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

**EPA NPDES Permit Number:** MA041199

**MassDEP Transmittal Number:** W- 035827

**Annual Report Number & Reporting Period:** Year 8 (April 1, 2010 – March 31, 2011)

## NPDES PII Small MS4 General Permit Annual Report (Due: May 1, 2011)

### Part I. General Information

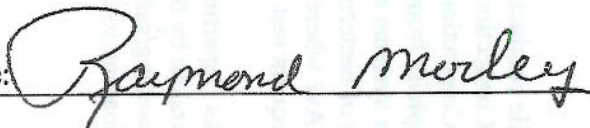
**Contact Person:** Richard Clarke **Title:** Director of Public Works

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

**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:** Raymond K. Morley

**Title:** Vice Chairman, Board of Selectmen

**Date:** April 29, 2011

## Part II. Self-Assessment

The Town of Ipswich has completed the required self-assessment and has determined that our municipality is in significant compliance with the permit conditions. Particularly important achievements associated with BMP ID#3-1 were the surface manhole and catch basin inspections, GPS locating, and GIS input of approximately 80% of the Town wide drainage network. With this information imported into the Town's GIS drainage data layer we can now track which catch basins need cleaning, when they were cleaned, and determine how often we should be cleaning individual catch basins based on the history of the cleaning and inspections. Using this information the Town has decided within this permit year to do selective cleaning of catch basins by means of Vac-Haul as opposed to the traditional clam shell bucket that has been used for several years in Town. Now with these structures 100% clean, the Town can now complete an internal inspection of each of these structures to determine its condition. This will enable the Town to better determine which catch basin will need replacing and which catch basins can be modified. The Town has also done some cleaning and TV inspectional work in a couple of project areas, most notably the Washington Street corridor in anticipation of an upcoming road improvement project.

Another notable achievement this permit year is associated with BMP ID#5-1 and it was the finalization and implementation of the two stormwater management regulations for the Issuance of Connection & Discharge Permits and Stormwater Management Permits. Since their implementation, the Town has issued three Connection and Discharge Permits and three Stormwater Management Permits. In the upcoming permit year the Town will be working to permit the preexisting connections to the MS4 in schedule with the regulations as well as working to update their building permit application to require a permit applicant to answer specific questions that will dictate whether or not an applicant will need a stormwater permit.

Also in this permit year while conducting the surface manhole inspections as part of BMP ID#3-2 it was brought to the Town's attention that there were three suspected Illicit Connections on Great Neck via direct connection into catch basins. Through the Board of Health the Town has located and removed the one Illicit Connection that was found during home inspections of the potential violators. Also associated with BMP ID#3-2 the Town had a residential complaint from 32 Linebrook Road regarding localized concentrations of bacteria in standing water on their property. The Town tested two stormwater systems at locations prior to reaching the suspected property. The results from one of the outfall test did come back with slightly elevated levels of bacteria, so as a follow up to the test, the Town completely cleaned and video inspected the drainage network system at the end of Farley Ave where the elevated levels of bacteria were found. However the results of the video inspection did not find any illicit connections and subsequent test results since the cleaning came back negative for bacteria.

In addition, the Public Works Department continues to actively work to integrate stormwater management improvements into all capital improvement projects undertaken by the department as well as all in house drainage repair/improvement projects. All sand/salt spreading equipment used for winter sanding/salting operations were re-calibrated in the fall of 2010. In addition to reducing the cost of sanding operations, this also reduced sediment loading to catch basins and wetlands.

During this year, the Town also applied for a grant from the Massachusetts Division of Coastal Zone Management. Grant funding, if awarded, would have been used for the design of a BMP to improve the quality of stormwater that passes beneath the Hammett Street parking lot and discharges to Farley Brook. Although funding was not awarded for this project during this period, the Town will again pursue this opportunity.

During this permit year the Public Works Operations Manager's position was filled on August 2, 2010 and will be the main contact moving forward in upcoming permit years.

The Planned Activities section of the annual report has been developed as a continuation of the 2003 permit. When the new permit is finalized, planned activities may need to be revised.

