

Municipality/Organization: City of Quincy
EPA NPDES Permit Number: MAR041081
MassDEP Transmittal Number: W-041020
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: Peter Hoyt Title: Superintendent of Sewer and Water
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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: 
Printed Name: Thomas P. Koch
Title: Mayor
Date: 4/27/11

Part II. Self-Assessment

From April 1, 2010– March 31, 2011 the City of Quincy continued to make progress implementing BMPs and meeting the General Permit requirements. Stormwater management activities to note include:

- All ordinances required by EPA's 2003 MS4 General Permit are in place.
- The City has made substantial progress on developing a complete drainage system map. Map of the MS4 shows the locations of all outfalls, and catch basins, drainage manholes, ditch inlets, tide gates, and connectivity, where known.
- The City has proposed to enhance and re-align a portion of Town Brook within Quincy Center. An Environmental Notification Form was submitted in March 2011 to EOEEA, as required by MEPA. As part of this project, during the Town Brook culvert walkthrough conducted in July 2008, the City identified numerous structural issues, utility conflicts, and illicit sewer connections, as well as clogged and collapsed sewer outfalls. City evaluated nine project alternatives, and selected an alternative that includes riverfront area enhancements, open channel sections of the Brook, fish habitat enhancements, flood control, water quality improvements (rain gardens), and removal of illicit connections. The City expects the project to be completed in November 2012.
- Starting in October 2010, City began implementation of the Coastal Manhole Rehabilitation Program. The City is rehabilitating and replacing approximately 150 sewer manholes. Main goal was to remove infiltration/inflow and tidal water from the sanitary sewer system. During the project, identified a few cross connections from catch basins to sewer, which are proposed for removal. This project will help address contamination of stormwater from the sanitary sewer during periods of flooding.
- City has included twelve (12) drainage-related projects on the Capital Improvements Plan that address immediate public health and safety needs. Many of these projects were identified on Woodard & Curran's April 2009 report summarizing an evaluation of sixteen areas within the City identified by the Department of Public Works (DPW) that have regular to periodic problems with drainage performance. Several of these projects address requirements of EPA's 2003 MS4 General Permit and include water quality improvements.
- City Councilor Doug Gutro has proposed the City consider limiting impervious areas on residential lots, and the City begin to adopt/require Low Impact Development standards City-wide.

Planned activities for the next permit term have not been designated unless a BMP under this permit term was not fully completed or is an ongoing effort. Quincy's Stormwater Management Program will be re-assessed during development of the next NOI to more efficiently use the City's limited resources and staff time to leverage better stormwater management.

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
1-1 Revised	Classroom education on stormwater	Department of Public Works	Outreach to Ecology Clubs in Schools	The DPW distributed water conservation booklets to the City’s elementary schools. In addition, the City makes “Dwayne the Storm Drain” coloring books available.	Measurable goals for 2003 General Permit have been met.
1-2 Revised	Flyer & Brochure distribution	Department of Public Works	Develop & distribute materials for public education	DPW continued to hand out water conservation flyers provided by the MWRA. In addition, City distributes information about curbside waste and recycling, yard waste, household hazardous waste collection, and proper disposal of hazardous waste/mercury/needles	Measurable goals for 2003 General Permit have been met. DPW plans to continue with this practice.
1-3 Revised	Using the Media and Internet	Department of Public Works	Issue One Local Cable Public Service Announcement (PSA)	In 2010 the City aired a series on local public access (QATV) titled “How Quincy Works”, which showed how the City conducts water, sewer, and drainage-related work, and presented new equipment purchased by the City for this work. The sewer segment explained that the sewer and stormwater systems are not connected, not to put pet waste in catch basins, and that the stormwater system drains to Quincy Harbor.	Measurable goals for 2003 General Permit have been met. As budget allows, the City plans to continue with this practice.

