

Municipality/Organization: Town of Ipswich, MA

EPA NPDES Permit Number: MA041199

MassDEP Transmittal Number: W-035827

Annual Report Number Year 10
& Reporting Period: April 1, 2012 – March 31, 2013

**NPDES PII Small MS4 General Permit
Annual Report
(Due: May 1, ~~2012~~
2013)**

Part I. General Information

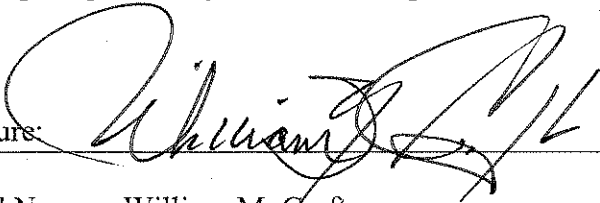
Contact Person: Richard Clarke Title: Director of Public Works

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Mailing Address: 25 Green Street, Ipswich, MA 01938

Certification:

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

Signature: 

Printed Name: William M. Craft

Title: Chairman, Board of Selectmen

Date: 4/29/13

Part II. Self-Assessment

As required, the Town of Ipswich has completed a self-assessment review of the Town's compliance with the permit conditions and has determined that our municipality is in significant compliance. Important achievements are highlighted below:

BMP ID 1-1

- a. The Town has continued to fund the preparation of stormwater related educational materials and these materials have been made available at the Town Hall and within other public spaces. Stormwater related information is also posted on the Town's website, and in particular, a Stormwater Information link has been established within the Conservation Commission's webpage to provide general stormwater quality and BMP information. In the coming year, the Town will consider the creation of a NPDES MS4 specific webpage to act as a central educational resource for the community.

BMP ID#3-1

- a. The Town continued its manhole and catchbasin inspection and GPS location program on a limited basis throughout this permit year. It is estimated that up to 90% of the system has now been mapped and the collected data has been input into the Town's GIS. The addition of this information provides the Town the capability to track and schedule catchbasin cleaning activities and better determine when cleaning is needed based on the collected data. Using this information, the Town employed a clam shell bucket to clean 776 structures during the past permit year.
- b. While cleaning each storm drain structure, internal inspections of each structure is also completed to determine their condition and develop a program for replacing or modifying those structures that are determined to be in need of improvement.
- c. Based on information collected during an internal inspection of the storm drain system within the Charlotte and Randel Road area (2011-2012 permit year), the Town completed the construction of a new storm drain system to replace a former catchbasin-to-catchbasin system in the area. The new system includes deep sump catchbasins connected through manholes with sumps to improve sediment collection and protect downstream receiving waters.
- d. The Ipswich Shellfish Department continued its sampling program throughout the permit year within select sections of the Ipswich River to monitor for elevated levels of bacteria. Elevated levels continue to be detected in areas of the Ipswich River.
- e. One illicit connection was discovered in the Peabody Street area that may have been a contributor to the elevated levels of bacteria detected in the Ipswich River. This illicit connection, which consisted of a cross connection between a sanitary sewer overflow from an industrial facility and the Town's storm drain system was eliminated.

BMP ID#5-2.2

- a. The Town applied for a grant from the Massachusetts Division of Coastal Zone Management (CZM) to fund the construction of a new large structural BMP to improve stormwater quality that enters the Ipswich River. Although this application was not successful, the Town will continue to seek funding assistance and will apply for 319 grant in May 2013 for construction of the BMP.

- b. Working with the Metropolitan Planning Council, the Town applied for grant funding that, if awarded, will be used to investigate potential pollutant sources within the Ipswich River Watershed within the Town of Ipswich. This investigation would be carried further to include an evaluation of potential pollutant sources on a sub-watershed basis and available implementation sites for the future installation of best management practices to address pollutant loading from the sub-watersheds prior to entering the Ipswich River.

