at the recommendation of RIDEM, however that was discontinued when a copper impairment was identified.**

Upon receipt of notification from RIDEM that EPA accepted TMDLs mentioned, the Town of Lincoln will work with the RIDEM to modify our Phase II Stormwater Management Program Plan to incorporate additional measures required.

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.

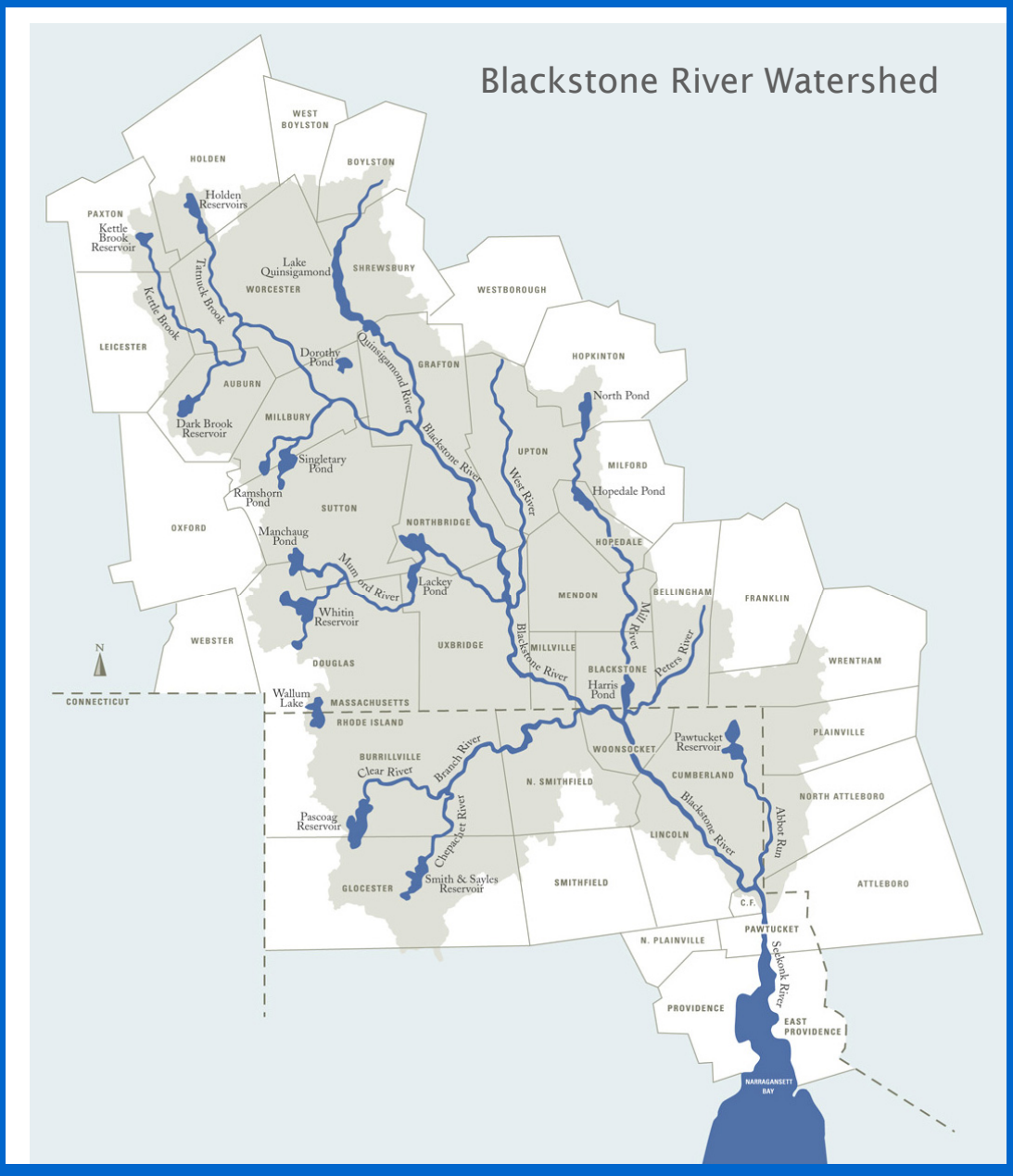
Special Resource Protection Waters

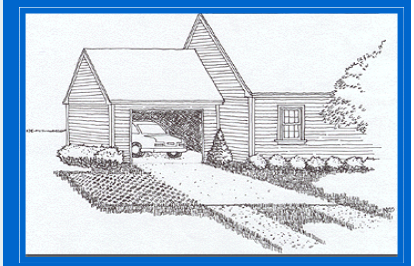
The segment of the Blackstone River located in Lincoln (RI0001003R-01A) is listed as an impaired water body and Special Resource Protection Water with TMDLs scheduled for 2018 and 2022 with the hope that some impairments are eliminated once wastewater treatment facilities are upgraded. Barney Pond is listed as an impaired water body for a TMDL for phosphorus scheduled for 2016.

APPENDIX A

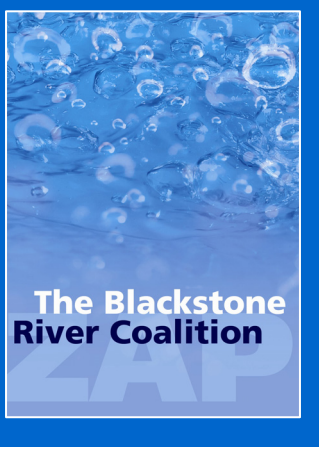
Campaign for a Fishable/Swimmable Blackstone River by 2015

A Homeowner's Guide to Protecting Water Quality in the Blackstone River Watershed

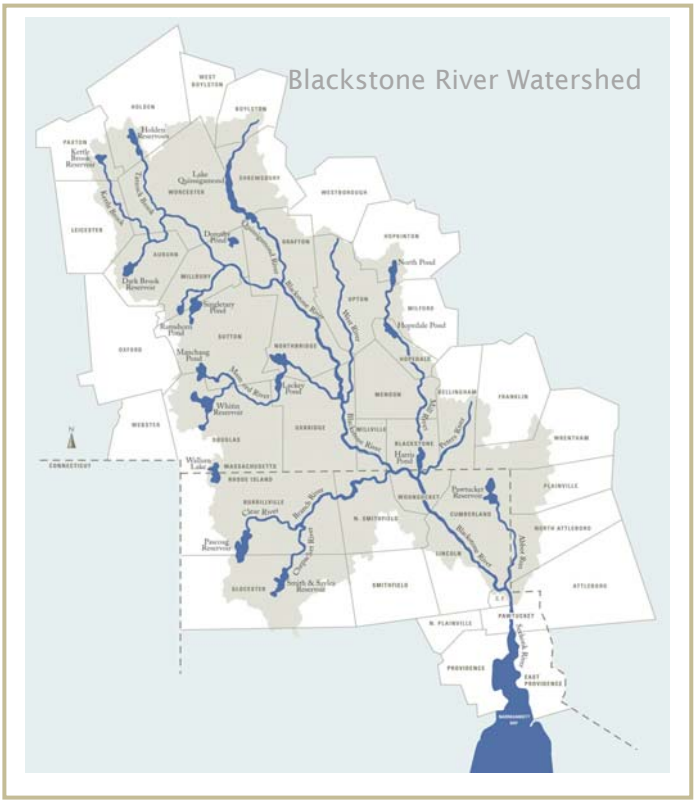




If you live in the shaded area of the map, then you live in the Blackstone River watershed. You can help restore and protect its water quality. Look inside to learn how. A cleaner Blackstone River begins in your own backyard!



A Homeowner's Guide to Protecting Water Quality in the Blackstone Valley



If you live within the shaded area, you live in the Blackstone watershed.

A Cleaner Blackstone River Begins in Your Own Backyard!

Lawns/ Gardens

Car Care

Pet Waste

Clean Dishes/ Clean Streams

Rooftop Runoff

Household Hazardous Waste

Pervious Surfaces

Stream Buffers

THE BLACKSTONE VALLEY is, in fact, a watershed – a drainage basin that includes all the land over which rain and snowmelt flow to the Blackstone River. Reducing polluted runoff, or nonpoint source pollution, in the watershed is the major goal of the Blackstone River Coalition. We're working with homeowners, business owners, developers and local decision makers to all do their part – it's called the "Tackling Stormwater in the Blackstone River Watershed" initiative. Together, we can all help reach the goal of a fishable and swimmable Blackstone River by 2015.

Introduction:

WE DRINK IT, bathe in it, flush it, swim in it and more. Water is an integral part of our every day lives. The water you use to drink, wash, and cook comes from a watershed near your home. Every community, whether it is hilly or flat, urban or rural, is part of a watershed. Ours is the Blackstone River's watershed, with many sub-watersheds for the tributaries that drain to it. Within each watershed, all water drains to the lowest point, carrying with it soil particles, oil, road salt, organic materials, pesticides, and fertilizers.

THE BLACKSTONE AND ITS TRIBUTARIES define our landscapes, yet their beauty hides the fact that beneath the surface, those streams and rivers are not entirely well. Runoff from roads, parking lots, lawns, and farms can carry oil, metals, bacteria, pesticides, and nutrients into streams, making them unhealthy places for critters like fish and aquatic insects to live. High bacterial levels can make it unsafe for humans to swim.

BUT THERE IS GOOD NEWS...we know the prescription for the Blackstone's health, and it starts with us. By each of us developing simple, water-friendly lifestyle practices right at home we can make a huge difference!

What You Can Do….

This guide is designed to help us reduce our impact on the streams and rivers in the Blackstone River watershed. To achieve this we need to develop new yard- and home-care practices that reduce our pollution, storm water volume, and water consumption. To learn how, turn the page.

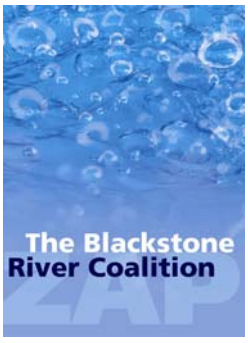
Reducing pollutants: Water running off our lawns, roads, and other surfaces picks up nutrients, bacteria, and chemicals, carries them to stormdrains in the roads, and then deposits them directly into streams in the Blackstone watershed. These pollutants can cause a variety of problems for living things — including humans — that live in or interact with our streams. For example, extra nutrients from fertilizer cause too much algae to grow, which robs the water of oxygen and makes it a bad place for fish, snails, and other stream critters to live. If the stream isn't a healthy habitat for these critters, this in turn affects animals that are higher in the food chain, like mammals and birds.

Reducing storm water volume: Another major problem for the streams in the Blackstone River watershed is the sheer volume of storm water that flows into them. As the land becomes more and more developed, impervious surfaces like roads, parking lots, driveways and rooftops generate more and more runoff. Because there are fewer and fewer vegetated areas, there is less and less infiltration of rainwater.

Storm water from all parts of the watershed is concentrated in the storm drain system and carried to our streams at very high speeds. When the water finally reaches the streams, it blasts adjacent stream channels, causing them to become wider and deeper. The soil eroded from stream banks during storms smothers aquatic habitat in the Blackstone River watershed. Over time, this sediment is carried downstream to Narragansett Bay, where it combines with sediment from other urban streams in the Bay. Sediment is one reason that the Bay is unhealthy.

Reducing water consumption: Water that we consume in the Blackstone watershed eventually flows back into the Blackstone watershed, either through septic systems, wastewater treatment plants, or untreated into our storm drains. Using less tap water prevents unnecessary chemical treatment and disposal from the treatment plant, and save you money on your water bill. By not overwatering your yard, you can help prevent too much water — and pollutants — from entering the streams in the watershed.

