

**Municipality/Organization:** Town of Ipswich, MA

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**EPA NPDES Permit Number:** MA041199

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**MassDEP Transmittal Number:** W-035827

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**Annual Report Number & Reporting Period:** Year 9  
April 1, 2011 – March 31, 2012

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

### Part I. General Information

Contact Person: Richard Clarke Title: Director of Public Works

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Telephone #: 978-356-6612 Email: rickc@ipswich-ma.gov

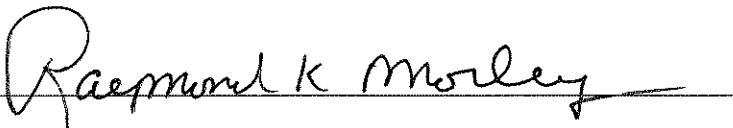
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Mailing Address: 25 Green Street, Ipswich, MA 01938

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#### Certification:

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

Signature: 

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Printed Name: Raymond K. Morley

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Title: Vice Chairman, Board of Selectmen

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Date: 4/30/2012

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## **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#3-1**

- a. The Town continued its manhole and catchbasin inspection and GPS location program throughout this permit year. Through the end of the year, it is estimated that 85% to 90% of the system has 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 our 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 catchbasins that were noted to contain a significant amount of debris during the 2009 and 2010 inspections.
- b. After completing the catchbasin cleaning program, the Town will perform follow-up internal inspections of the structures to determine their structural condition and develop a program for replacing or modifying those structures that are determined to be in need of improvement.
- c. The Town has performed storm drain cleaning and t.v. inspections within the Charlotte and Randel Road areas in anticipation of proposed roadway improvement projects. Although illicit connections were not detected, the results of the inspections revealed that the drainage systems in both areas are in need of replacing. The designs for these new systems have been completed and they include improved sediment removal capabilities. It is anticipated that the construction of these systems will be completed during the next permit year.
- d. During the past year, the Town, through our Shellfish Department, completed a sampling program within the Ipswich River. Increased levels of bacteria were detected and as a result, the Town completed an outfall sampling program. The results of this sampling program did not indicate the presence of illicit connections to the storm drain system. Further investigations of potential sources are planned.

### **BMP ID#5-1**

- a. The Town has continued to administer the established stormwater management regulations for the Issuance of Connections & Discharge Permits and Stormwater Management Permits. During this year, the Town issued 16 Connection and Discharge Permits and renewed one Stormwater Management Permit. In the upcoming permit year, the Town will be working to permit the pre-existing connections to the MS4 in schedule with the regulations and will work to update the building permit application to include specific questions that will dictate whether or not an applicant will require a Stormwater Permit.

### **GENERAL**

- a. The Town re-applied for, and has received a grant from the Massachusetts Division of Coastal Zone Management for the design of a structural BMP to improve the quality of stormwater that passes beneath the Hammatt Street parking lot and

discharges to Farley Brook and the Ipswich River. The BMP design project was initiated during the end of the permit year and will be completed in 2012.

- b. The Department of Public Works (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 2011. This practice not only reduces the costs associated with sanding operations, but also significantly reduces the sediment loading to the storm drainage system.
- c. The Town completed a storm drainage system improvement project in the area of 417 Linebrook Road. The improved system includes new catchbasins and manholes with collection sumps to reduce sediment loading to the receiving water body.
- d. The complete reconstruction of Washington Street has been ongoing and will be completed in 2012. This roadway reconstruction project includes an improved drainage system that will reduce the potential for sediment transport to the receiving water body.
- e. During this permit year the Town completed the design and selected a contractor to complete 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, which will be constructed during the spring of 2012, will include all new catchbasins and manholes with sumps for sediment collection. When complete, the new system will greatly reduce sediment loading to the receiving water body.
- f. Throughout the past permit year, the DPW has actively worked to improve conditions within the DPW yard, focusing on the management of stored materials. Recently, the DPW contracted to have excess stormwater system residual materials (i.e., street sweeping and catchbasin cleaning residuals) hauled to a disposal facility. In addition, the Town has also contracted an environmental consulting firm to prepare an application for a Beneficial Use Determination (BUD) from the Department of Environmental Protection for the management of generated stormwater 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.
- g. 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.
- h. 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 9 (Reliance on non-municipal partners indicated, if any)	Planned Activities–Permit Year 10
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.	Working with Greenscapes, the Town developed a stormwater recycling brochure that was mailed to all residents. The brochure details stormwater recycling practices and benefits.  The Town has continued to conduct educational presentations for the Board of Selectmen in support of funding for the new NPDES permit.  Town continues to host a link through the DPW webpage to provide information about the Stormwater Bylaw as well as post Best Management Practice information 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.	The Town will investigate educational brochures for distribution to residents. Development of new brochures may depend on the finalization of the new permit.  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.
Revised					

