



TOWN OF WENHAM
PUBLIC WORKS DEPARTMENT
978-468-5520 X6 fax: 978-468-8014

April 17, 2013

Fred Civian
Massachusetts Department of Environmental Protection
One Winter Street – 5th Floor
Boston, MA 02108

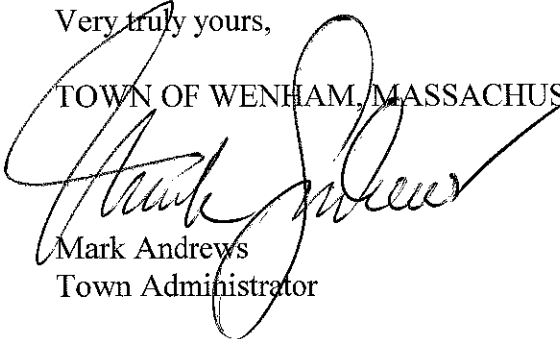
Re: National Pollutant Discharge Elimination System (NPDES) General Permit for Storm
Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)
Annual Report for Town of Wenham (Permit Year 10)
EPA Permit Number: MAR041230

Dear Mr. Civian:

Please find the enclosed Annual Report for Permit Year 10 for the Town of Wenham,
Massachusetts. This report is submitted pursuant to the requirements of EPA's "National
Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges
from Small Municipal Separate Storm Sewer Systems" issued May 1, 2003.

Very truly yours,

TOWN OF WENHAM, MASSACHUSETTS


Mark Andrews
Town Administrator

Enclosures

cc: Mr. Bill Tyack – Director of Public Works, Town of Wenham
Mr. Tim DeGuglielmo – Weston & Sampson



TOWN OF WENHAM
PUBLIC WORKS DEPARTMENT
978-468-5520 X6 fax: 978-468-8014

April 17, 2013

Glenda Velez
U.S. Environmental Protection Agency - Region 1
5 Post Office Square – OEP06-01
Boston, MA 02109-3912

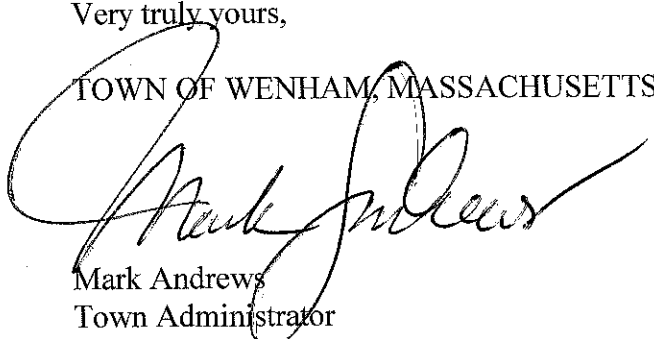
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Mr. Tim DeGuglielmo – Weston & Sampson

Municipality/Organization: Town of Wenham, Massachusetts

EPA NPDES Permit Number: MAR041230

MassDEP Transmittal Number: W-

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

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

Part I. General Information

Contact Person: Bill Tyack **Title:** Director of Public Works

Telephone #: (978) 468-5520 ext. 6 **Email:** btyack@wenhamma.gov

Mailing Address: 91 Grapevine Road, Wenham, MA 01984

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: Mark Andrews

Title: Town Administrator

Date:

Part II. Self-Assessment

The Town of Wenham has completed the required self assessment and determined that our municipality is in compliance with the permit conditions. The town has finished all of the goals listed in Part III of this permit.

The town has continued the process of replacing/repairing older non-BMP style catch basins (CBs), and the Public Works had a budget of approximately \$7,500 for replacement claims the past Permit Year. The Public Works Department (DPW) replaced 3 drain pipes (on Topsfield Road, William Fairfield Drive and Hull Street) and rebuilt 4 CBs (on Morgan Street, Kimble Avenue, Main Drive and Hilltop Drive) that had become degraded over time, limiting their functionality. The DPW has been performing these repairs in-house to reduce costs, which may result in additional repairs/replacements able to be performed under their current budgets. Additionally, the DPW has budgeted approximately \$7,500 for further repairs/replacements during the upcoming Permit Year.

All catch basins in town were inspected during Permit Year 10. The DPW did not observe any additional dry weather flow (possible illicit connections) during any of these inspections that had not been sampled during Permit Year 5 (no contamination was discovered during the sampling/testing of the dry-weather flows in Year 5).