1-3	Using the Media and Internet	Department of Public Works	Annual article by Sewer/Water/Drain Superintendent	In August 2010, an article titled “South Shore beaches plagued by polluted storm water” was published in the Patriot Ledger, which discussed the impact of stormwater discharges on water bodies and beaches. It also identified ways the public can reduce the pollutants in stormwater.	Measurable goals for 2003 General Permit have been met. 2010 article was not issued by DPW, but met the intent of the measurable goal of this BMP.
Revised					
1-3	Using the Media and Internet	Department of Public Works	Publish one storm water press release each year	Due to limited staff time and limited budgets, DPW newsletter is not longer mailed directly to households. The DWP now uses the DPW website for this purpose and plans to add stormwater information.	If budget is available, add stormwater information to the Department of Public Works website.
Revised					
1-3	Using the Media and Internet	Department of Public Works	Expand City Website to include Storm Water Topics and links	DPW continues to plan stormwater updates for website.	Assuming budget is available, develop stormwater content for DPW website.
Revised					
1-4	Public Safety Fair	All City Departments	Annual Public Safety Fair	Due to budget constraints, the Annual Public Safety Fair was not held in 2010.	If the Public Safety Fair is held, distribute stormwater information..
Revised					
1-5	Neighborhood Forums of Flooding	Department of Public Works	PY7 - Perform outreach to residents in response to recent flooding PY8 – Perform outreach in response to projects identified to alleviate flooding	To educate the public about the Capital Improvement Projects planned to address flooding the City help meetings on: <ul style="list-style-type: none"> • April 27, 2010 in West Quincy • Feb 7, 2011 & March 14, 2011 for City Council • March 2, 2011 in Ward 4; and • March 23 & March 31 in Ward 1 Presentations included material about stormwater and flooding issues, g, and projects planned to alleviate issues.	BMP complete. Measurable goals for the 2003 General Permit have been met.

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
2-1	Storm Water Committee	Department of Public Works (DPW)	Establish the Committee and meet quarterly.	There are several committees specific to receiving waters (e.g., Wollaston Beach Committee) or other environmental issues. As needed, the DPW participates in these groups to discuss the City's stormwater program.	Measurable goals for 2003 General Permit have been met. As needed, attend meetings to discuss progress and future goals for watersheds.
Revised					
2-2	Storm Cleanup and Management	DPW	Track Clean-up activities per year. Track number of clean-up participants Track number of miles cleaned by volunteers	The annual <i>Cleaner, Greener Quincy</i> was held on the first Saturday in May in 2010. Residents, volunteers and all city departments cleaned the City's parks, beaches, schools, marshes, and open space areas. Numerous beach cleanups were held in 2010, including April 24 (MA Park Service Day), May 1 (Cleaner Greener Quincy), and October 3 (CoastSweep).	Measurable goals for 2003 General Permit have been met. <i>Cleaner, Greener Quincy</i> has been held for over 20 years. The City plans to continue with this practice. <i>Cleaner Greener Quincy</i> will be held again on May 7, 2011. Post storm cleanup is a function of the DPW and Parks Departments.
Revised					

2-4	Pet Waste Collection	DPW	Track number of Dog Parks Track number of Signs Posted Track number of Educational Materials Distributed Track number of “Pooper -Scooper Stations”	The City continues to plan the development of a Dog Park at Faxon Park. Signs are posted in a few locations in the City. City Animal Control Department website includes information about cleaning up pet waste. 26 mutt-mitt stations were re-established, and located at residents’ requests.	Many new, planned developments in the City are incorporating dog parks into their site design. High Point Condominiums is once such development. Continue maintaining “pooper-scooper stations.”
Revised					
2-5	Flagship Beach Program	DPW & EPA		Wollaston Beach is an EPA “Flagship Beach,” which receives frequent water quality monitoring and pollution source assessments. City continued partnership with EPA biologists on water quality testing and identification of bacteria sources.	The City plans to continue working with EPA on the Flagship Beach Program.
Revised					

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
3-1	Drainage System Mapping	DPW	Locate all outfalls	The City has developed a drainage system map that shows the locations of all outfalls and the names of the waterbodies that receive discharges from the outfalls.	Measurable goals for 2003 General Permit have been met.
Revised					