As you decide which actions to do, remember this: The actions you learn about will reduce both pollutants and the volume of storm water entering the stream from your yard.



The Blackstone River Coalition is a partnership of numerous organizations working to restore the Blackstone River and improve the health of its watershed. For more information contact BRC Coordinator Peter Coffin at 508-753-6087 or peter.coffin@zaptheblackstone.org.

This guide was developed by Mass Audubon for the BRC, with partial funding from Southold Meadow Farm, Auburn, MA. It is adapted from the Watershed Approach to Stream Health (WASH) Project.

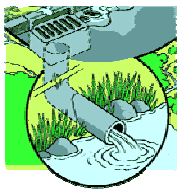
Mass Audubon
Protecting the Nature of Massachusetts

"Greening" Your Lawn and Gardens

Reducing Your Use of Fertilizer, Toxic Pesticides, and Herbicide on Your Lawn and Gardens

WHY?

Whether you are growing grass, beautiful flowers or delicious vegetables, consider doing this without using fertilizers, toxic pesticides, and herbicides.



Lawn: If you have a lawn, you may be using fertilizers and weed killers to keep it green and weed-free. When it rains, these chemicals are washed into the street. **Storm drains** in the streets collect the runoff and empty it untreated into the nearest waterway. So, when you fertilize or treat your lawn, you could also be fertilizing or harming our lakes and streams. Fertilizer encourages algae growth. This can form large algae blooms and uses up oxygen that fish and other critters need to survive. Pesticides kill aquatic insects and herbicides kill aquatic plants, both of which fish and other species need to survive.

Gardens: In your gardens, herbicides and pesticides can harm children, pets, and local wildlife and kill helpful insects such as ladybugs and green lacewings that keep real pests in check. Even when used sparingly, these chemicals can end up washing down storm drains, into streams and eventually polluting the local water supply.

http://www.lismore.nsw.gov

Here's how to create a natural lawn and help protect the health of your family, wildlife, and our local resources.

HOW?

- Get your soil tested and apply fertilizers only at the appropriate time in the right amounts. UMass Extension and URI Extension can help you test your soil and have information about chemical-free lawn and garden care.
- To naturally strengthen the resistance of your plants and lawn to pests, build healthy soil by adding organic matter such as compost. Make your own compost or purchase it.
- If you fertilize at all, it's better to use compost instead of chemical fertilizers. Fertilizers act as pollutants once they enter our waterways.
- If compost doesn't work for you, then use an organic or slow-release fertilizer. A slow-release fertilizer has at least half of the nitrogen in water insoluble form. These fertilizers gradually release nitrogen to plant roots. This provides a steady supply of plant nutrients over an extended period of time. Because you need less fertilizer, you will save time and money.
- Select a fertilizer with low or no phosphorus. Most lawns already contain enough phosphorus. Excess phosphorus is the primary culprit of algae blooms in our lakes.
- Make fertilizer-free zones of at least 20 feet from the edge of lakes, streams or storm drains.

More →

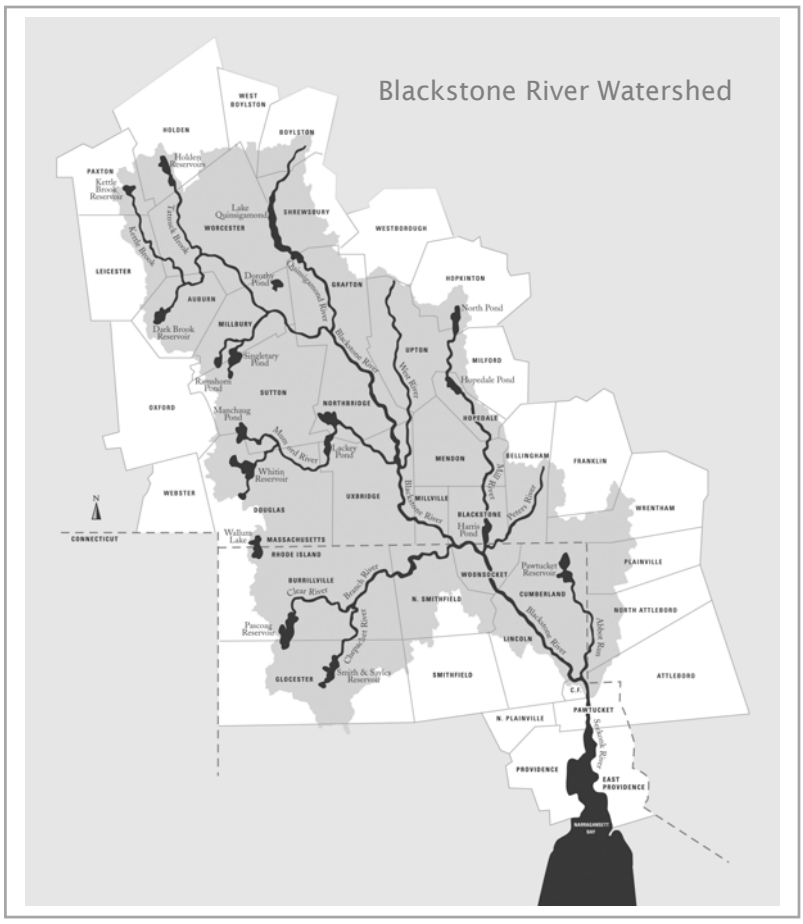
- Sweep any excess fertilizer back onto the lawn. Do not hose it down to the drain.
- Cut the grass high to encourage the root system, and let the cut grass stay on the lawn to add moisture and act as a natural fertilizer. Don't dispose of grass or leaves in wetland areas, because they will "fertilize" local waters.
- Overseed thin areas in the spring and fall to crowd out weeds. Just rake to expose the soil, spread the seed, and cover with 1/4 inch of compost or soil.
- In your garden choose native plants that are naturally pest-resistant, less water-dependent, and adapted to our climate.
- If unwelcome pests do appear, pull them off by hand or spray them with a diluted solution of phosphate-free soapy water. You can also pick off the affected part of the plant. Remember that insects are part of your garden's ecosystem. The occasional pest in your garden may also be a food source for beneficial insects, amphibians and birds.

RESOURCES

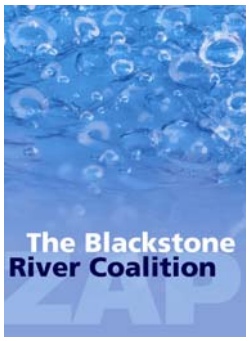
UMass Extension: http://www.umassgreeninfo.org/
http://www.umass.edu/plsoils/soiltest/
URI Extension: http://www.uri.edu/ce/factsheets/indices/0lawnmaintindex.html
http://www.uri.edu/ce/publications/soiltest.pdf
Cornell Cooperative Extension:
http://www.gardening.cornell.edu/lawn/almanac/almanac.pdf
EPA: http://www.epa.gov/reg3esd1/garden/what.htm

BENEFITS

By "greening" your lawn and gardens, you prevent the pollution from fertilizers, herbicides and pesticides from flowing into the stormdrains and streams of the Blackstone watershed while making your yard a natural and safe place for you, your family, your pets, and your neighbors to enjoy.



If you live within the shaded area on the map, then you live in the Blackstone River watershed.



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Mass Audubon
Protecting the Nature of Massachusetts

Cleaner Car Care

Lawns/ Gardens

Car Care

Pet Waste

Clean Dishes/ Clean Streams

Rooftop Runoff

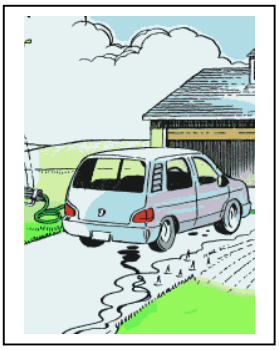
Household Hazardous Waste

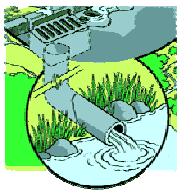
Pervious Surfaces

Stream Buffers

Fixing oil and antifreeze leaks, and getting clean on the green

WHY?





Leaks: Oil, antifreeze and other fluids that leak from your car are washed from your driveway into the street, and then into **storm drains** that flow directly into our Blackstone watershed waterways. In the U.S., it is estimated that petroleum washed off the pavement every year, along with dirty oil dumped directly into storm drains, sends 15 times more oil into the ocean than the Exxon Valdez did. One pint of motor oil can contaminate 125,000 gallons of drinking water and make an oil slick about the size of two football fields.

Washing: How and where you wash your vehicle makes a difference to our local environment! The soap, together with dirt and oil washed from your vehicle, can find its way to local streams, wells and groundwater through storm drains, which are not linked to a water treatment plant. Runoff of excess phosphorous from cleaning products can contribute to the decline in health of our local streams. Phosphorus acts as a nutrient or fertilizer for aquatic plants, causing excessive growth. This pollution harms water quality and aquatic life.

http://www.lismore.nsw.gov

Here's how you can reduce harmful oil and cleaning-product runoff from your vehicle.

HOW?

Leaks:

- If you notice vehicle fluids on your driveway, call your local repair shop to fix it, or repair it as soon as possible. If you change your own oil, return the used motor oil to the place where you bought it for recycling – it's the law in Massachusetts. Also you can check with your Department of Public Works to see if they collect it. Never pour it down the storm drain.
- Clean up spills immediately. Use a non-toxic biodegradable chemical from your local hardware store that will safely break down oil deposits, or use kitty litter to soak up oil. Place it in your garbage can in a sealed bag. Do not hose fluids into the street where they can eventually reach local streams and lakes.
- When parked in your driveway, keep a drip pan under the leak until you repair it. Empty the collected fluids into a tightly sealed and labeled container, and recycle it.

more →

Washing:

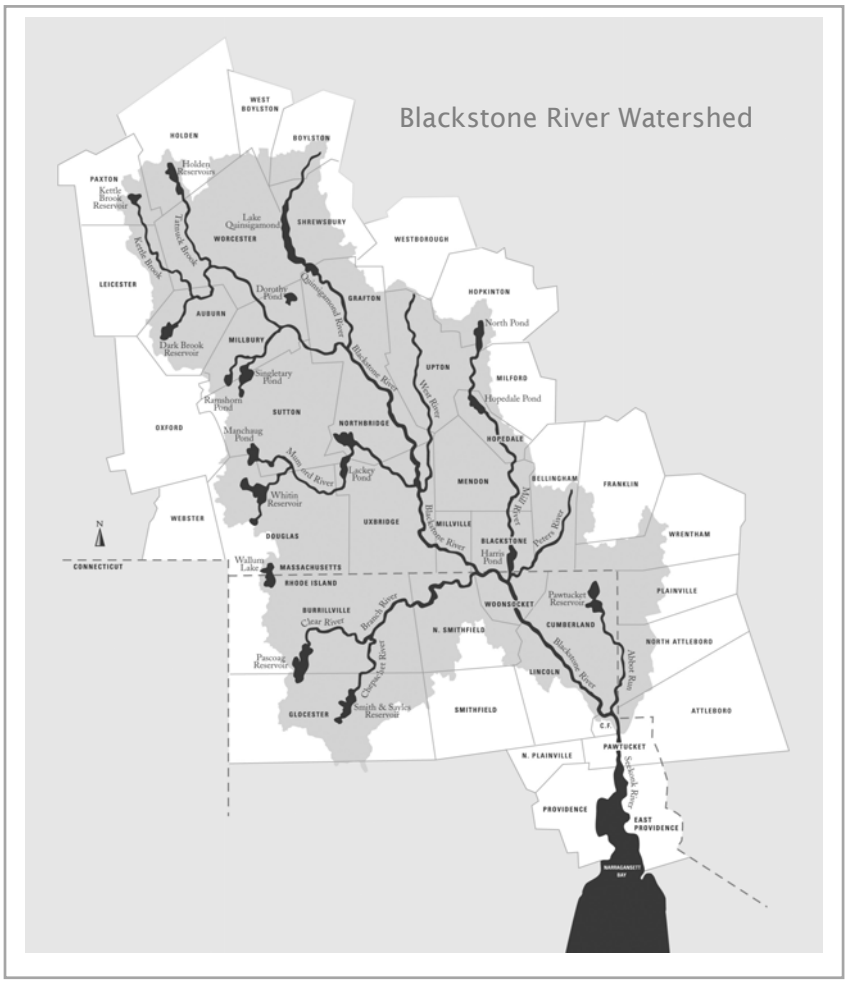
- If you wash your vehicle at home, wash it on grass or gravel instead of the street or driveway to help filter the soapy water and grime.
- Use soap that is biodegradable. To conserve water, make sure your hose has an on-off switch or nozzle.
- If you use a bucket of soap and water, pour what is left in your bucket down the sink so it can be treated, not down the stormdrain.