<p>Revised</p>	<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 work to get a publication on the end result of its work with the Clarke Pond Committee.</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 9 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 10
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 one joint collection day on May 21, 2011 and one DPW collection day on September 29, 2011. The DPW also continued an ongoing mercury recovery program throughout the permit year. The Town continued to see significant waste reduction through the new single stream recycling program in this permit year.	Household Hazardous Waste Collection Day is scheduled for September 29, 2012. Two Special Collection events are scheduled for May 19, 2012 and September 29, 2012.
Revised		Board of Health, DPW Director, & Recycling Coordinator		The Town instituted an ongoing fluorescent bulb collection program through Wheelabrator Tech, Inc. and an ongoing 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 9 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 10
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. In addition, as part of the design for the Charlotte Road reconstruction project, a thorough assessment of the existing drainage network was completed and was recommended for replacement.</p> <p>Additional surface manhole inspections were completed, bringing the total complete to approximately 85%-90% of the comprehensive system.</p> <p>Collected data included structure condition and pipe (inlet &amp; 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 recommended to the Planning Board and Conservation Commission that as-built plans for all large development projects be submitted to the DPW so that storm drain mapping can be updated in the GIS.</p>	<p>The Town is planning to purchase a GPS unit and to use this unit to complete the comprehensive drainage system mapping. The information to be collected will include catchbasins and manhole locations, connection piping, inlets and outlets, as well as any other drainage assets within the Town's limits and the collected data will be added to our GIS.</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.	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.  The Town will investigate grant opportunities to fund further water quality investigations and BMP design/construction to improve outfall water quality that may be impacting shellfish beds.
Revised				Completed
3-3	Conduct Illicit Discharge Educational Program	DPW Director	Included in Minimum Control Measures 1,2 and 6.	Mailing 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.
3-4	Develop Bylaw Prohibiting Illegal Dumping of Non-SW into MS4	DPW Director	Develop Bylaw	A Stormwater Management Bylaw was passed at Fall Town Meeting on October 20, 2008. This bylaw prohibits illicit discharges to the MS4.
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



#### 4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 9 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 10
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.	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.	The Planning Board will hear the recommendations from the Planning and Development Department on the changes to the will Site Plan Review Regulations in the spring-summer of 2012.
Revised			Planning Board also intends to draft a bylaw that will address projects of less than one acre.		
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.	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).	To be determined.
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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 9 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 10
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 Department did not issue any Stormwater Management permits for 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 Revised	Establish Funding Mechanism for Operation & Maintenance of Structural Best Management Practices	DPW Director	Investigation of potential funding mechanisms.	<p>The Stormwater Advisory Committee continued to include a member of the Finance Committee to have better communication about stormwater finance issues. O&amp;M plans submitted for projects seeking a Stormwater Management or Connection and Discharge permit include an estimated O&amp;M budget and name the party responsible for O&amp;M.</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&amp;M of municipally owned stormwater BMPs. The DPW's Operations Manager has attended educational seminars regarding the development of Stormwater Utility and forwarded information to personnel within Town Hall.</p>	<p>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&amp;M of municipally owned stormwater 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&amp;M.</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 9 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 10
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 on implementing the changes to the MA Stormwater Financing options. We will also work to have Town Selectmen attend a Stormwater Financing Seminar to make them more aware of the funding gap that will ensue once the new permit is issued.
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 10-15% 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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities
	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.
Revised	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, 2010 through March 31, 2011)

**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**

	In Place Prior to Phase II	Reviewing Existing Authorities	Drafted	Draft in Review	Adopted
Regulatory Mechanism Status (indicate with "X")					
▪ 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)	(%)	85-90
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	85-90
Outfalls inspected/screened **	(# or %)	2
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	
Illicit discharges identified **	(#)	0
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 **	(#)	15%
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 vactor **	(%)	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 ln 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 <sub>2</sub> % MgCl <sub>2</sub> % CMA % Kac % 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	
• Treatment units induce infiltration within 500-feet of a wellhead protection area		