The Town continues to hold its annual Pleasant Pond Cleanup Day on the 2nd weekend of June where volunteers, along with DPW workers, perform a cleanup of the Pleasant Pond area. Members of Gordon College and the local Boy Scouts also completed separate Earth Day cleanups of the Grapevine Road and Route 97 areas in Town. DPW staff assists in these cleanups as well. Both groups plan to hold another cleanup for the upcoming Earth Day. All of these activities work to cleanup the wetland/pond areas throughout the Town and improve the general cleanliness and water quality in these areas.

The Town is holding their annual Hazardous Waste Collection Day in conjunction with the Town of Hamilton on September 21, 2013 at the Hamilton DPW (the previous year's collection day was held on September 22, 2012). By providing residents a method to properly dispose of hazardous materials, it prevents the materials from potentially being disposed of improperly (i.e., into the drainage system/waterways).

The DPW is still currently using the proprietary product Ice Ban 50/50 instead of road salt (sodium chloride) for their road de-icing. Ice Ban 50/50 is a mixture of 50% magnesium chloride and a proprietary blend of brewer's condensed solubles – a by-product of the domestic brewing industry (began product use in Permit Year 5). This is a more environmentally friendly product that the manufacturer claims will result in a greater than 50% reduction in chloride ions introduced into the environment (compared to traditional road salt). Since switching to the Ice Ban 50/50 product, the DPW has also noticed a significant decrease in the degradation to CBs and de-icing equipment when compared to previous years using road salt.

To date, all of the drainage structures have been located in the field, inventoried using Global Positioning System (GPS), and photographed. The Town maintains an online GIS system which can be accessed on the Town's website.

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
1A Revised	Brochures/Fact Sheets	Public Works Department	Develop & distribute to all residents in water bill. Develop & Distribute to residents at Town Meetings	Informational fliers were distributed at the Spring 2012 Town Meeting (May 5, 2012).	The informational fliers were distributed again at the 2013 Town Meeting (April 6, 2013).
2A Revised	Storm Drain Stenciling	Public Works Department	Stencil storm drains at various locations around schools.	Stenciling of the CBs was completed in previous permit years. To date, 100% of the Town owned CBs have been stenciled.	CB stenciling has been completed in previous permit years for all Town owned CBs.
3A Revised	Develop web site	Public Works Department	Develop a public informational website.	GIS system is up-to-date and is able to be accessed from the Town's Website. Digital pictures of outfalls have been linked to the online GIS system. The DPW website lists notices/information regarding storm water pollution prevention and the stormwater hotline.	To date all of the Town identified drainage structures have been located and added to the GIS system. The Town will continue updating and maintaining the online GIS system as necessary. The DPW website will continue to post notices/information regarding storm water pollution prevention and the stormwater hotline.
4A Revised	Implement stormwater hotline	Public Works Department	Create a hotline that residents may use for information/reporting problems.	There were no calls from residents to the DPW about stormwater issues in the past year. If any calls about stormwater issues are received they are routed to the appropriate people at the Public Works/Highway Department.	Continue to inform residents of the proper town offices to contact if they need information or to report problems dealing with stormwater issues. Logs are kept with information on the calls received and the actions/responses performed.
Revised					

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
1B Revised	Storm drain stenciling	Public Works Department	Public information.	Stenciling of the CBs was completed in previous permit years. To date, 100% of the Town owned CBs have been stenciled.	CB stenciling has been completed in previous permit years for all Town owned CBs.
2B Revised	Household hazardous waste collection	Public Works Department	Annual collections to promote a cleaner environment.	A household hazardous waste drop off day for residents (in conjunction with the Town of Hamilton) was held on September 22, 2012 at the Hamilton DPW.	A household hazardous waste drop off day for residents is currently scheduled on September 21, 2013 at the Hamilton DPW.
3B Revised	Community cleanup	Public Works Department	Schedule community cleanup days to promote community awareness.	A community cleanup of Pleasant Pond took place the second weekend in June 2012. Members of Gordon College held a cleanup day along Grapevine Road for Earth Day. Members of the local Boy Scouts also held a cleanup day along Rt. 97 for Earth Day. DPW staff assisted in both cleanup activities.	Pleasant Pond community cleanup days are scheduled annually the second weekend of June. Members of Gordon College will hold a cleanup day along Grapevine Road for Earth Day. Members of the local Boy Scouts will hold a cleanup day along Rt. 97 for Earth Day. Public Works employees assist both groups with their respective cleanup activities.
4B	Adopt a storm drain	Public Works Department	Have individuals/groups cleanup storm drains to promote public awareness.	Advertisements on cable access television have been run previously asking for volunteers. However, no community groups have shown interest in participating in the adopt-a-storm drain program.	Continue to run advertisement for volunteers on cable access television.