RESOURCES

http://www.semcog.org/OursToProtect/7SimpleSteps/CarCareTip.htm
http://www.mass.gov/dep/water/resources/oilspi01.pdf
http://www.dem.ri.gov/programs/bpoladm/stratpp/oilrecy.htm
Visit EPA's website to learn about the ***"You Dump It, You Drink It"*** Campaign:
http://www.epa.gov/epaoswer/hazwaste/usedoil/index.htm

BENEFITS

You reduce the impacts of oil and other petroleum products from harming aquatic life, and avoid adding nutrients that cause excessive aquatic vegetation.



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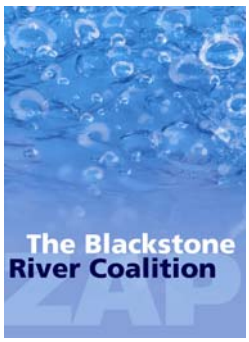

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Mass Audubon
Protecting the Nature of Massachusetts

Lawns/ Gardens

Car Care

Pet Waste

Clean Dishes/ Clean Streams

Rooftop Runoff

Household Hazardous Waste

Pervious Surfaces

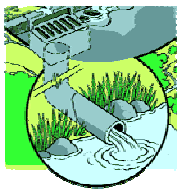
Stream Buffers

Poop Pickup


http://www.lismore.nsw.gov

Cleaning Up After Your Dog

WHY?



Poop pollutes. Thousands of dogs live in the Blackstone watershed and their waste is a health risk when deposited on streets and lawns. It can be washed down **storm drains** and end up in our brooks, streams and rivers, and lakes and ponds. The bacteria, together with other pollutants, can make the water unsafe for swimming and cause health hazards for humans and aquatic life. It may be difficult to picture how one dog depositing a small amount of animal waste here and there can result in potential water pollution, but studies have shown that the cumulative impact of waste from all the pets, livestock, and resident waterfowl within a watershed can have a significant impact on water quality. Here's how to take care of your pet's poop without polluting your neighborhood and its water quality.

HOW?

- When walking your dog, bring a small trowel or "pooper-scooper" and a plastic bag.
- Make sure your pet does not pee directly on the pavement. It is less likely the next rainstorm will wash the waste into the storm drains or local tributaries.
- After your pet does its business, scoop the poop and place it in the bag. Tie it shut until you get home.
- Flush the poop down the toilet or place the bag in your garbage can.

- It's not just your dog! Feeding ducks and geese may seem harmless but, in fact, can be a nuisance to people and harmful to our water. Feeding waterfowl causes them to become dependent on humans. This, in turn, creates unnaturally high populations and problems in our parks and lakes. Waterfowl waste can pollute our water with harmful bacteria.

RESOURCES

http://www.uri.edu/ce/healthylandscapes/tips/7.html

BENEFITS

You help keep the watershed healthy, protecting fish and wildlife habitats. You also make your neighborhood more enjoyable.

more →

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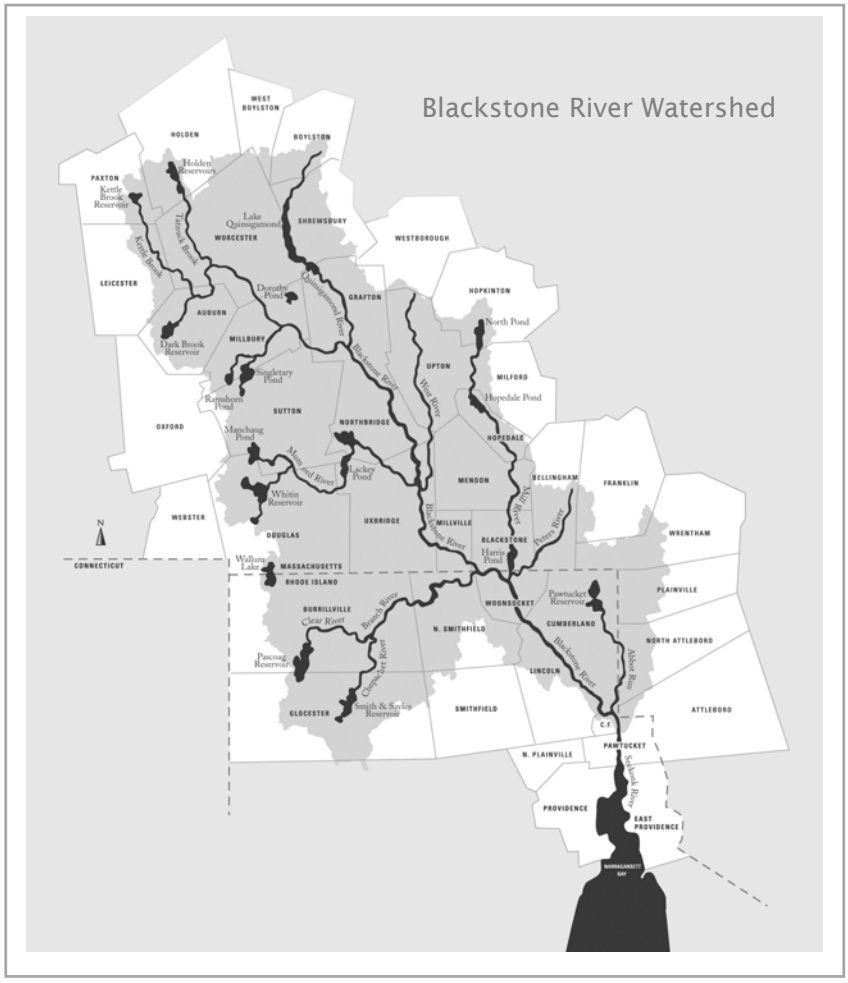

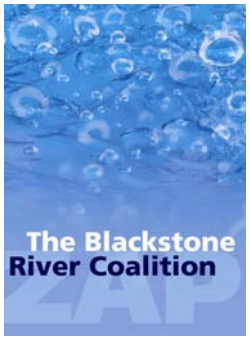

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Blackstone River Coalition www.zaptheblackstone.org

Clean Dishes and Clean Streams

Lawns/ Gardens

Car Care

Pet Waste

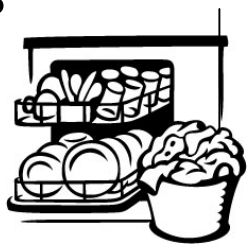
Clean Dishes/ Clean Streams

Rooftop Runoff

Household Hazardous Waste

Pervious Surfaces

Stream Buffers



Using phosphate-free detergent in your dishwasher

WHY?

Dirty soapy water from your dishwasher flows into your septic system, and can leach into the nearest waterway, bringing with it lots of phosphorus. Phosphorus is a nutrient and causes excessive aquatic plant growth, maybe in your local swimming area. Even if your home is sewered, treatment plants don't remove all phosphorus, discharging some to waterways.

HOW?

- You can help improve water quality by using no- or low-phosphorus dishwasher detergent. Read labels and make sure phosphorus is not a listed ingredient. Most common brands of dishwasher detergent contain phosphorus, with the amount varying considerably by brand and by type, with the lesser amounts in gels and liquids, and greater amounts in powders and tablets/pacs. The chart shows percentage of phosphate by brand and type.

RESOURCES

This shelf survey was conducted at Big Y, Hannaford, Market Basket, Shaw's, Stop & Shop and Trader Joe's. Information is from the Mass. Department of Environmental Protection and the New Hampshire Department of Environmental Services website http://www.des.state.nh.us/bb.htm

Automatic Dishwasher Detergent	**% Phosphorus**
Gel/Liquid	
Citrus Magic	0
Seventh Generation	0
Palmolive Gel	3.3
Electrasol Gel	3.7
Hannaford Gel	4.0
Best Yet Gel	4.0
Sunlight Gel	4.3
Cascade Liquid	4.5
Cascade Gel	4.5
Cascade Complete	5.0
Powder	
Trader Joe's	0
Electrasol	4.5
Sunlight 2 in 1	4.5
Hannaford	5.3
Cascade	6.4
Cascade Complete	6.9
Tablets/Pacs	
Sun & Earth Concentrated Pacs	0
Market Basket Tabs	8.0
Cascade 2-1 Pacs	8.0
Sunlight 3 in 1 Pacs	8.6
Electrasol Tabs	8.7
Electrasol 3 in 1 Tabs	8.7
Electrasol Gel Pacs	8.7
Dishwashing Liquid No phosphates allowed	0
Laundry Detergent No phosphates allowed	0

BENEFITS

You reduce the amount of phosphorus entering our waterways and the wastewater treatment plants.

more →

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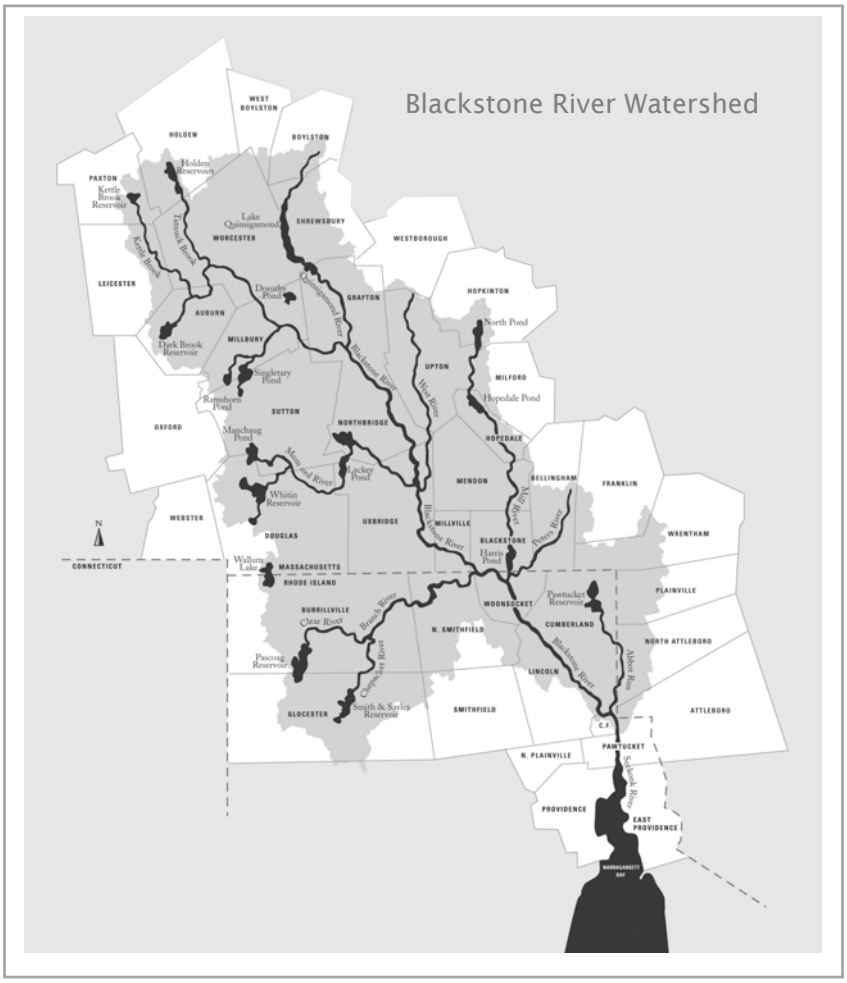