3-1 Revised	Drainage System Mapping	DPW Engineering	Complete drainage system mapping	Drainage system mapping is complete. Map includes catch basins, drainage manholes, ditch inlets, tide gates, and connectivity, where known. Summer interns continue to field verify digitized plans	Measurable goals for 2003 General Permit have been met. As budget allows, continue field verification of drainage system.
3-2 Revised	Outfall Testing Program	DPW	Inspect all City discharges	The DPW regularly inspects outfalls and removes debris from catch basins and outfalls in problem areas, to avoid flooding. As part of the Town Brook Enhancement Project in Quincy Center, the City identified numerous illegal sewer connections. The project includes removal of these illegal connections. The City expects the project to be complete by November 2012.	City will continue to clean structures in problem areas as needed and as budget allows.
3-2 Revised	Outfall Testing Program	Health Dept	Sample discharges with flow present	The Health Department collects weekly samples from thirteen beaches. DCR collects daily samples at four locations on Wollaston beach. EPA conducts addition testing conducted during summer (see BMP 3-5). Results of beach water quality monitoring are published on the Massachusetts Department of Public Health – Bureau of Environmental Health website. The City posts a Bathing Beach Water Sampling Report Summary on the Health Department website.	Continue bathing beach testing.

3-2	Outfall Testing Program	Health Dept.	Follow-up testing on discharges showing contamination	Health Department notifies DPW of areas with high bacteria counts. DPW follows up.	Continue practice.
Revised					
3-3	Illegal Dumping Education	DPW	Storm water committee to distribute flyers, posters & other educational material	The topic of illegal dumping and the connection between the storm drain and the beaches was addressed in the public access services titled "How Quincy Works" The article titled "South Shore beaches plagued by polluted storm water" explains that residents shouldn't dump trash or other materials into catch basins because it affects water quality at the beach. Friends of Wollaston Beach have sponsored stenciling of "no-dumping" on catch basins around Wollaston Beach.	Measurable goals for 2003 General Permit have been met. Continue practice.
Revised					
3-3	Illegal Dumping Education	DPW	Document and investigate illegal dumps reported by citizens	DPW documents illegal dumping as part of daily complaint log, and investigates all illegal dumps.	Continue current practice.
Revised					
3-3	Illegal Dumping Education	DPW	Enforce Penalties	As needed, DPW & Inspectional Services enforces penalties and issues citations.	Measurable goals for 2003 General Permit have been met. Continue enforcement per Ordinance.
Revised					
3-4	Ordinance Review and Update	DPW	Review and revise ordinances	Ordinance Governing Discharges to the Municipal Storm Drain System enacted in 2005 (#2005-094).	Measurable goals for 2003 General Permit have been met.
3-5	Flagship Beach Program	DPW & EPA		City continued partnership with EPA biologists on water quality testing and identification of bacteria sources.	Continue working with EPA Biologists.

3-6	Sewer Manhole Replacement Project	Department of Public Works	<p>PY7 – Perform sewer evaluation to prevent pollution of sensitive areas</p> <p>PY8 = Implement recommendations of sewer evaluation</p>	<p>Starting in October 2010, City began rehabilitation and replacement of approximately 150 sewer manholes along tidal areas, East Squantum adjacent to Wollaston Beach. The primary goal of this effort was to remove infiltration and inflow from groundwater and tidewater. I/I in the separate sewer system has resulted in sewer overflows. When it rains heavily, the MS4 backs up, and the sewer system overflows, resulting in contamination of stormwater. The Manhole Replacement Project will help address these water quality problems.</p> <p>During the project, the City identified a few cross connections from catch basins to sewer, which are proposed for removal.</p>	City will continue Manhole Replacement Project
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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
4-1	Ordinance Review and Updates	DPW	Review and Revise current erosion and sediment control ordinance	Land Disturbance ordinance enacted in 2008 (#2008-125). Ordinance requires erosion and sediment control at construction sites disturbing one or more acres or less if part of common plan of development).	Measurable goals for 2003 General Permit have been met.
Revised					Continue to implement and enforce ordinance.