GENERAL

- a. The Department of Public Works (DPW) finalized a contract with a consulting firm who will review the operation and maintenance requirements for all major structural BMPs within the Town and provide recommendations for the long-term O&M of the structures. The DPW budget for FY 2014 includes additional funding for maintenance of these structures.
- b. The DPW continues to actively work to integrate stormwater management improvements into all capital improvement projects and all in-house drainage repair/improvement projects. All sand/salt spreading equipment used for winter sanding and salting operations were again re-calibrated during the fall of 2012. This practice not only reduces the costs associated with sanding operations, but also significant reduces the sediment loading to the storm drainage system.
- c. Reconstruction of Washington Street was completed during the permit year. This roadway reconstruction project includes an improved drainage system that will reduce the potential for sediment transport to the receiving water body.
- d. During this permit year the Town completed stormwater system improvements within the major intersection at Market and Central Streets. The past drainage system was constructed with catchbasin-to-catchbasin connections and did not include manholes or catchbasins fitted with sumps to collect sediments. The new system includes all new catchbasins and manholes with sumps for sediment collection.
- e. An application for a Beneficial Use Determination (BUD) was completed and submitted to the Massachusetts Department of Environmental Protection (DEP) to improve the Town's management of generated stormwater residuals (i.e., street sweeping and catchbasin cleaning residuals). If approved, the BUD will improve the Town's ability to collect and manage stormwater residuals and provide improved alternatives for the disposal and reuse of these residuals.
- f. During the permit year, the Town again funded the Public Works Operations Manager position. The Operations Manager will continue as the primary contact for MS4 permit issues.
- g. The Planned Activities section of the annual report has been developed as a continuation of the 2003 permit. When the new permit is finalized, the Planned Activities may need to be re-visited.

Part III. Summary of Minimum Control Measures

1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities–Permit Year 11
1-1	Procurement/Development of education material	DPW Director	Procure or adapt four brochures for distribution and posting in subsequent permit years. Will post through existing stormwater webpage with link through Conservation Commission web page.	Continued to work with Greenscapes, to develop educational brochures. The brochures are made available at Town Hall and other public spaces. The Town has continued to conduct educational presentations for the Board of Selectmen in support of funding for the new NPDES permit.	The Town will continue to fund the preparation of educational materials and will consider addressing specific areas of interest for the Town. Materials may begin to focus on the anticipated format of the new permit.
Revised				Town continued to host a link regarding stormwater information, the Town's Stormwater Bylaw and Best Management Practices through the Conservation Commission webpage. The Town has continued work with the Clark Pond Management Committee with the goal of improving the wetland habitat by educating the abutters about Best Management Practices within the watershed.	Support for the Clark Pond Committee will continue. This work will serve as a template for outreach to other neighborhood groups looking to improve their local wetland habitat. The Town will continue to host Stormwater related information on its website and will investigate developing a separate "Stormwater Issues" webpage.

Revised				<p>The Town continued several additional educational programs. The Town published an Annual Recycling Calendar, and the Ipswich Recycling Committee contributes a weekly column to the local newspaper on issues of environmental concern. The DPW also provides news releases to the local news media regarding issues of household waste management, recycling and stormwater.</p>	<p>The Town will continue to provide public information on environmental issues that impact water quality and will prepare a publication regarding its work with the Clarke Pond Committee when appropriate.</p>
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2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 11
2-1	Conduct joint Household Hazardous Waste and Oil/Paint Collection Days	Board of Health with DPW Director	Conduct one joint collection day annually and an additional oil-based paint (plus tires, batteries, fluorescent bulbs) collection day conducted by the DPW alone.	The Town conducted a Household Hazardous Waste Collection Day on September 29, 2012 and two Special Collection events on May 19, 2012 and September 29, 2012. The DPW also continued an ongoing mercury recovery program throughout the permit year.	A Household Hazardous Waste and Special Collection Day is scheduled for May 18, 2013. A second Special Collection Day will also be conducted during September 2013.
Revised		Board of Health, DPW Director, & Recycling Coordinator		The Town continued its fluorescent bulb collection program through Wheelabrator Tech, Inc. and tire and battery collection program with North Shore Scrap Steel of Gloucester, MA.	