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
1C	Mapping	Public Works Department	Mapping catchbasins & outfalls with GIS/GPS.	GIS system is up-to-date and is able to be accessed from the Town's Website. All drainage structures have been field located, inventoried and mapped using GIS. A total of 199 outfalls, 615 CBs and 114 drain manholes have been mapped on GIS.	To date all of the Town identified drainage structures have been located and added to the GIS system. The Town will continue updating and maintaining the online GIS system as necessary.
2C	Identify problem areas	Public Works Department	Inspection of outfalls in dry/wet conditions to determine illicit connections.	Continued inspections of CBs during annual CB cleanings. No additional dry-weather flows were observed that had not been previously inspected and sampled during the Permit Year 5 Sampling Program. Please note, there was no contamination discovered during the sampling/testing of the dry-weather flows in Year 5.	Continue to inspect the CBs and outfalls during cleanings for signs of illicit connections. Where signs of illicit connection are observed, samples will be taken of the outfall discharge and will be analyzed for typical illicit connection contaminants.
3C	Develop regulations/fines	Public Works Department	Submit a town ordinance to be voted on to establish regulation/fines for illicit discharges.	The ordinance was presented and passed during the May 3, 2008 Town Meeting (Permit Year 5).	The DPW will continue to enforce the regulations for illicit discharges.
4C	Elimination of illicit discharge	Public Works Department	Perform smoke testing on drainage systems to determine/eliminate illicit discharges.	No smoke testing occurred during the past year because no illicit discharges were observed during the inspections of the CBs.	Any suspected illicit discharges noted during the CB/outfall inspections will be sampled and analyzed for typical illicit connection contaminants. If contaminants are found, smoke testing will occur to locate and eliminate the source of the discharges.

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
1D Revised	Ordinance/regulatory mechanism for development	Public Works Department & Planning Board	Limiting stormwater run-off.	The town has reviewed and amended their existing regulations to include provisions for construction site stormwater runoff controls.	The appropriate Town committee(s) will use and enforce their recent regulation revisions covering construction site stormwater runoff control.
2D Revised	Site plan review	Public Works Department, Conservation & Planning Board.	Limiting storm water run-off.	All proposed construction projects will have to be reviewed and signed off on by the DPW and by the Project Review Committee (PRC), which includes among others the Planning Board and the Conservation Commission.	The DPW and PRC will continue to review all proposed plans for new/re-development in the town.
3D Revised	Site inspection	Public Works Department Public Works Department/Town Boards.	Compliance with newly adopted ordinance.	Site inspections were performed by the DPW and by the PRC.	The DPW and the PRC will continue to perform site inspections for new/re-development in the town.

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
1E	Develop structural / non structural BMP's	Public Works Department	Reduce pollutants.	<p>Four CBs were repaired and three drain pipes replaced that had degraded over time, limiting their functionality.</p> <p>The DPW changed their de-icing product from road salt (sodium chloride) and sand to a proprietary product "Ice Ban 50/50" and sand during Permit Year 5. Ice Ban 50/50 is a mixture of 50% of magnesium chloride and a proprietary blend of brewer's condensed solubles – a by-product of the domestic brewing industry.</p>	<p>The DPW will continue to promote the use of infiltration BMPs for new/re-development, and require that all new/replaced CBs have deep sumps. The Conservation Commission mandates that all roof runoff be infiltrated for new projects.</p> <p>Continue the use of Ice Ban as the primary road de-icer.</p> <p>The Public Works/Highway Department has \$7,500 in their upcoming budget dedicated to repairing and/or replacing older non-BMP style and/or deteriorated CBs. The DPW performs the replacements in-house with their staff, which will save costs and allow possible additional replacements.</p>
Revised					

2E	Ordinance governing post construction	Public Works Department / Town Boards	Reduce pollutants.	The town has reviewed and amended their existing regulations to include provisions for post-construction stormwater management in new and redevelopment projects.	The appropriate Town committee will use and enforce their regulation revisions covering post-construction stormwater management in new and redevelopment projects.
Revised					
3E	Ensure long-term maintenance	Public Works Department / Private	Assure long-term maintenance.	Continued aggressive maintenance plan for the town-owned BMPs with annual inspections by the Public Works/Highway Department.	Continued aggressive maintenance plan for the town owned BMPs with annual inspections
Revised				Issued four permits to trap beavers that were restricting flow of rivers/streams and disrupting stormwater flows.	Four beaver trapping permits have been issued for the upcoming Permit Year to prevent damming of rivers/streams, restricting their paths and disrupting stormwater flows.
4E	Determine appropriate BMP	Public Works Department / Public Works Department/Town Boards.	Improve clarity/reduce sediment.	All proposed new/re-development project plans will have to be reviewed by DPW and by the PRC for appropriate BMPs.	DPW and the PRC will continue to review all plans for new/re-development to ensure appropriate BMPs are being implemented.
Revised				The Conservation Commission mandates that all roof runoff be infiltrated for new projects.	
				All new/replaced CBs are required to be installed with deep sumps.	
				Appropriate BMPs are recommended for use whenever feasible.	