4-2	Construction Reviews	DPW	Develop and implement standard project review procedures	City's Engineering Dept. implemented a construction review process on sites regardless of lot size to ensure that all stormwater runoff from construction sites is in compliance with BMP's. In addition, the Conservation Commission inspects construction sites for proper implementation of erosion and sediment control BMPs.	Measurable goals for 2003 General Permit have been met.
Revised					
4-2	Construction Reviews	DPW & Building Inspection Services	Develop and implement standard construction details	City continues to add construction details to files as needed.	Measurable goals for 2003 General Permit have been met. Continue current practices.
Revised					
4-2	Construction Reviews	Engineering	Develop and implement standard inspection review procedures, document inadequate sites/plans reported and non-complaint permits	Engineering Department and Conservation Commission implements standard inspection review procedures. Engineering Department rejects inadequate plans. Permits are not issued until appropriate corrections are made to plans.	Measurable goals for 2003 General Permit have been met. Continue current practices.
Revised					
4-3	Public Information	DPW	Continue "Hot Line"	DPW continues to make 24 hour hot line available, and responds to complaints received.	Measurable goals for 2003 General Permit have been met. Continue use of hot line for public complaints.
Revised					
4-3	Public Information	DPW	Document & investigate complaints	DPW maintains daily log and enters all complaints received. Complaints are investigated as needed.	Measurable goals for 2003 General Permit have been met. Continue to maintain log and investigate complaints, as needed and as budget allows.
Revised					

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
5-1	Ordinance Review and Update	Department of Public Works	Review and Revise Current Storm Water Ordinances	Post Construction ordinance enacted in 2008 (#2008-126). Ordinance regulates post-construction stormwater runoff from new development and redevelopment projects disturbing one or more acres (or less if part of common plan of development).	Measurable goals for 2003 General Permit have been met. Continue implementation and enforcement of ordinance.
Revised					
5-1	Ordinance Review and Update	Engineering Dept.	Develop and implement standard construction details and policies	City's Engineering Department has implemented standard construction details and policies, and conducts detailed review.	Measurable goals for 2003 General Permit have been met. Continue current practices.
Revised					
5-2	Project Reviews	DPW	Develop and implement standard Project Review Procedures	Engineering and the Sewer Water Drain Division have standard project review procedures in place.	Measurable goals for 2003 General Permit have been met. Continue current practices.
Revised					
5-2	Project Reviews	DPW & Building Inspection Services	Develop and implement standard construction details	As needed, existing files are updated with construction details.	Measurable goals for 2003 General Permit have been met. Continue current practices.
Revised					
5-2	Project Reviews	Engineering	Develop and implement Standard Inspection Review Procedures	Engineering, Sewer, Water, & Drain and Building Inspectors have standard project review and inspection procedures in place	Measurable goals for 2003 General Permit have been met. Continue current practices.
Revised					
5-3	Project Reviews	Building Inspectors	Document inadequate site plans reported by inspectors	Ordinance enforced jointly by DPW & Inspectional Services	Measurable goals for 2003 General Permit have been met. Continue current practices.

5-4	Project Reviews	DPW	Report non-compliant permits	Departments coordinate to resolve issues of non-compliance or the potential thereof.	Measurable goals for 2003 General Permit have been met. Continue current practices.
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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
6-1 Revised	Predictive Catch Basin Program	Department of Public Works	Continue with current program	City continued the current catch basin, storm drain, outfall, and tidegate inspection program. Structures (catch basins, drainage pipes, and outfalls) are cleaned as needed to address flooding issues.	Measurable goals for 2003 General Permit have been met. Continue current practices.
6-2 Revised	Street Cleaning Program	Department of Public Works	Continue with current program, review the effectiveness of the program	All streets were swept twice in 2010: once in Spring and once in Fall. Weather permitting, the City sweeps business district and high traffic areas throughout the year.	Measurable goals for 2003 General Permit have been met. Continue to sweep streets as budget allows.
6-3 Revised	Inspect City owned BMPs for Retrofit Opportunities	Department of Public Works	Inspect three structural BMPs per year and implement two retrofit projects	Throughout the year, the City inspected numerous structural BMPs. In 2010, as part of the Town Brook Enhancement Project in Quincy Center, the City proposed water quality treatment structures (rain gardens), to be located in open space parcels on Mechanic Street, which will treat stormwater runoff.	Continue to look for advantageous locations for the implementation of stormwater retrofits.