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 11
3-1	Map outfalls and receiving waters	DPW Director with Utilities Director	Develop system for informing all public departments of changes in MS4 resulting from new development or redevelopment; field verify Ipswich Coastal Pollution Control Committee mapping and Parker River Watershed Outfall Mapping	<p>BMP completed in Permit Year 4, see prior report.</p> <p>Additional surface manhole inspections were completed, bringing the total complete to approximately 90% of the comprehensive system. Collected data included structure condition and pipe (inlet & outlet) size and material. Catchbasins were also inspected and sediment depth documented. This information was used to identify catchbasins that required priority cleaning.</p> <p>The DPW continued to recommend that all as-built plans for large development projects provided to the Planning Board and Conservation Commission be submitted to the DPW so that storm drain mapping can be updated in the GIS.</p> <p>The Town purchased a GPS unit to assist with completing the comprehensive drainage system mapping and for the inclusion of new drainage structures to the GIS system. The GPS collected information includes catchbasins and manhole locations, connection piping, inlets and outlets, as well as any other drainage assets within the Town's limits.</p>	<p>The Town will focus on completing inspections of the storm drain structures and connectivity mapping of the drainage system. Completion of these activities will depend on funding availability.</p> <p>The DPW will continue to receive as-built plans for large developments and use the received information to update the GIS.</p>

3-2	Detect and Eliminate Illicit Discharges	DPW Director	Develop Illicit Discharge Detection and Elimination Plan; dry weather discharge evaluation of the top priority area. Conduct sampling in priority areas to investigate potential illicit connections.	<p>Sampling by the Shellfish Department continued in areas of the Ipswich River to verify water quality. The sampling results revealed elevated levels of bacteria. In response, outfalls were samples but illicit connections were not identified.</p> <p>The Town applied for a funding through the 603b program</p>	<p>Additional priority sub-basins will be identified for an Illicit Detection Project based on the information gathered through the remaining surface manhole inspections, residential catch basin odor complaints, or through the permitting of all existing drain connections. This is a continuous program expected to be completed over several years.</p> <p>The Town will continue to investigate grant opportunities to fund further water quality investigations and BMP design/construction to improve outfall water quality that may be impacting shellfish beds.</p> <p>The Town will continue to develop educational materials in accordance with BMP 1.</p>
Revised					
3-3	Conduct Illicit Discharge Educational Program	DPW Director	Included in Minimum Control Measures 1,2 and 6.	<p>Mailings were sent out to every property owner over the year alerting them that any connection to the MS4 needs a Connection and Discharge Permit as specified in the recently passed Stormwater Regulation.</p> <p>A Stormwater Management Bylaw was passed at Fall Town Meeting on October 20, 2008. This bylaw prohibits illicit discharges to the MS4.</p>	
3-4	Develop Bylaw Prohibiting Illegal Dumping of Non-SW into MS4	DPW Director	Develop Bylaw		Completed.

3-5	Develop Regulations and Policies to Enforce Bylaw	DPW Director	Policies and Regulations	Stormwater Regulations for the Issuance of Stormwater Management Permits as well as Stormwater Regulations for the Issuance of Connection and Discharge Permits were adopted in February 2010 and implemented in August 2010	Completed.
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4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 11
4-1	Revise Site Plan Review Bylaw	Planning Director	Draft amendment to the Site Plan Review section of the Zoning Bylaw for review of projects greater than one acre. Planning Board also intends to draft a bylaw that will address projects of less than one acre.	The Planning Board and the Planning and Development Department continue to work to update the stormwater management requirements of the Site Plan Review Regulations so that they are consistent with those of the Stormwater Bylaw.	Ongoing
Revised					
4-2	Improve Site Plan Review Process	DPW Director	Draft revised process and tracking tool.	The Town identified a new online permit vendor to improve the online permitting process.	Continue to work on getting building and site plans changed to electronic versions only. Engage new online permit vendor and improve online permitting process.
4-3	Procedures for Receipt of Public Information	Planning Director	Review existing procedures for consideration of improvements or compliance with Phase II.	Any construction project requiring Site Plan Approval by the Planning Board or the issuance of an Order of Conditions by the Conservation Commission is subject to public hearing, where letters and verbal comments on the project's stormwater management program may be entered into the record (from Permit Year 8).	To be determined