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
1F Revised	Operation / maintenance program	Public Works Department	Sweep all streets and clean all catch basins.	Swept 100% of town roads (approx. 33 miles) and cleaned and inspected all Town owned CBs.	The Town began their yearly street sweeping in early April 2013. 100% of the Town's roadways will be swept. The Town has already cleaned and inspected all of their CBs (March 2013) and will do so again the following March/April 2014.
2F Revised	Employee training	Public Works Department	Conduct catch basin survey for integrity/dry weather flows.	The Town continued training employees on all outfall locations, proper inspection techniques of outfalls and CBs, and proper actions needed for chemical spills into the storm drain system.	Continue the training of all public works employees on outfall and CB inspections, and on proper chemical spill actions.
3F Revised	Determine appropriate BMP	Public Works Department Public Works Department/Town Boards.	Installed deep sump catch basins w/ infiltration trenches for new cemetery and Pleasant St. sidewalk & roadwork.	Four CBs were repaired and three drain pipes replaced that had degraded over time, limiting their functionality. All proposed new/re-development plans have to be reviewed the DPW and the PRC. All new/replaced CBs are required to be installed with deep sumps. Appropriate BMPs are recommended for use, whenever feasible.	The DPW and the PRC will continue to review all plans for new/re-development to ensure appropriate BMPs are being implemented. The Public Works/Highway Department has \$7,500 in their upcoming budget dedicated to repairing and/or replacing older non-BMP style and/or deteriorated CBs. The DPW performs the replacements in-house with their staff, which will save costs and allow possible additional replacements.

4F Revised	Public involvement	Public Works Department / Health Department	Household hazardous waste collection / public participation.	A community cleanup of Pleasant Pond took place in June 2012. A household hazardous waste drop off day for residents (in conjunction with the Town of Hamilton) was held on September 22, 2012 at the Hamilton DPW. Members of Gordon College held a cleanup day along Grapevine Road for Earth Day (April 22, 2012). Members of the local Boy Scouts also held a cleanup day along Rt. 97 for Earth Day. DPW staff assisted in both cleanup activities.	Pleasant Pond community cleanup days are scheduled annually the second weekend of June. A household hazardous waste drop off day for residents, in conjunction with the Town of Hamilton, is currently scheduled on September 21, 2013 at the Hamilton DPW. Members of Gordon College will hold a cleanup day along Grapevine Road for Earth Day. Members of the local Boy Scouts will hold a cleanup day along Rt. 97 for Earth Day. Public Works employees assist both groups with their respective cleanup activities.
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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
1G Revised	Vegetation swales	Public Works Department	Reduce pollutants.	Continued to monitor opportunities to use vegetative swales on new/re-development projects and use on existing drainage facilities.	The DPW along with the PRC will continue to monitor opportunities for use of vegetative swales.

2G Revised	Infiltration drain fields	Public Works Department	Reduce runoff.	Continued to monitor opportunities to use infiltration drain fields on new/redevelopment projects and use on existing drainage facilities. Continued to and require all new development in Town to infiltrate roof runoff on-site.	The DPW along with the PRC will continue to monitor opportunities for use of infiltration drain fields. The Conservation Commission mandates that all roof runoff be infiltrated for new projects.
3G Revised	Dry wells	Public Works Department / Planning Board	Reduce runoff.	Continued to and require all new development in Town to infiltrate roof runoff on-site.	The Conservation Commission mandates that all roof runoff be infiltrated for new projects. The DPW and the PRC will continue to monitor opportunities for drywell use.
4G Revised	Deep sumps / hooded catch basins	Public Works Department / Planning Board	Reduce sediment / pollutants.	Four CBs were repaired and three drain pipes replaced that had degraded over time, limiting their functionality.	The Public Works/Highway Department has \$7,500 in their upcoming budget dedicated to repairing and/or replacing older non-BMP style and/or deteriorated CBs. The DPW performs the replacements in-house with their staff, which will save costs and allow possible additional replacements. Continue to monitor and enforce that all new/re-installed CBs have deep sumps.

7b. WLA Assessment

Not applicable – Draft Pathogen TMDLs have been prepared for the Ipswich River Watershed but have not yet been finalized.
North Coastal Watershed TMDLs have been published (March 2012) but no TMDLs were established for Wenham locations.