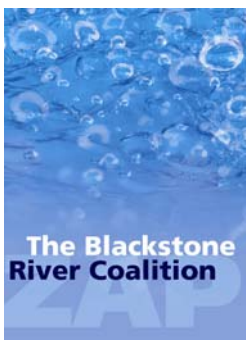

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Protecting the Nature of Massachusetts

Rooftop Runoff - Harvesting Rainwater

Lawns/ Gardens

Car Care

Pet Waste

Clean Dishes/ Clean Streams

Rooftop Runoff

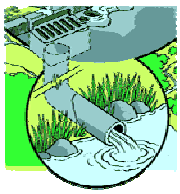
Household Hazardous Waste

Pervious Surfaces

Stream Buffers

Redirecting downspouts, collecting rainwater in rain barrels, and creating rain gardens can cut down on your water bill as well as protect water quality.

WHY?



Water running off your roof during a rainstorm can be part of the problem — or a resource you can put to good use! On many properties in the Blackstone watershed, rooftop runoff from the gutter and downspout drains to the driveway or onto yards with compacted clay soil. In either case, it eventually flows into **storm drains** in the road and directly into our local streams, often causing flooding. Reducing storm water runoff is the first step to reviving life in urban streams.

What's a rain garden? A rain garden is an attractive native plant garden with a special purpose: to reduce the amount of stormwater that rushes into our streams and other waterways. It is constructed as a place to direct the stormwater that falls on your property and is landscaped with water-loving native plant species. By creating a rain garden in your yard, you can use rain the way nature intended — instead of wasting this valuable resource!

http://nemo.uconn.edu/tools/publications/rain_garden_broch.pdf

Here's how to divert rainwater runoff away from hard surfaces and create rain gardens to infiltrate more, so that you can help support aquatic life and reduce stream bank erosion. What's more, rainwater diversion can help you save water for use in your yard, eliminate potential flooding in your basement, and reduce your water bill.

HOW?

Redirect downspouts:

- Check your gutters and roof drains and remove any leaves or other debris that may block water flow. If leaf accumulation is a recurring problem, consider installing commercial gutter shields.
- If your roof drain downspouts discharge to your driveway or too close to the house, install extensions that carry the water at least six feet away from the driveway or foundation to a vegetated area of your yard. Use additional pieces of downspout or open gutters for the extensions. Place a splash block at the end of the extension to spread out the water as it runs onto your lawn. This reduces the potential for soil erosion.
- Or you can collect runoff in a rain barrel to use for irrigation. Cut off your downspout at an appropriate distance from the ground, and place a rain barrel underneath. Place screening over it to protect it from leaf litter and mosquitoes. Attach a hose to the spigot or use a watering can.

more →

Create Rain Gardens:

- Look for low-lying areas of your yard where water tends to run or collect during a rainstorm.
- Dig out the soil 2-4 feet down, taking care not to destroy any significant roots of nearby trees.
- Mix shredded leaf mulch (available from your municipality) with the soil that you have removed. Refill the hole.
- Place a berm (small mound) along the lower edge of the area you've selected, so you can capture and retain stormwater.
- Plant the garden with water-loving native plants that can handle alternately very wet and dry conditions.

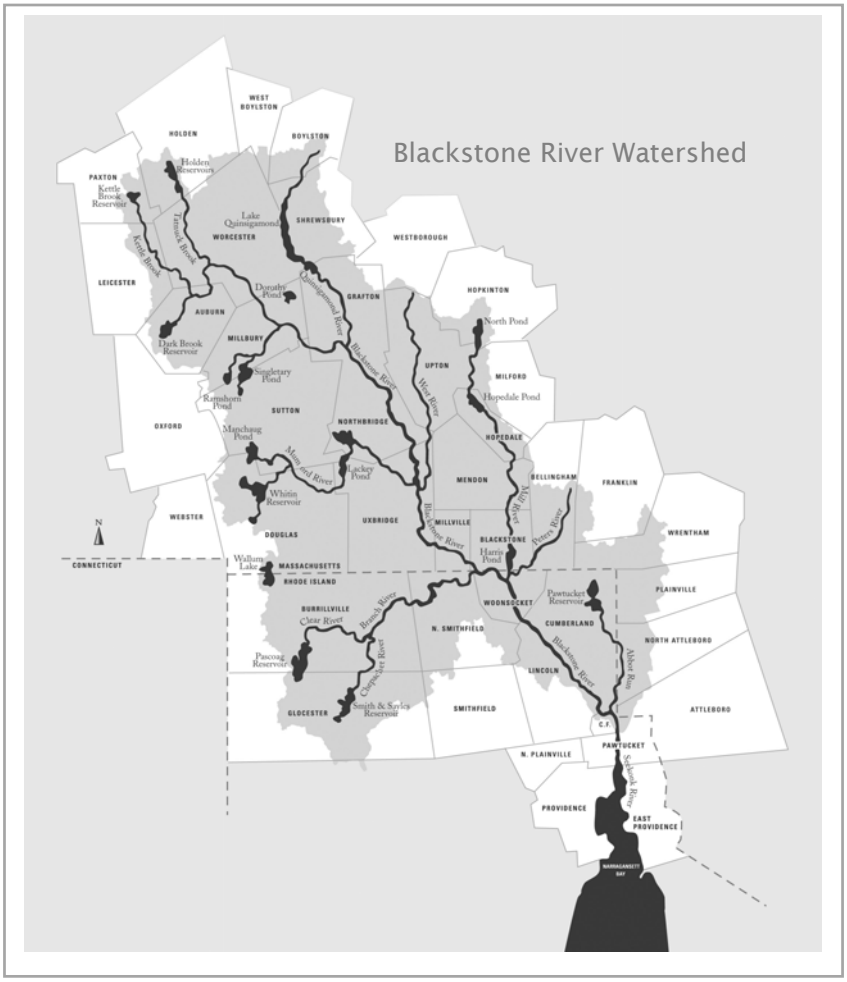
RESOURCES

Rain Garden How-To: http://nemo.uconn.edu/tools/publications/rain_garden_broch.pdf
http://clean-water.uwex.edu/pubs/home.htm#yard
http://www.uri.edu/ce/healthylandscapes/rainbsources.html
Visit Mass Audubon's demonstration rain garden at Broad Meadow Brook Conservation Center, 414 Massasoit Road, Worcester, MA.

BENEFITS

You reduce the volume of stormwater entering our streams, while creating a source of water for your yard between rainfalls. You also save money on your water and sewer bills.

Your rain garden will help keep water in the ground – where it belongs! It will also add an attractive and interesting new element to your landscaping.



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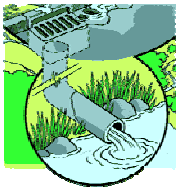
Protecting the Nature of Massachusetts

H2W – Household Hazardous Waste

Carefully storing and disposing of household cleaners, chemicals, and oils

WHY?



Antifreeze, household cleaners, gasoline, pesticides, oil paints, solvents, and motor oil are just some of the common household products that can enter our **storm drains**. Help keep these out of our lakes and streams. Instead of putting these items in the trash, down the storm drain, or on the ground, take them to a local hazardous waste center or collection day.

HOW?

Here are some simple steps you can take to carefully dispose of household wastes and help keep our water clean. Give them a try. A few simple changes can make a big difference!

- Identify it. Be aware of household products that can harm children, pets, and the environment. The words "danger," "caution," "warning," or "toxic" indicate that you need to be careful in how you use and dispose of the product.

- Less is better. Reduce waste and save money by purchasing only the materials you need. When possible, choose less toxic alternatives. For example, try cleaning your windows with vinegar and water.

- Store properly. Keep unused products in their original containers with labels intact. Select cool, dry storage areas that are away from children, pets, and wildlife.

- Disposal is key. Never dump motor oil, chemicals, and other toxic materials down storm drains, sinks, or on the ground. Contact your local community for disposal locations, guidelines, and dates.

- Don't forget the RV. Dispose of recreational vehicle sanitary waste at a nearby drop-off location. Never put it down a storm drain or roadside ditch!

RESOURCES

http://www.uri.edu/ce/wq/has/PDFs/WQP.Hazardous.pdf
For more information on RV dump locations and requirements:
MA: http://www.rvdumps.com/dumpstations/node/46
RI: http://www.rvdumps.com/dumpstations/node/65

more →

BENEFITS

By keeping these toxic materials out of our waterways, you make living much easier for aquatic critters and plants.

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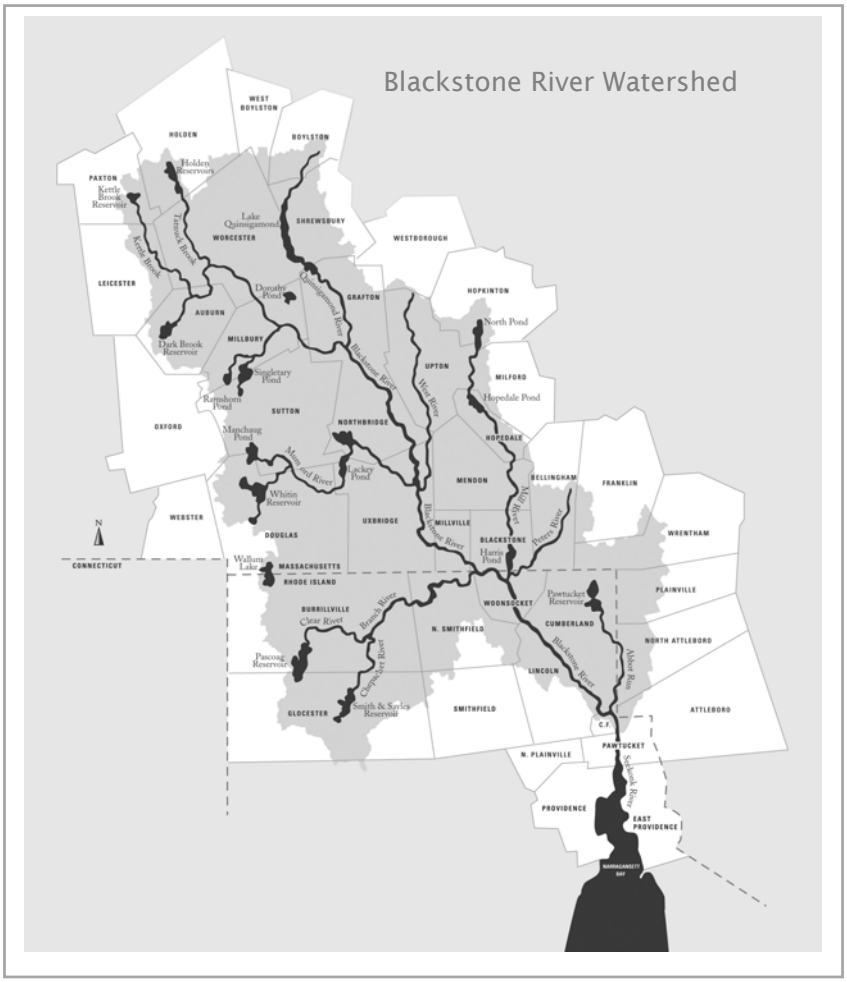

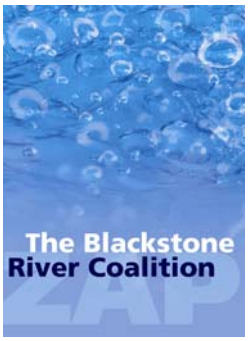

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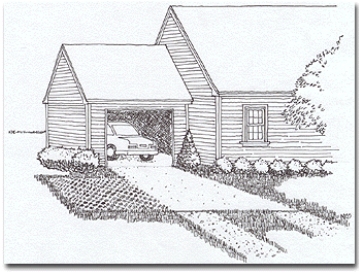
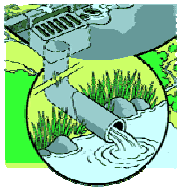
Homeowners: UNPAVE!