Activity	Responsible Party	Start Date	End Date	Status	Comments
Annual Report	Public Works	2009	2010	Completed	Annual report completed and submitted to the Board of Selectmen.
BMP Design	Public Works	2009	2010	In Progress	Design of BMP for Hammett Street parking lot. Grant funding not awarded.
Stormwater Management Plan	Public Works	2009	2010	Completed	Stormwater management plan updated to reflect current regulations.
Public Works Operations	Public Works	2009	2010	Ongoing	Public Works Operations Manager position filled on August 2, 2010.
Stormwater Inspections	Public Works	2009	2010	Ongoing	Stormwater inspections conducted throughout the year.
Stormwater Maintenance	Public Works	2009	2010	Ongoing	Stormwater maintenance performed on various sites.
Stormwater Reporting	Public Works	2009	2010	Ongoing	Stormwater reporting maintained for all sites.
Stormwater Training	Public Works	2009	2010	Completed	Stormwater training provided for staff.
Stormwater Audits	Public Works	2009	2010	Ongoing	Stormwater audits conducted on various sites.
Stormwater Permits	Public Works	2009	2010	Ongoing	Stormwater permits renewed for various sites.
Stormwater Best Management Practices	Public Works	2009	2010	Ongoing	Stormwater best management practices implemented on various sites.
Stormwater Pollution Prevention Plans	Public Works	2009	2010	Ongoing	Stormwater pollution prevention plans developed for various sites.
Stormwater Construction Site Inspections	Public Works	2009	2010	Ongoing	Stormwater construction site inspections conducted throughout the year.
Stormwater Construction Site Maintenance	Public Works	2009	2010	Ongoing	Stormwater construction site maintenance performed on various sites.
Stormwater Construction Site Reporting	Public Works	2009	2010	Ongoing	Stormwater construction site reporting maintained for all sites.
Stormwater Construction Site Training	Public Works	2009	2010	Completed	Stormwater construction site training provided for staff.
Stormwater Construction Site Audits	Public Works	2009	2010	Ongoing	Stormwater construction site audits conducted on various sites.
Stormwater Construction Site Permits	Public Works	2009	2010	Ongoing	Stormwater construction site permits renewed for various sites.
Stormwater Construction Site Best Management Practices	Public Works	2009	2010	Ongoing	Stormwater construction site best management practices implemented on various sites.
Stormwater Construction Site Pollution Prevention Plans	Public Works	2009	2010	Ongoing	Stormwater construction site pollution prevention plans developed for various sites.

**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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 9
1-1	Procurement/Development of educational 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.	The Town has continued education by means of presentations to the Board of Selectmen in support of the finalization of the new Stormwater Regulations. In addition, the 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 begun 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 continue to work with the Clark Pond Committee. 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 the Stormwater information on its website and will work to centralize all the information and make it more user friendly.
Revised				The Town continued several additional educational programs. The Town publishes 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.	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 the work with the Clark Pond Committee.

## 2. Public Involvement and Participation

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-Permit Year 9
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 15, 2010 and one DPW collection day on September 25, 2010. The DPW also continued an ongoing mercury recovery program throughout the permit year. The Town also has seen significant waste reduction through the new single stream recycling program in this permit year.	Household Hazardous waste collection day is scheduled for September 25, 2011. Two Special Collection events are scheduled for May 21, 2011 and September 25, 2011. The Town is working to incorporate an ongoing fluorescent bulb collection program through Wheelabrator Technologies, Inc. as well as an ongoing tire and battery collection program through a scrap metal program (North Shore Scrap Steel of Gloucester, MA) to accept anything with 60% metal. Tires will be accepted due to the hauler being associated with an automobile service station (Tally's Truck of Gloucester, MA).
Revised		Board of Health, DPW Director, & Recycling Coordinator			

### 3. Illicit Discharge Detection and Elimination

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-Permit Year 9
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	BMP completed in Permit Year 4, see prior report. In addition, as part of the design for the Washington Street reconstruction project, a thorough assessment was completed on the existing drainage network and a list of recommended improvements was developed. Furthermore, surface manhole inspections were completed for 80% of the comprehensive drainage system. Collected data included structure condition, pipe (inlets & outlets) size and material. Catch basins were also inspected and sediment depth documented. This information was used to determine which catch basins needed priority cleaning.	Complete comprehensive drainage system mapping to include catch basins, manholes, connecting pipes, inlets and outlets as well as any other drainage assets within the Town's limits and input this data into our GIS system.  The DPW will recommend to the Planning Board and the Conservation Commission that approvals of large projects include a standard condition requiring the permittee to submit As-Built plans to the DPW. This will facilitate the updating of storm drain information in the Town's GIS database.