4-4	Develop Site Inspection and Enforcement of Control Measures Program	DPW Director	To be developed by the end of Year 2 and implemented in Years 3-5.	<p>The Stormwater Bylaw, which was adopted by the Town, allows to the extent allowed by State law the Permitting Authority or its designees to enter upon private land for inspections, sampling, etc. The Site Plan Review Regulations allow the Planning Board to require inspections during project construction. Inspections of construction sites and their stormwater control measures are made intermittently by DPW staff and/or the Conservation Agent (from Permit Year 8).</p>	Ongoing.
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5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 11
5-1	Post Construction Runoff Bylaw	Planning Director	Complete Draft Bylaw by end of Permit Year 2. Develop associated regulation and guidance in Permit Year 3.	Stormwater Management Bylaw passed in Permit Year 6. Stormwater Regulations for the Issuance of Stormwater Management Permits and the Issuance of Connection and Discharge Permits were adopted in February 2010 and implemented in August 2010.	The Town will continue to work to improve the effectiveness of these regulations and modify them as needed.
5-2	Ensure Adequate Long-Term Operation and Maintenance of BMPs	DPW Director	(See Below)	(See Below)	(See Below)
5-2.1	DPW Review of Structural Best Management Practices	DPW Director	Draft procedure for evaluation of Best Management Practices from Operation and Maintenance perspective	Through this permit year the DPW issued 1 Stormwater Management permit. Due to the small scale of other proposed projects, Stormwater Management Permits were not required. The DPW requested of the Planning Board and the Conservation Commission that the next iteration of the Site Plan Review Regulations and the Ipswich Wetlands Protection Bylaw include the requirement that the DPW be provided with a copy of the permit filing to allow for the opportunity to review and comment on proposed stormwater management and O&M plans.	The DPW will continue to review all BMPs within Stormwater Management Permit Applications in accordance with the Stormwater Bylaw and Regulations. The DPW will also continue to work through the Stormwater Regulations with the Stormwater Advisory Committee. DPW will continue to receive copies of Planning Board and Conservation Commission filings and review and comment on proposed stormwater management and O&M Plans.
5-2.2	Establish Funding Mechanism for Operation & Maintenance of Structural Best Management Practices	DPW Director	Investigation of potential funding mechanisms.	The Stormwater Advisory Committee continued to include a member of the Finance Committee to have better communication about stormwater finance issues. O&M plans submitted for projects seeking a Stormwater	The Town will continue to investigate the establishment of a Stormwater Utility which would allow for the collection of MS4 user fees that could be used to fund O&M of municipally owned stormwater

Revised				<p>Management or Connection and Discharge permit include an estimated O&M budget and name the party responsible for O&M.</p> <p>The DPW budget for FY 2014 was increased to include O&M for large structural BMPs within the Town.</p> <p>The Town continues to consider establishing a Stormwater Utility which would allow the collection of MS4 user fees which could be used to fund O&M of municipally owned stormwater BMPs.</p>	<p>BMPs. Further consideration will be given when the new permit is finalized.</p> <p>Town to investigate grant funding opportunities to assist with BMP O&M.</p> <p>A consultant has been contracted to evaluate the O&M requirements for all large structural BMPs in town. Funding modifications may be considered after completing the evaluation.</p>
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6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 11
Educate Municipal Employees	Educate Municipal Employees	DPW Director	Annual Stormwater Training Sessions	The DPW Director attended seminars at the national convention of the American Public Works Association regarding MS4 O&M issues and compliance. Seminars attended included improved BMPs for snow and ice management to reduce the generation of residuals and a general MS4 Phase II review program.	DPW Director and Operations Manager will continue to look for opportunities to attend local MA Stormwater seminars, including financing options for Phase II general permit implementation.
6-2	Develop and Implement Municipal Operations Stormwater Plan	DPW Director	Develop and Adopt the plan by the end of Permit Year 2.	The Town continued to map the drainage infrastructure, perform condition assessments, and review operating plans in accordance with the findings. See BMP ID#3-1 for more details.	The Town intends to finalize the GIS drainage layer via Surface Manhole Inspections of the remaining 10% of the drainage network. Once GIS mapping is complete, the Town will further evaluate maintenance priorities and develop a plan.

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) <<if applicable>>

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities
Revised	Not Applicable – No TMDL's have been approved for any Waters within the Town of Ipswich				The Town will work with regulators and watershed stakeholders to develop appropriate goals for the next five year permit term regarding the impaired waters in Ipswich.
	Per the Final Year 2008 Integrated List of Waters, the Ipswich River and several other water bodies within the Town require a TMDL.				

Part IV. Summary of Information Collected and Analyzed

Summarize the results of information or data, if any, that were collected and analyzed during Permit Year 9, but were not included elsewhere in the annual report or requires further elaboration. Information or data could include results/trends from any storm or receiving water quality monitoring, assessment of particular BMP performance, or financial impact of program implementation.