Reducing paved surfaces

WHY?



This is one of the most important actions you can take toward helping to improve our local streams in the Blackstone watershed. Did you ever consider how much water runs off your property during a rainstorm? Every time there's a heavy rain, hundreds—even thousands—of gallons of water fall on your roof, driveway, patio, and other paved surfaces. These surfaces are called "impervious" because it is impossible for the water to penetrate them.

Instead of seeping back into the ground, the water rushes from your property into **storm drains**, picking up chemicals, litter, oil and other pollutants along the way. From the storm drains, it flows directly into local streams, untreated. The large volume of water that flows into our streams during a rainstorm flushes life out of our waterways, erodes stream banks, recedes quickly, and leaves excessively low levels of water in the stream after a rain. Storm water running off of impervious surfaces does not infiltrate to ground water, so there is less recharge in our streams. Our streams are "flashier", with higher high water and lower low water.

Here's how you can reduce runoff from your property and infiltrate more.

HOW?

♦ Analyze how much of your property is covered with paved surface. Make a list of all of the impervious surfaces, including your roof, driveway, patio, and other paved areas.

♦ When it comes time to repave your driveway, front walk, or other pathways, choose gravel, wood mulch, or open-design pavers such as flat stones, bricks, pre-cast concrete lattice pavers, or pervious concrete. Place the new cover on well-drained soil or on a sand or gravel bed, so that rainwater can soak into the ground. (If weeds grow in the spaces between pavers, consider introducing moss as a natural way to crowd out weeds and make the area more attractive.)

♦ If you want to take action right away, decide where you could most easily remove impervious surface and replace it with wood mulch, gravel, soil, or alternative pavers.

- Start with one small area or project, and expand from there.
- Remove the paved surface or compacted soil using a pick or hire a contractor to remove the pavement for you.
- Break up the compacted soil underneath, and add shredded leaf mulch to help the soil retain water.
- Cover with the pervious surface of your choice, as indicated above.

more →

♦ If you're thinking about building an addition on your house, consider building up — not out.

RESOURCES

http://www.recycleworks.org/greenbuilding/sus_imperviousurfaces.html
http://www.spacreek.org/cn-storm.htm

BENEFITS

By replacing hard surface with porous surface, you will allow water to be absorbed into the ground. Not only will you save thousands of gallons of rainwater from running into the storm drains and into the streams – you are helping to replenish our groundwater at a time when water is more precious than ever!

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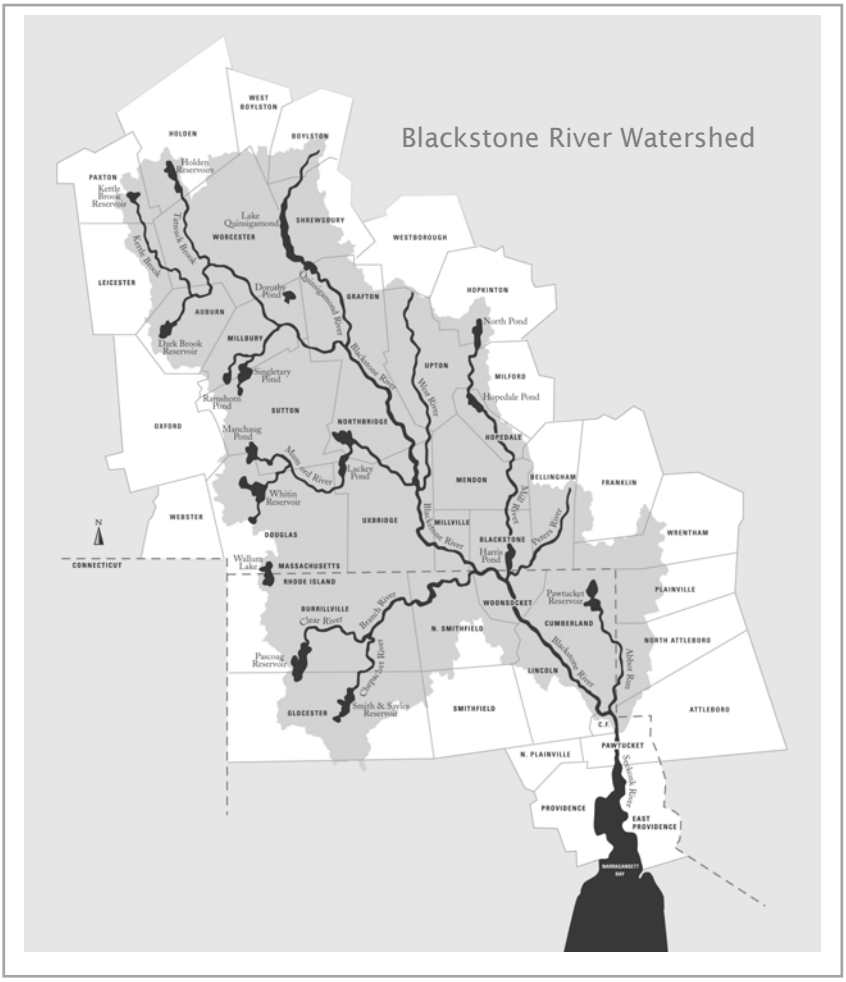

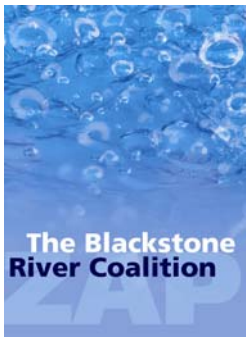

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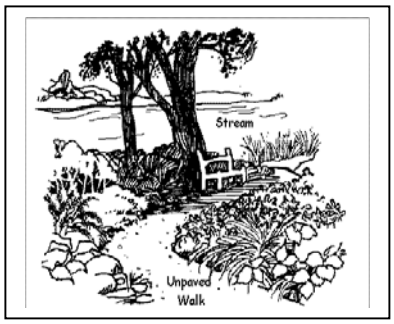
Life on the Edge – of a Waterway



dsf.chesco.org/

Lawns/ Gardens

Maintaining stream buffers and tree canopies

WHY?

Car Care

A key component for improving water quality is the protection of environmentally sensitive areas of vegetation that exist near streams, lakes and ponds, and wetland areas. These buffer areas help protect water quality in local streams and the mainstem of the Blackstone.

Pet Waste

Vegetated buffers and tree canopies along stream banks shade waterways thus keeping temperatures down and dissolved oxygen up, provide detritus in the stream that serves as food and shelter for aquatic species, and stabilize stream banks, stream channels and floodplains from the erosion and scour of high velocity flood flows. These buffers also serve as the link between terrestrial wildlife and their source of water, food and cover. The roots absorb and "take up" nutrients and other pollutants from ground water as it migrates through the root zone. Plant stems and leaves filter pollutants and sediment from overland flow of storm water through passing through the buffer.

Clean Dishes/ Clean Streams

Buffers prevent lawn chemicals from entering the waterway. Fertilizers washing into aquatic systems can cause algae blooms, which can ruin swimming and boating opportunities, create foul taste and odor in drinking water, and kill fish by removing oxygen from the water. Buffers also prevent sedimentation from erosion. Too much sediment can cloud the water, reducing the amount of sunlight that reaches aquatic plants, and raising water temperature thus reducing oxygen. Sediment can also clog the gills of fish or smother fish larvae.

Rooftop Runoff

Household Hazardous Waste

It is very important to protect and restore stream buffers and tree canopy to help preserve these environmentally sensitive areas. If you are lucky enough to have a waterway or wetland on your property, you have a unique opportunity to help improve water quality in your neighborhood and the Blackstone River. Here's how to create, protect and maintain buffer areas.

Pervious Surfaces

HOW?

Stream Buffers

- Don't mow down to your stream. Leave at least 10 feet in native plant buffer to filter pollutants.
- If you fertilize your lawn, stop application at least 20 feet from water's edge to minimize runoff.
- Reduce surface water runoff and erosion by using permeable paving surfaces, directing runoff to planted areas and increasing groundwater recharge.

more →

- If your stream bank has begun to erode, seek expert help to repair it.
- Compost yard waste such as grass clippings, sticks, leaves, and brush; do not dump on the river's edge or into the water, as it can add nutrients that result in excessive aquatic plant growth just like fertilizer does.

RESOURCES

http://www.uri.edu/ce/healthylandscapes/URI_HomeLandImprovement.pdf

BENEFITS

You help keep the watershed healthy, protecting fish and wildlife habitats. You also make your neighborhood more enjoyable.