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.	<p>During surface manhole and catch basin inspections, it was reported that three catch basins had potential illicit connections. With the help of the Board of Health, home inspections verified that one of the three catch basins did have an illicit connection. The illicit connection was subsequently removed. Also, the property owner at 32 Linebrook Road reported that bacteria was found in standing water on their property which has two Town owned outfalls. The Town did its own investigation and a sample taken from one of the outfalls tested positive for bacteria. We then conducted a TV inspection of the associated pipe network, cleaned the basins within the pipe network and retested. There were no illicit connections detected during the TV inspections and a water sample taken after the cleaning was negative for bacteria.</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>
3-3	Conduct Illicit Discharge Educational Program	DPW Director	Included in Minimum Control Measures 1, 2 and 6.	<p>This permit year the Town worked on compiling information for residents to reference once they receive their letter regarding any possible illicit connections they may have. Information on illicit discharges as well as the Connection and Discharge Permit program may also be found on the Ipswich Stormwater Management web page which is accessible via a link on the DPW web page.</p>	<p>Mailings will be 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>
3-4	Develop Bylaw Prohibiting Illegal Dumping of Non-SW into MS4	DPW Director	Develop Bylaw	<p>A Stormwater Management Bylaw was passed at Fall Town Meeting on October 20, 2008. This bylaw prohibits illicit discharges to the MS4.</p>	<p>Completed.</p>

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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 9
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 are working 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 and the Planning and Development Department will continue to work towards the finalization and implementation of revised Site Plan Review Regulations.
4-2	Improve Site Plan Review Process	DPW Director	Draft revised process and tracking tool.	This Permit Year the Town converted all Building Permits to online permitting only. However building and site plans still are not yet being sent electronically so applicants need to have a one on one review of their plans by the DPW Director or his designee to get a digital signoff.	Working on getting building and site plans changed to electronic versions only to minimize the still apparent need to physically go to each department with your plans for signoff.
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 hearings, where letters and verbal comments on the project's stormwater management program may be entered into the record.	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.	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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 9
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 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 has issued three Stormwater Management permits for projects. Due to the small scale of the projects, none of the permit applications included and O&M plan.	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.  The DPW will request 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.

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 included a member of the Finance Committee to have better communication about stormwater finance issues. O&M plans submitted for projects seeking a Stormwater Management or Connection and Discharge permit shall include an estimated O&M budget and shall name the party responsible for O&M.	The Town is considering 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.
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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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 9
6-1	Educate Municipal Employees	DPW Director	Annual Stormwater Training Sessions	Rick Clarke, DPW Director & Frank Ventimiglia, DPW Operations Manager both attended a workshop entitled “2011 MHA Winter Meeting” on February 3 <sup>rd</sup> , 2011. At which one of topics of discussion was Preparing for Phase II Storm Water Regulations.	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 Regulations and 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 revise operating plans in accordance with the findings. See BMP ID# 3-1 for more details.	The Town will work towards finalizing the GIS drainage layer via Surface Manhole Inspections on the remaining 20% 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-Permit Year 9
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 8, but were not included elsewhere in the annual report or requires further elaboration. Information and 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
<b>Regulatory Mechanism Status (indicate with "X")</b>					
▪ Illicit Discharge Detection & Elimination					X
▪ Erosion & Sediment Control					X
▪ Post-Development Stormwater Management					X
<b>Accompanying Regulation Status (indicate with "X")</b>					
▪ 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)	(%)	80
<b>Mapping method(s)</b>		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	80
Outfalls inspected/screened **	(# or %)	2
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)	1, 25
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

	(Preferred Units)	Response
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.)	
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	
<b>Basin Cleaning Costs</b>		
• Annual budget/expenditure (labor & equipment)**	(\$)	10,000
• Hourly or per basin contract rate **	(\$/hr or \$ per basin)	185/hr
• Disposal cost**	(\$)	
<b>Cleaning Equipment</b>		
• Clam shell truck(s) owned/leased	(#)	
• Vacuum truck(s) owned/leased	(#)	
• Vacuum trucks specified in contracts	(y/n)	y
• % Structures cleaned with clam shells **	(%)	
• % Structures cleaned with vactor **	(%)	15
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)	
<b>Annual Sweeping Costs</b>		
• Annual budget/expenditure (labor & equipment)**	(\$)	10,000
• Hourly or lane mile contract rate **	(\$/hr. or ln mi.)	
• Disposal cost**	(\$)	
<b>Sweeping Equipment</b>		
• 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 Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	
• Treatment units induce infiltration within 500-feet of a wellhead protection area	# or y/n	

<p>1. Storm water outfalls to public water supplies eliminated or relocated</p> <p>2. Installed or planned treatment BMPs for public drinking water supplies and their protection areas</p> <p>• Treatment units induce infiltration within 500-feet of a wellhead protection area</p>	<p>1. Y</p> <p>2. Y</p> <p>• Y</p>	
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