Not Applicable

Part V. Program Outputs & Accomplishments (OPTIONAL)

(Since beginning of permit coverage unless specified otherwise by a **, which indicates response is for period covering April 1, 20112 through March 31, 2013)

Programmatic

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	n
Annual program budget/expenditures **	(\$)	
Total program expenditures since beginning of permit coverage	(\$)	
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)		

Education, Involvement, and Training

Estimated number of property owners reached by education program(s)	(# or %)	
Stormwater management committee established	(y/n)	y
Stream teams established or supported	(# or y/n)	
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	
Shoreline cleaned since beginning of permit coverage	(mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored **	(#)	1
▪ community participation **	(# or %)	
▪ material collected **	(tons or gal)	
School curricula implemented	(y/n)	

Legal/Regulatory

Regulatory Mechanism Status (indicate with "X")	In Place Prior to Phase II	Reviewing Existing Authorities	Drafted	Draft in Review	
				Adopted	Adopted
▪ Illicit Discharge Detection & Elimination					X
▪ Erosion & Sediment Control					X
▪ Post-Development Stormwater Management					X
Accompanying Regulation Status (indicate with "X")					
▪ Illicit Discharge Detection & Elimination					X
▪ Erosion & Sediment Control					X
▪ Post-Development Stormwater Management					X

Mapping and Illicit Discharges

	(Preferred Units)		Response
Outfall mapping complete	(%)	100	
Estimated or actual number of outfalls	(#)	115	
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	90	
Mapping method(s)			
▪ Paper/Mylar	(%)		
▪ CADD	(%)		
▪ GIS	(%)	90	
Outfalls inspected/screened **	(# or %)		
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)		
Illicit discharges identified **	(#)	1	
Illicit discharges identified (Since beginning of permit coverage)	(#)		
Illicit connections removed **	(#); and (est. gpd)		
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)		
% of population on sewer	(%)		
% of population on septic systems	(%)		

Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	
Site inspections completed **	(# or %)	
Tickets/Stop work orders issued **	(# or %)	
Fines collected **	(# and \$)	
Complaints/concerns received from public **	(#)	

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	
Site inspections (for proper BMP installation & operation) completed **	(# or %)	
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	
Low-impact development (LID) practices permitted and encouraged	(y/n)	

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr)	
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	
Qty of structures cleaned **	(#)	776
Qty. of storm drain cleaned **	(%, LF or mi.)	300 lf
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	

Basin Cleaning Costs			
• Annual budget/expenditure (labor & equipment)**	(\$)	10,000	
• Hourly or per basin contract rate **	(\$/hr or \$ per basin)	\$21/basin	
• Disposal cost**	(\$)		
Cleaning Equipment			
• Clam shell truck(s) owned/leased	(#)	1	
• Vacuum truck(s) owned/leased	(#)		
• Vacuum trucks specified in contracts	(y/n)		
• % Structures cleaned with clam shells **	(%)		
• % Structures cleaned with vacor **	(%)	2	

	(Preferred Units)	Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	2
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)	12
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	10,000
• Hourly or lane mile contract rate **	(\$/hr. or in mi.)	
• Disposal cost**	(\$)	
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	1
• Vacuum street sweepers owned/leased	(#)	
• Vacuum street sweepers specified in contracts	(y/n)	
• % Roads swept with rotary brush sweepers **	%	90
• % Roads swept with vacuum sweepers **	%	

Reduction (since beginning of permit coverage) in application on public land of:
 ("N/A" = never used; "100%" = elimination)

▪ Fertilizers	(lbs. or %)
▪ Herbicides	(lbs. or %)
▪ Pesticides	(lbs. or %)
Integrated Pest Management (IPM) Practices Implemented	(y/n)

	(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% NaCl % CaCl ₂ % MgCl ₂ % CMA % K _{ac} % KCl % Sand	
Pre-wetting techniques utilized **	(y/n or %)	
Manual control spreaders used **	(y/n or %)	
Zero-velocity spreaders used **	(y/n or %)	
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	
% of salt/chemical pile(s) covered in storage shed(s)	(%)	
Storage shed(s) in design or under construction	(y/n or #)	
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	

Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n

	# or y/n	
<ul style="list-style-type: none"> • Treatment units induce infiltration within 500-feet of a wellhead protection area 		