6-4 Revised	Municipal Employee Training	Department of Public Works	Continue with current program	In previous permit years, City has held training courses. City staff continues to be aware of proper maintenance procedures for parks and open space, city-owned vehicles and equipment, buildings, street sweeping, and the drainage system. City staff is familiar with proper practices to prevent pollution in stormwater due to municipal operations.	Measurable goals for 2003 General Permit have been met. Continue current practices and look for training opportunities/programs more specific to Quincy's stormwater challenges.
6-5	Woodbine Street Stormwater Improvements Project	Engineering Department	PY7 and 8 – Proceed with Woodbine Street area drainage improvements	The City has continued to move forward with the study recommendations to address flooding through replacement of damaged and partially collapsed clay sections of the Wayland and Cushing Street Drains and drain structures. The project was put out to bid in March 2010 and is underway.	Continue to complete project.

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA)

The Final Pathogens TMDL for the Neponset River is being met by BMP ID # 1-3, 2-2, 2-4, 2-5, 3-2, 3-3, 3-4, 3-5, and 3-6.

7b. WLA Assessment

The following table summarizes the WLA for the Neponset River:

Fecal Coliform Waste Load Allocations (WLAs) and Load Allocations (LAs) for the Neponset River and Identified Tributary Streams			
Surface Water Classification	Bacteria Source Category	WLA (organisms per 100 ml)	LA
B	Illicit Discharges to Storm Drains	0	N/A
B	Leaking Sanitary Sewers	0	0
B	Failing Septic Systems	N/A	0
B	Storm Water Runoff	GM \leq 200 90% \leq 400	GM \leq 200 90% \leq 400
B	Sanitary Sewer Overflows	0	0
SB	Illicit Discharges to Storm Drains	0	N/A
SB	Failing Septic Systems	N/A	0
SB	Storm Water Runoff (Boston, Milton and Quincy)	GM \leq 88 90% \leq 260	GM \leq 88 90% \leq 260
SB	Sanitary Sewer Overflows	0	0
SB	Combined Sewer Overflows	0	N/A

GM means geometric mean

N/A means not applicable

The City is making steady progress towards meeting the WLA through implementation of existing BMPs, in particular, the outfall testing program and the illicit discharge detection and elimination program. At this time the City does not plan to add additional BMPs to address the WLA.

Part IV. Summary of Information Collected and Analyzed

- Sampling was conducted at Quincy's public beaches. Results are available at

http://mass.digitalhealthdepartment.com/public_21/beaches.cfm

- The City’s Health Department website presents the Bathing Beach Water Sampling Report Summary. The 2010 report is available at: http://www.quincyma.gov/CityOfQuincy_Content/documents/beachsummary2010.pdf
- The results of the Wollaston Beach Drainage Water Quality Study are available upon request through the Engineering Department at 55 Sea Street.

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)	
Stream teams established or supported	(# or y/n)	Y
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	Y
Shoreline cleaned since beginning of permit coverage	(mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored **	(#)	
▪ 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					NA (included in Ordinance)
▪ Erosion & Sediment Control					NA (included in Ordinance)
▪ Post-Development Stormwater Management					NA (included in Ordinance)

Mapping and Illicit Discharges

	(Preferred Units)	Response
Outfall mapping complete	(%)	100%
Estimated or actual number of outfalls	(#)	
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	~75%
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	100%
Outfalls inspected/screened **	(# or %)	
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	

Illicit discharges identified **	(#)	
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 **	(#)	
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)	

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

	(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)	2
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)**	(\$)	
• Hourly or lane mile contract rate **	(\$/hr. or ln mi.)	
• Disposal cost**	(\$)	
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	
• Vacuum street sweepers owned/leased	(#)	
• Vacuum street sweepers specified in contracts	(y/n)	

• % Roads swept with rotary brush sweepers **	%	
• % 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 % 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	
<ul style="list-style-type: none"> Treatment units induce infiltration within 500-feet of a wellhead protection area 	# or y/n	