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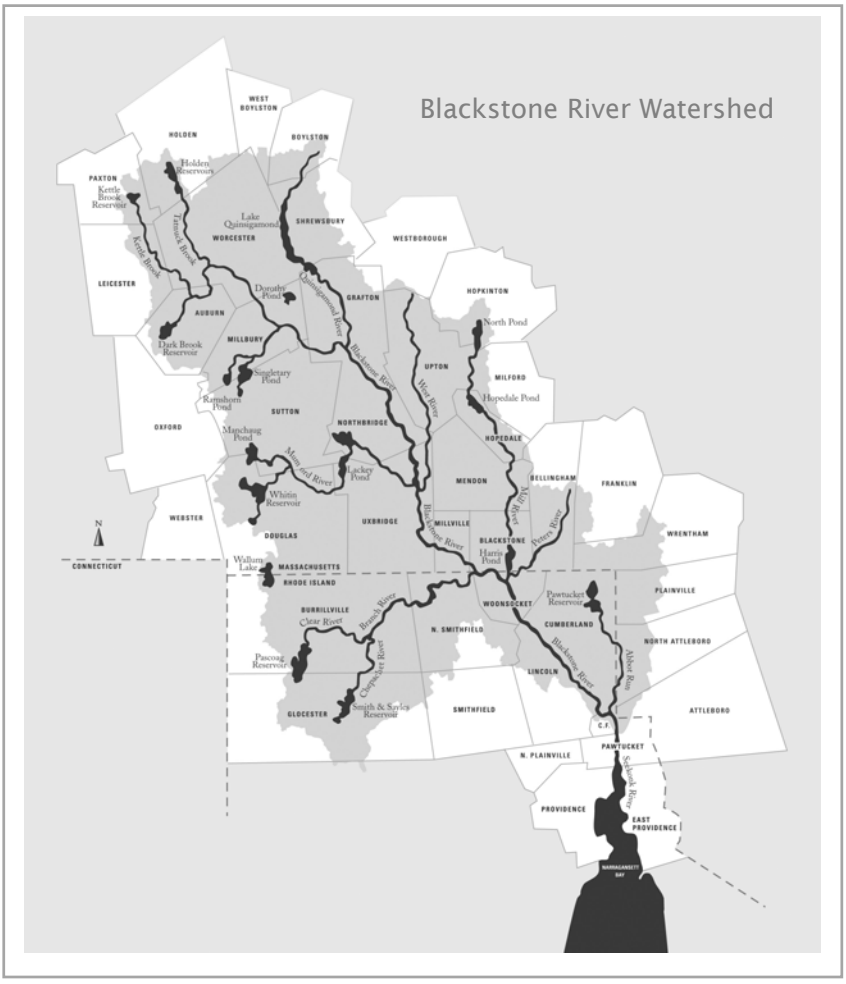

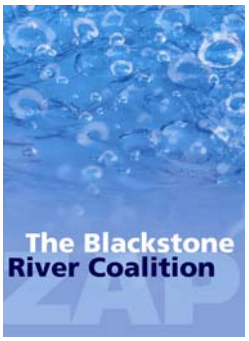

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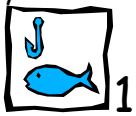
10 THINGS YOU CAN DO TO IMPROVE WATER QUALITY IN RHODE ISLAND

There are many streams and rivers that flow through our backyards and drain into ponds, lakes, bays and ultimately the ocean. Pollutants such as animal feces, fertilizer, oil, hazardous waste, road sand, and grease on the land can be washed into our waters, but we can reduce this type of pollution. Here is a list of 10 things you can do to help clean our local waterways.



1. Learn about your local waters.

Everyone lives in a **watershed**, which is the drainage area to a local waterbody (think of washing everything in a sink down the drain and the drain is your local river or stream). Figure out what waters are closest to you and where they flow. Learn about local animal life and plants that live in and around these waters. Check out DEM's website at **www.dem.ri.gov** to find out more.

2. Don't feed ducks!

Although you may enjoy feeding geese, ducks, gulls and other waterfowl, remember that they too contribute to the same type of pollution that limits swimming and shellfishing. One bird dropping can contaminate 10,000 gallons of water. Bread and other human food are bad for bird's digestive tracts too. Feeding waterfowl can also attract larger bird populations and may cause some birds to stop migrating.

3. Pick up after your pets.

Dog waste and feces from other warm-blooded animals pollute local waterways and are larger polluters than you may think. This type of pollution contributes to the closing of beaches and shellfish beds all over the state. Pick up your pet's waste and deposit it in a trash can.

4. Inspect septic systems.

Approximately 1/3 of the state uses some form of septic system for sewage disposal. Failing septic systems or cesspools are a major source of pollution to ground water and local reservoirs. What you flush directly affects the water we drink and the waters where we fish, swim and boat. If you have a septic system, inspect it regularly, pump and repair it as needed. If you have a cesspool, replace it. For more information on maintaining a healthy septic system the **Septic System Checkup Handbook is available online at www.dem.ri.gov/pubs/regs/regs/water /isdsbook.pdf.**

5.Avoid over-fertilizing

your lawn. During rainstorms, **nutrients** from lawn fertilizer can be washed off lawns and paved areas into local waters. This type of pollution contributes to **eutrophication**, a process that causes nuisance algal blooms and reduction of habitat and oxygen levels for many aquatic organisms. This leads to a decline in fish and shellfish populations, and reduces the diversity of fish in our waters. Get your soil tested to see if it really needs more fertilizer and if so, use as little as necessary. Read the label on fertilizer packages, apply according to directions, and clean-up any fertilizer left on paved areas. Also, reduce your lawn area by planting native, more drought-tolerant plants that are better adapted for the environment, and can act as buffers to prevent runoff from your lawn. For more information and fact sheets, log onto the **University of Rhode Island Cooperative Extension Home*A*Syst** website at **www.uri.edu/ce/wq**.

6. Minimize the use of

hazardous products and **recycle** as much as possible. Cleaning and other household products contain many hazardous chemicals. Try to use the least harmful products available. Learn how to dispose of household hazardous chemicals properly by calling the **RI Resource Recovery program** at **942-1430 x 241** or visit them online at **www.rirrc.org.** The RIRRC website also has recycling information. Recycling helps to conserve natural resources and reduces the amount of refuse sent to landfills. Start a compost bin and buy products made with or packaged in recycled material to reduce waste further. Consult your town for **recycling** guidelines and check the RIRRC website listed above.

7. Get involved. **Volunteer.**

Help with clean-up efforts or be a volunteer water monitor. Participate in local activities that benefit the environment. Find out if there is a watershed council near you. A list is available at **www.ririvers.org.** If your watershed does not have an association, start one! Other statewide non-profit organizations also need volunteers. For more information check out the websites for Save the Bay at **www.savebay.org** and URI's Watershed Watch at **www.uri.edu/ce/wq/**. Every little bit you do counts! **Speak out.** Attend public meetings that pertain to water quality. Your participation makes the statement that your community is concerned about local waterways. Public involvement is imperative if your local and state public servants are to help you make large-scale improvements in your watershed. If you see a problem in your area or want something done, say something! If you don't have time to attend meetings, call or contact a city or town official, a state representative, or DEM.

8. Conserve water.

If you are connected to a public sewer, conserving water will help reduce the discharge from your wastewater treatment facility into local waters. Water conservation helps prevent septic system failures. To learn more about conserving water, visit the RI Water Resources Board at **www.wrb.state.ri.us.**

9. Pump it,

don't dump it! If you own a sailboat or a motorboat have your holding tank emptied at one of the local pumpout stations around Rhode Island. For a list of **pumpout locations call 222-3961 or visit www.dem.ri.gov/maps/mapfile/pumpmap.pdf.** Also, if you have an old engine on your motor boat, look into updating it to a new 2-cycle or 4-cycle engine. They are cleaner for the environment and more efficient, which means they are lighter on your wallet!

10. Get out!

Get out on the water. Swim, sail, surf, kayak, fish, windsurf, boat, shellfish, go birding or walk along the shore. Explore the waters near your home or visit other parts of the state. For information about beach closures, contact the Department of Health **Beach Hotline at 222-2751 or www.health.state.ri.us/topics/bathing.php.** For information on **shellfish bed closures, call DEM at 222-3961.** Make it a point to enjoy the benefits of living near the water, and while you're out there keep an eye out for problems or pollution sources. **To file an environmental complaint with DEM** (which can be anonymous), **call: 222-1360.**

Rhode Island Department of Environmental Management
Office of Water Resources
235 Promenade Street, Providence, RI 02908-5767
Phone (401) 222-6800 • www.dem.ri.gov/

V. Masson
Updated May 2007

10 SIMPLE THINGS YOU CAN DO TO HELP CLEAN RHODE ISLAND WATERS

4. Environmental degradation

Waterfowl naturally congregate in wetlands, when and where natural foods are plentiful. However, when hand feeding occurs, the over-concentration of birds may ultimately cause overgrazing and degradation to the landscape.

High concentrations of birds cause:

- ◊ **Overgrazing of vegetation leading to soil erosion.**
- ◊ **Degradation of the landscape making it undesirable for other species and unsightly for humans.**
- ◊ **Unsanitary conditions due to large quantities of bird feces.**

5. Water pollution

People will often feed ducks or swans at the local pond, or gulls at the beach. This not only causes a nuisance situation with birds begging for and stealing food, but also contributes significantly to water pollution in the form of ***fecal coliform bacteria***. High levels of fecal coliform bacteria in the water cause beach closures and the prohibition of shellfishing in certain areas. This pollution directly affects the enjoyment of our local waters and impairs the livelihood of local shellfishermen.

Feeding the birds can:

- ◊ **Cause gulls to be a nuisance by begging and stealing food and garbage.**
- ◊ **Contribute to beach closures.**
- ◊ **Contribute to the prohibition of shellfishing in coastal areas.**

Feeding Waterfowl is Banned in Rhode Island

As a result of the harm that hand feeding wild waterfowl causes to both the waterfowl and the environment, DEM banned the feeding of wild waterfowl statewide in 2003.

When people feed waterfowl

- ◊ **Waterfowl can become concentrated in small urban environments that are not capable of supporting large flocks.**
- ◊ **Waterfowl may become malnourished and risks of disease increase.**
- ◊ **Birds can become nuisance animals at feeding sites and other areas where they congregate.**
- ◊ **Unnatural concentrations of waterfowl can cause overgrazing and erosion, which may be undesirable for other species.**
- ◊ **High concentrations of fecal coliform bacteria contribute to unsanitary conditions and to closures of beaches and shellfish beds.**

For more information please call:
Rhode Island Department of Environmental Management.
www.dem.ri.gov

Waterfowl questions? Contact:
Division of Fish and Wildlife (401) 789-0281

Water quality concerns? Contact:
Office of Water Resources (401) 222-4700

WRITTEN AND PREPARED BY: MICHAEL HUGUENIN, CHARLES ALLIN AND VERONICA MASSON

5 REASONS WHY FEEDING WATERFOWL IS HARMFUL

PHOTO:GLEN SMART/ USFWS

People have always enjoyed feeding gulls, geese, ducks or swans at beaches and parks. What they might not realize is that feeding these animals is detrimental to the birds and the environment in many significant ways. As a result of the harm it causes, a law was passed that prohibits feeding wild waterfowl. Please read on to learn more about the harmful effects of hand feeding waterfowl.

Birds have amazing survival skills

Waterfowl have an incredible ability to survive and avoid harsh weather conditions. They migrate hundreds of miles south to a warmer climate for the winter where food is abundant, or simply endure the harsh winter weather in northern areas. Many species of migratory and resident waterfowl spend the winter in Rhode Island. For all waterfowl, the abundance of naturally occurring food and the quality of their diet are the main driving forces behind the birds' ability to survive.

Food quality is critical

Waterfowl require proper nutrition to survive New England winters. The diet of a young bird during its first year of life must be high in essential fats, proteins and nutrients to ensure proper development. Adults need a nutrient rich diet in order to replace feathers, and recondition their bodies after migration and during breeding cycles. People unknowingly harm waterfowl by hand feeding food that is low in nutritional value.

High nutrition foods include:

Insects,
Grasses, and
Submerged Aquatic Plants

Low nutrition foods include:

Bread,
Crackers,
Popcorn, and
Pastries

Problems associated with feeding waterfowl include:

- ◊ Malnutrition
- ◊ Dependency
- ◊ Disease
- ◊ Water pollution
- ◊ Environmental degradation

Each problem is described below in detail.

1. Malnutrition

Through evolution wildlife species have developed skills to obtain food that contains the essential nutrients needed to survive, reproduce and live a healthy life. These skills help maintain a balance between animals and their natural habitat. This balance is compromised by hand feeding, which is physically harmful to birds and is one of the primary causes of malnutrition. Malnutrition is caused by the types of food that people hand feed to the birds. Foods such as bread and crackers don't provide the necessary energy and nutrients for proper health, and energy is wasted in digesting these foods. Birds become dependent upon humans because more poor quality foods are needed to make up the difference.