Part IV. Summary of Information Collected and Analyzed

The town's drainage system has been mapped via GIS. Approximately 199 outfalls, 615 CBs and 114 drain manholes were located in the field, inventoried using Global Positioning System (GPS), and photographed during the duration of this permit. Any new drainage structures will continue to be located, photographed and added in the field on the Town's online GIS system.

Approximately 615 catch basins were visually inspected during the cleaning program and no dry weather (illicit discharge) issues were noted that had not been sampled during Permit Year 5. Please note, there was no contamination discovered during the sampling/testing of the dry-weather flows in Year 5.

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, 2012 through March 31, 2013)

Programmatic

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	N
Annual program budget/expenditures **	(\$)	\$7,500
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 %)	4,000
Stormwater management committee established	(y/n)	N
Stream teams established or supported	(# or y/n)	N
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	~0.25
Shoreline cleaned since beginning of permit coverage	(mi.)	~1.5
Household Hazardous Waste Collection Days		
▪ days sponsored **	(#)	1
▪ community participation **	(# or %)	N/A
▪ material collected **	(tons or gal)	N/A
School curricula implemented	(y/n)	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	(#)	199
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	100%
Mapping method(s)		
▪ Paper/Mylar	(%)	100%
▪ CADD	(%)	0%
▪ GIS	(%)	100%
Outfalls inspected/screened **	(# or %)	100%
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	100%
Illicit discharges identified **	(#)	0
Illicit discharges identified (Since beginning of permit coverage)	(#)	0
Illicit connections removed **	(#); and (est. gpd)	N/A
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	N/A
% of population on sewer	(%)	<5%

% of population on septic systems	(%)	>95%
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Construction

	(Preferred Units)	Response
Number of construction starts (> 1-acre) **	(#)	3
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	100%
Site inspections completed **	(# or %)	100%
Tickets/Stop work orders issued **	(# or %)	0
Fines collected **	(# and \$)	0
Complaints/concerns received from public **	(#)	1

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	100%
Site inspections (for proper BMP installation & operation) completed **	(# or %)	100%
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	Y
Low-impact development (LID) practices permitted and encouraged	(y/n)	Y

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr)	1
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	1
Qty of structures cleaned **	(#)	615
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)	Landfill

Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	
• Hourly or per basin contract rate **	(\$/hr or \$ per basin)	\$13.25/basin
• Disposal cost**	(\$)	
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	Contracted
• Vacuum truck(s) owned/leased	(#)	0
• Vacuum trucks specified in contracts	(y/n)	N
• % Structures cleaned with clam shells **	(%)	100%
• % Structures cleaned with vactor **	(%)	0%

(Preferred Units)			Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)		1
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)		2-3
Qty. of sand/debris collected by sweeping **	(lbs. or tons)		
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)		Landfill
Annual Sweeping Costs			
• Annual budget/expenditure (labor & equipment)**	(\$)		
• Hourly or lane mile contract rate **	(\$/hr. or in mi.)		\$92.50/hr
• Disposal cost**	(\$)		
Sweeping Equipment			

• Rotary brush street sweepers owned/leased	(#)	Contracted
• Vacuum street sweepers owned/leased	(#)	0
• Vacuum street sweepers specified in contracts	(y/n)	N
• % Roads swept with rotary brush sweepers **	%	100%
• % Roads swept with vacuum sweepers **	%	0%

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

▪ Fertilizers	(lbs. or %)	0%
▪ Herbicides	(lbs. or %)	N/A
▪ Pesticides	(lbs. or %)	N/A
Integrated Pest Management (IPM) Practices Implemented	(y/n)	Y

	(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 % BCS	0% 0% 25%± 0% 0% 0% 50%± 25%±
Note: A mixture of sand and the proprietary product "Ice Ban 50/50" was used for de-icing during the previous permit year. Ice Ban 50/50 is a mixture of 50% magnesium chloride and a proprietary blend of brewer's condensed solubles (BCS) a by-product of the domestic brewing industry.		
Pre-wetting techniques utilized **	(y/n or %)	Y
Manual control spreaders used **	(y/n or %)	Y
Zero-velocity spreaders used **	(y/n or %)	N
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	None
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	None
% of salt/chemical pile(s) covered in storage shed(s)	(%)	100%

Storage shed(s) in design or under construction	(y/n or #)	N
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	Y

Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	N/A
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	N/A
<ul style="list-style-type: none"> Treatment units induce infiltration within 500-feet of a wellhead protection area 	# or y/n	N/A