Malnutrition leads to:

- ◊ **Low energy and muscle deterioration.**
- ◊ **Development of deformed wings in young birds.**
- ◊ **Loss of flight later in life.**
- ◊ **Lowered ability to avoid predation.**
- ◊ **Decrease in successful reproduction.**
- ◊ **Lowered life expectancy.**

2. Dependency

Waterfowl, particularly Canada geese and mallards, will congregate in areas with abundant food and space. Unfortunately, hand feeding can cause birds to become concentrated in small urban areas that are incapable of supporting large numbers of birds. The birds then become dependent upon humans for food and can become nuisance animals. Some species, particularly mute swans, can become aggressive and may need to be removed.

Dependence upon humans for food causes:

- ◊ **Loss of their natural fear of humans, which creates aggressive behavior.**
- ◊ **Concentration of birds near highways and airports, potentially causing motor vehicle and airplane accidents.**
- ◊ **Overpopulation of small wetlands and ponds.**
- ◊ **Delay or halting of migration to natural wintering sites.**

3. Disease

Lowered nutrition and overpopulation allow disease to spread more quickly, potentially infecting thousands of birds with fatal diseases such as Avian Cholera, Duck Plague, Avian Influenza and Avian Botulism. Although these diseases have always existed in waterfowl populations, the risks increase when bird populations become concentrated at feeding sites.

United States Environmental Protection Agency

How to Dispose of Medicines Properly

DON'T: Flush expired or unwanted prescription and over-the-counter drugs down the toilet or drain unless the label or accompanying patient information specifically instructs you to do so.

DO: Return unwanted or expired prescription and over-the-counter drugs to a drug take-back program or follow the steps for household disposal below.

1ST CHOICE: DRUG TAKE-BACK EVENTS

To dispose of prescription and over-the-counter drugs, call your city or county government's household trash and recycling service and ask if a drug take-back program is available in your community. Some counties hold household hazardous waste collection days, where prescription and over-the-counter drugs are accepted at a central location for proper disposal.

Courtesy: Upper Watauga Riverkeeper and Appalachian Voices

Drug Take-Back Event

2ND CHOICE: HOUSEHOLD DISPOSAL STEPS*

1. Take your prescription drugs out of their original containers.

2. Mix drugs with an undesirable substance, such as cat litter or used coffee grounds.

3. Put the mixture into a disposable container with a lid, such as an empty margarine tub, or into a sealable bag.

4. Conceal or remove any personal information, including Rx number, on the empty containers by covering it with permanent marker or duct tape, or by scratching it off.

5. The sealed container with the drug mixture, and the empty drug containers, can now be placed in the trash.

* Drug Disposal Guidelines, Office of National Drug Control Policy, October 2009

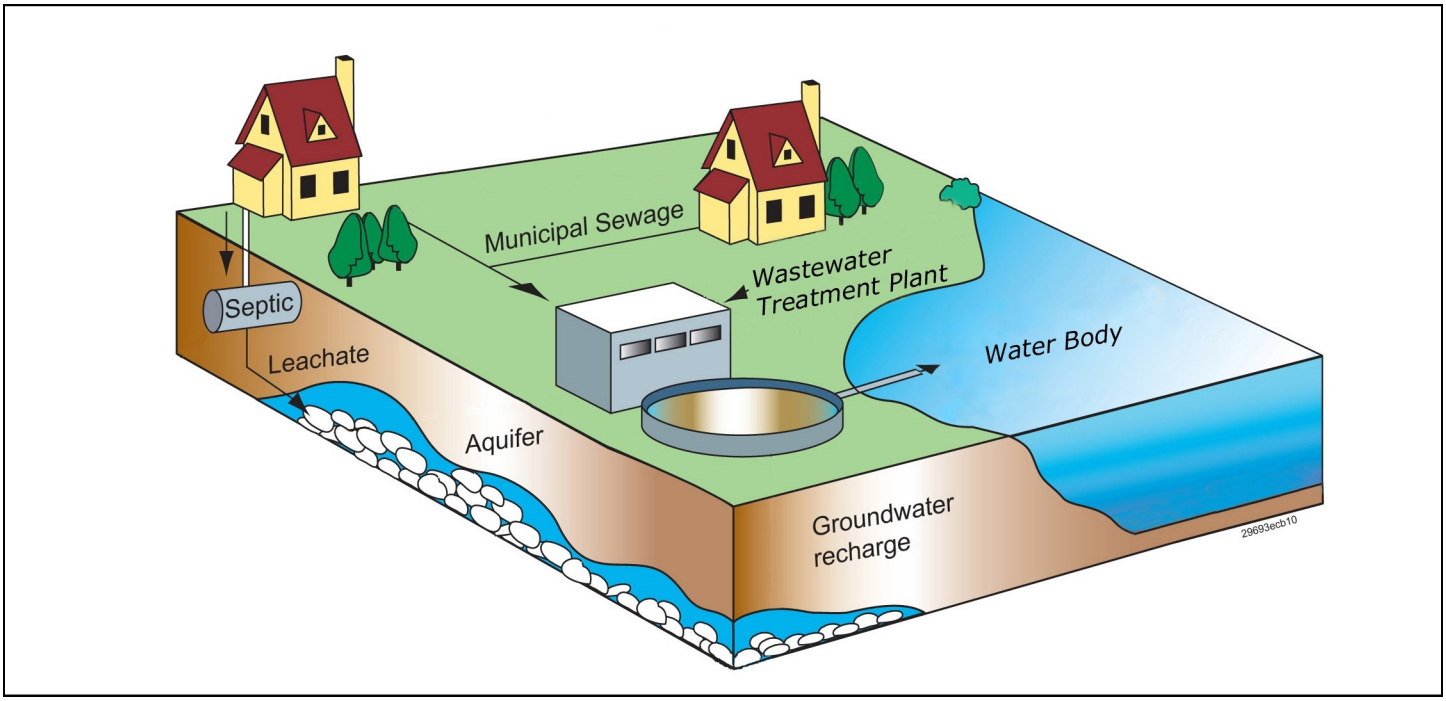
How Proper Disposal of Medicines Protects You and the Earth:

- Prevents poisoning of children and pets
- Deters misuse by teenagers and adults
- Avoids health problems from accidentally taking the wrong medicine, too much of the same medicine, or a medicine that is too old to work well
- Keeps medicines from entering streams and rivers when poured down the drain or flushed down the toilet

How Improper Disposal of Medicines May End Up in Our Drinking Water Sources

In homes that use septic tanks, prescription and over-the-counter drugs flushed down the toilet can leach into the ground and seep into ground water.

In cities and towns where residences are connected to wastewater treatment plants, prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the treatment system and enter rivers and lakes. They may flow downstream to serve as sources for community drinking water supplies. Water treatment plants are generally not equipped to routinely remove medicines.



For more information, go to www.epa.gov/ppcp/
Or call the Safe Drinking Water Hotline at 800-426-4791

Office of Water EPA 816-F-11-003 April 2011

APPENDIX B

OUTFALL CONDITION REPORT

Outfall ID	Longitude	Latitude	Street	Material	Condition of Pipe	Condition of Surrounding Area	Maintenance Required	Priority (1-5 Rank)
076	-71.466567	+41.918626	Heidi Road	RCP	Good	Poor	Excessive sediment in pipe - remove	5
021	-71.469151	+41.944816	Foxwood Drive	RCP	Unknown	Poor	Excessive vegetation & and debris- remove	5
024	-71.457651	+41.914818	Red Brook Crossing	HDPE	Good	Poor	Signs of Erosion - Repair with riprap	5
028	-71.462414	+41.917580	Rivet Drive	RCP	Fair	Unknown - Fair	Excessive sediment in pipe - remove	5
042	-71.472264	+41.898520	Rollingwood	RCP	Good	Poor	Excessive sediment in pipe - remove	5
054	-71.471927	+41.884540	Linfield Drive	RCP	Poor	Good	Pipes not connected heading towards outfall - repair	5
068	-71.478353	+41.950126	South Eagles Nest	HDPE	Good	Poor	Remove vegetation & fallen trees at outfall	5
075	-71.471097	+41.919803	Cynthia Road	RCP	Good	Poor	Excessive sediment in pipe - remove	5
080	-71.432177	+41.927949	Cullen Hill Road (Bottom)	CMP	Good	Poor	Excessive sediment in pipe - remove	5
084	-71.432304	+41.926693	Lower River Road (at Martins Way)	RCP	Good	Poor	Excessive sediment in pipe - remove	5
088	-71.445305	+41.895095	Eastward Drive	CMP	Poor	Poor	Excessive vegetation & and debris- remove	5
090	-71.441805	+41.882313	Jason Drive	RCP	Good	Poor	Pipe nearly blocked by boulder - relocate boulder	5
098	-71.463593	+41.939674	Amica Center Blvd (Near Blackstone)	HDPE	?	Poor	Excessive vegetation - clear	5
115	-71.415276	+41.896246	Grandview Avenue	RCP	Good	Fair	Excessive sediment in pipe - remove	5
131	-71.417467	+41.886846	Cormier Road	RCP	?	Poor	Excessive vegetation & and debris- remove	5
135	-71.419183	+41.918425	Maria Street	RCP	Good	?	Clear vegetation, may need riprap to prevent erosion	5
139	-71.412519	+41.906955	Arlington Drive	CMP	Poor	Good	Pipe crushed - Repair pipe and block wall	5
147	-71.408036	41.896572	Lower Road	CMP	Poor	?	Pipe sections have separated - repair	5
086	-71.435811	+41.933157	Hidden Valley Lane	RCP	Good	Poor	Sediment in pipe - remove	4
134	-71.416540	+41.916927	Ashley Drive	RCP	?	Poor	Clean out area and reestablish swale to drain	4
140	-71.408527	+41.911503	Vista Drive	CMP	Fair	Poor	Sediment in pipe and surrounding area - clean	4
003	-71.446389	+41.930833	Logan Drive	RCP	Fair	Poor	Clear vegetation and debris from outfall pipe	4
065	-71.477330	+41.949798	Eagle Nest Drive	RCP	Poor	Fair	Clear vegetation; repair flared end	4
073	-71.414091	+41.890006	Progress Street	RCP	Fair	Fair	Maintain surrounding area, remove tires	4
081	-71.430114	+41.923699	Lower River Road (near River Road)	RCP	Good	Poor	Excessive sediment in pipe - remove	4
089	-71.441887	+41.884234	Kendall Drive	RCP	Good	Poor	Clear vegetation from outfall pipe	4
111	-71.415779	+41.892972	Rockridge Road	CMP	Good	Poor	Clear area of obstructions	4
146	-71.405117	41.903492	Lower Road - to Scott Pond	OTHER	Good	Poor	Paved waterway - edge of pavement should be stabilized	4
001	-71.447639	+41.897519	Babette Drive	RCP	Good	Fair	Clear vegetation from outfall pipe	3
060	-71.414914	+41.887840	Between Hill & Parker	HDPE	Good	Fair	Add riprap to prevent erosion	3
087	-71.451896	+41.895681	Chase Lane	RCP	Good	Poor	Clear vegetation/downed branches	3
113	-71.413845	+41.892581	Behind Saylesville School	HDPE	Good	Fair/Poor	Clear vegetation from outfall pipe	3
120	-71.472302	+41.926243	Longmeadow Road	CMP	Good/Fair	Fair/Poor	Clear vegetation from outfall pipe	3
002	-71.440117	+41.921483	Cider Mill Lane (end of road detention pond)	RCP	Good/Fair	Fair/Poor	Clear vegetation from outfall pipe	3
005	-71.444872	+41.879531	Paddock Drive/Kendall Drive	RCP	Good	Fair	Clear sediment from outfall	3
015	-71.451246	+41.947200	Briarwood Road	RCP	Fair	Fair	Remove sediment - could be difficult - one pipe cracked - monitor	3
033	-71.464984	+41.908184	Morgan Court	RCP	Good	Fair	Clear sediment from outfall	3
036	-71.464384	+41.912443	Suffolk Way	RCP	Good	Fair	Add riprap to prevent erosion	3
059	-71.461087	+41.881182	Thomas Drive	HDPE	Good	Fair	Add riprap to prevent erosion	3
091	-71.430821	+41.918643	Dexter Rock Road	CMP	Good	Fair	Remove downed trees from pipe	3
094	-71.445285	+41.877202	Grandstand Drive	RCP	Good	Fair	Maintain area	3
110	-71.412528	+41.881759	From Cecile Street	STEEL	Good	Fair	Add riprap to prevent erosion	3
141	-71.417377	+41.907058	Pascale Drive	HDPE	Good	Fair	Maintain area	3
041	-71.477845	+41.904080	Greenwood Road (end of road)	RCP	Good	Good/Fair	Remove sediment & rocks from outfall, maintain area	3
104	-71.420248	+41.918840	Maria Street	RCP	?	Poor	Clear vegetation from Outfall pipe	2
016	-71.478624	+41.913256	Lantern Brook Drive	RCP	Good	Fair	Clear sediment from outfall	2
032	-71.464208	+41.907384	Morgan Court	RCP	Good	Fair	Clear sediment from outfall	2
058	-71.453023	+41.929125	Wilbur Road & Great Road	CMP	Good	Fair	Maintain area	2

OUTFALL CONDITION REPORT

Outfall ID	Longitude	Latitude	Street	Material	Condition of Pipe	Condition of Surrounding Area	Maintenance Required	Priority (1-5 Rank)
093	-71.446028	+41.877429	Citation Court	RCP	Good	Fair	Clear sediment from outfall	2
085	-71.435435	+41.933326	Avenue F	PVC	Good	Good	Add riprap to prevent erosion	2
007	-71.448189	+41.899167	Anne Drive (Basin Outlet)	RCP	Good	Good/Fair	Remove small tree in riprap area	2
010	-71.463420	+41.956988	Mitris Blvd	RCP	Good	Good/Fair	Add riprap to prevent erosion	2
018	-71.481349	+41.923850	Crownmark Drive	RCP	Good	Good	Clear Vegetation	2
026	-71.455195	+41.912719	Preakness Drive/Pike	RCP	Good	Good	Clear sediment from outfall	2
031	-71.459167	+41.908170	Pine Tree Lane	RCP	Good	Good/Fair	Clear sediment from outfall	2
046	-71.464308	+41.877186	Lori Ellen Drive	PVC	Good	Good	Maintain area	2
049	-71.471820	+41.892581	Sables Way	RCP	Good	Good/Fair	Maintain area	2
053	-71.471608	+41.883188	Linfield Drive	RCP	Good/Fair	Good	Remove sediment - Pipe cracked at end of pipe - monitor	2
063	-71.466654	+41.952960	Rosemont Terrace	RCP	Good	Good/Fair	Minor vegetation to be cleared	2
067	-71.479296	+41.948514	South Eagle Nest & White Horse Road	PVC	Good	Good/Fair	Leaves are building up - Keep clear	2
095	-71.446423	+41.877651	Citation Court (across from #3)	HDPE	Good	Good/Fair	Remove sediment from outfall	2
097	-71.457126	+41.937993	Blackstone Valley Place (near Pare Corp)	RCP	Good	Good/Fair	Remove sediment from outfall	2
099	-71.461802	+41.935633	Amica Center Blvd (Near Blackstone)	RCP	Good	Good/Fair	Remove sediment from outfall	2
105	-71.418426	+41.908983	Holiday Court (pond behind Lonsdale School)	PVC	Good	Good/Fair	Remove sediment from outfall	2
107	-71.416080	+41.903905	Allan Drive	RCP	Good	Good/Fair	Remove sediment from outfall	2
043	-71.472441	+41.898357	Rollingwood Drive & Wingate Road	RCP	Good	Poor	Maintain area	2
017	-71.477884	+41.911613	Lantern Brook Drive	RCP	Good	Good	Vegetation could be cleared - not urgent	1
025	-71.447152	+41.883325	Lennon Road (end of road)	RCP	Good	Good	Minor vegetation to be cleared	1
030	-71.460557	+41.909374	Erica Drive (end of road)	HDPE	Good	Good	Vegetation could be cleared- not urgent	1
035	-71.462575	+41.905312	Jenckes Hill Road (btw Morgan & Bridle)	RCP	Good	Good	Minor vegetation to be cleared	1
040	-71.470918	+41.901839	Payne Road & Greenwood Lane	RCP	Good	Good	Minor vegetation to be cleared	1
142	-71.417330	+41.906051	Beverly Drive	RCP	Good	Good		1
048	-71.470293	+41.894997	Whipple Road	PVC	Good/Fair	Good	Small slice through end of pipe - monitor, no action needed	1
006	-71.440214	+41.876908	King Philip Road (end of road)	RCP	Good	Good		1
004	-71.450556	+41.877222	Riata Drive	RCP	Good	Good		1
008	-71.467709	+41.959485	Mussey Brook Road	RCP	Good	Good		1
009	-71.464870	+41.954465	Kennedy Blvd	RCP	Good	Good		1
011	-71.464068	+41.951592	Deerfield Court (end of road)	RCP	Good	Good		1
012	-71.469994	+41.946859	Meadowbrook Road	CMP	Good	Good		1
013	-71.466527	+41.946216	Spring Green Road	PVC	Good	Good		1
014	-71.449565	+41.947886	Brushwood Drive	RCP	Good	Good		1
019	-71.476128	+41.925405	Wellington Road	RCP	Good	Good		1
020	-71.479528	+41.918615	Powder Hill/Wellington Road	RCP	Good	Good	No maintenance required - drain discoloration	1
022	-71.469788	+41.945121	Spring Green Road	RCP	Good	Good		1
023	-71.459450	+41.916785	Red Brook Crossing	RCP	Good	Good		1
029	-71.462163	+41.909063	Bridle Drive	RCP	Good	Good		1
037	-71.454490	+41.909632	Fair Oaks Drive (Basin Outlet)	RCP	Good	Good		1
038	-71.422459	+41.895884	Carriage Drive	RCP	Good	Good		1
044	-71.471168	+41.900197	Middlebrook Lane	CMP	Good	Good		1
045	-71.471204	+41.900195	Middlebrook Lane	RCP	Good	Good		1
050	-71.471120	+41.892568	Sables Way	RCP	Good	Good		1
051	-71.460795	+41.891400	Winterberry Lane	RCP	Good	Good		1
052	-71.465257	+41.878654	Angell Road / Michael Drive	PVC	Good	Good		1
055	-71.465859	+41.888193	Maple Avenue / Rocky Cliff Drive	CMP	Good	Good		1
057	-71.450514	+41.928777	Great Road at Anna Sayles Road	RCP	Good	Good		1
064	-71.474936	+41.948021	Eagle Nest Drive (Basin Outlet)	RCP	Good	Good		1

OUTFALL CONDITION REPORT

Outfall ID	Longitude	Latitude	Street	Material	Condition of Pipe	Condition of Surrounding Area	Maintenance Required	Priority (1-5 Rank)
066	-71.477487	+41.949700	Eagle Nest Drive (Basin Outlet)	RCP	Good	Good		1
070	-71.469750	+41.921582	Longmeadow Road	RCP	Good	Good		1
071	-71.469519	+41.946425	Brookside Drive	RCP	Good	Good		1
074	-71.469647	+41.921587	Longmeadow Road	RCP	Good	Good		1
077	-71.480911	+41.970511	Joyce Anne Drive	RCP	Good	Good		1
078	-71.440928	+41.923398	Cider Mill Lane (near Great Meadow)	RCP	Good	Good		1
079	-71.433799	+41.921559	Ducarl Road	PVC	Good	Good		1
082	-71.433210	+41.931650	Lower River Road (at Ave D)	HDPE	Good	Good		1
083	-71.433064	+41.931665	Lower River Road (at Ave D)	HDPE	Good	Good		1
096	-71.457367	+41.93565	Blackstone Valley Place (across from #4)	RCP	Good	Good		1
100	-71.465560	+41.939602	Amica Center Blvd (into pond near 116)	PVC	Good	Good		1
101	-71.465572	+41.939601	Amica Center Blvd (into pond near 116)	RCP	Good	Good		1
102	-71.451571	+41.881450	Lennon Road	RCP	Good	Good		1
103	-71.451036	+41.877351	Graywood Drive	RCP	Good	Good		1
106	-71.411599	+41.913763	Riverside Drive	RCP	Good	Good		1
108	-71.413039	+41.891091	From Ballou Avenue into swale	STEEL	Good	Good		1
109	-71.412869	+41.891175	From Ballou Avenue into swale	STEEL	Good	Good		1
112	-71.416379	+41.894039	Woodland Street	RCP	Good	Good		1
114	-71.419098	+41.891181	Rockridge Road	RCP	Good	Good		1
116	-71.425230	+41.879017	Mark Drive (pond outlet)	RCP	Good	Good		1
117	-71.429333	+41.877992	Stephanie Drive (pond outlet)	RCP	Good	Good		1
118	-71.467276	+41.950090	Meader Pond Road	HDPE	Good	Good		1
119	-71.476017	+41.945824	Elbow Rock Road (basin outlet)	RCP	Good	Good		1
122	-71.463157	+41.886765	Southwick Road	PVC	Good	Good		1
123	-71.456248	+41.877708	Angell Road	HDPE	Good	Good		1
124	-71.450202	+41.878664	Dennell Drive	RCP	Good	Good		1
127	-71.409942	+41.882860	Almond Street	CMP	Good	Good		1
129	-71.415941	+41.890764	Progress Street	HDPE	Good	Good		1
130	-71.447561	+41.948446	Timberland Drive- into woods	RCP	Good	Good		1
136	-71.421736	+41.919379	Maria Street	RCP	Good	Good		1
138	-71.409513	+41.912447	Willow Way	RCP	Good	Good		1
143	-71.462440	+41.887471	Southwick Drive	HDPE	Good	Good	Repairs made in 2014 - Vegetation Removed	1
144	-71.405742	41.905419	Lower Road	CONCRE	Good	Good		1
145	-71.405181	41.902364	Lonsdale Avenue	OTHER	Good	Good		1
027	-71.466856	+41.914388	Presidential Way	PVC	Good	Good		1
034	-71.466129	+41.909446	Belmont Drive	RCP	Good	Good		1
047	-71.465880	+41.878165	Reverie Lane	RCP	?	?		
039	-71.470024	+41.903218	Rosewood Drive	RCP	?	?		
056	-71.450595	+41.931294	Partridge Drive (to Anna Sayles)	RCP	?	?		
121	-71.467953	+41.920166	Alyssa Lane	RCP	?	?		
125	-71.428924	+41.877741	Heritage Drive	RCP	?	?		
126	-71.450875	+41.894919	Evergreen Road	RCP	?	?		
128	-71.408938	+41.880891	Hazel Street	HDPE	?	?		