

Municipality/Organization: Manchester-by-the-Sea, MA  
EPA NPDES Permit Number: MAR041207  
MassDEP Transmittal Number: W-036274  
Annual Report Number & Reporting Period: Year 9  
April 1, 2011 – March 31, 2012

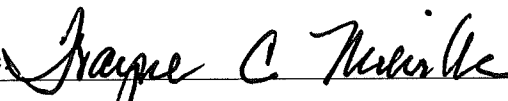
## NPDES PII Small MS4 General Permit Annual Report (Due: May 1, 2012)

### Part I. General Information

Contact Person: Steven T. Kenney Title: Director of Public Works  
Telephone #: 978-526-1242 Email: Kenneys@manchester.ma.us  
Mailing Address: Town Hall, 10 Central Street, Manchester-by-the-Sea, MA 01944

#### 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: Wayne C. Melville  
Title: Town Administrator  
Date: 4/16/12

## Part II. Self-Assessment

In Permit Year 9, the Town of Manchester-by-the-Sea continued to implement BMPs and make progress meeting requirements of EPA's 2003 *General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)*. BMPs and measurable goals selected continue to be appropriate for the Town except those modified as noted below. Staff from DPW, Conservation Commission, Building Department, Board of Health, and Planning Board conduct various stormwater management activities. The Town has an active Coastal Stream Team, which is a group of local citizens who discuss local environmental issues and focus on projects designed to maintain and improve water cleanliness, quality, and to preserve coastal habitats. The Stream Team conducts numerous outreach and education activities throughout the year, sponsors cleanups, conducts sampling, and also assists with storm drain stenciling.

In 2010, the Town applied for a grant from the Massachusetts Bays Program to restore Sawmill Brook, which included a stormwater management component. The Town was not awarded the grant, and therefore the Sawmill Brook restoration project has been halted. The Stream Team continues to explore funding options.

In Spring and Summer 2011, the DPW coordinated with high school students to stencil catch basins with "no dumping" information. Stenciling of approximately 50% (320) of the Town's basins was completed along the coast, downtown, and on catch basins discharging to tributaries and wetlands.

As part of their Clean Beaches and Streams program, Salem Sound Coastwatch coordinated with the Stream Team to conduct water quality sampling at three locations in Town. Samples were analyzed for E.Coli.

The Town also has hired Greenscapes and coordinated with Salem Sound Coastwatch to conduct public education and outreach on behalf of the Town to meet the new Phase II Small MS4 General Permit for North Coastal Watersheds.

### Notes on Permit Year 9 Annual Report:

- In the Permit Year 5 Annual Report, the Town assigned new BMP ID#s, to better tie the BMP to the MCM (i.e., BMP 1 became BMP 1.1, BMP 2 became BMP 1.2, and BMP 3 became BMP 2.2, etc). All BMPs identified in the Notice of Intent continue to be implemented.
- In the Permit Year 6 Annual Report, the Town added a BMP (#6.1) to include a stormwater system and catch basin inspection program.
- In the Permit Year 7 Annual Report, the Town added BMPs #1.3, 1.4 and 6.5.
- In the Permit Year 9 Annual Report, the Town revised BMP 2.1 from "Stream Cleaning" to include "Stream Cleaning and Cleanups", which now includes any beach, stream, or other public park related cleanups.

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 Revised	Water Conservation Practice Brochures	DPW	Brochure distribution (goal of over 1,700)	Goal met. The Town once again mailed water conservation brochures with each water bill. Around 2,000 water conservation brochures were mailed in 2011.	As budget allows, continue to include brochures with water bills.
1.2 Revised	Hold Hazardous Waste Collection	Board of Health	Conduct annual event	Goal met. The Town's annual household hazardous waste day was held in April 2011 by the Board of Health. The Town continues to make recycling information available on the Town website.	Continue annual HHW day event as budget allows. Continue to make recycling information available on website as necessary.
1.3 Revised	Stormwater Brochures at Town Hall	DPW/ Conservation/ Stream Team	Make stormwater-related brochures available at Town Hall	Goal met. Stormwater brochures continued to be available in Town Hall. Topics include: "The Importance of Streamside Buffers" and "Pet Waste and Bathing Beaches – Guidelines for Pet Owners" In 2011, the Town also posted a non-point source poster about proper lawn fertilizer practices, from the Think Blue campaign.	Continue to make brochures and/or posters available as budget allows.

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
1.4 Revised	Animal Control Bylaw (Town's General Bylaws Article X Section 28)	Police/ Board of Health	Enforce Animal Control Bylaw	Goal met. The Animal Control Bylaw prohibits disposal of dog waste on beaches, sidewalks, streets, parks, in town storm drains and on public beaches. This bylaw is continuously enforced by the Police, by patrolling beaches, parks, recreational areas and cemeteries and monitoring the "dog waste stations."  The Board of Health also promotes compliance with and educates residents and visitors about this bylaw.  Signage on streets entering Manchester-by-the-Sea alerting visitors of the bylaw is maintained by the Town.	As needed, Police and Board of Health will continue to promote and enforce bylaw.

**1a. Additions**


## 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 Revised	Stream Cleaning <i>Stream Cleaning and Cleanups</i>	DPW/ Conservation Commission	Annual Project	<p>Over the permit term, the Town has undertaken numerous stream cleaning projects.</p> <ul style="list-style-type: none"> <li>• A portion of Millets Brook was cleaned in August 2003.</li> <li>• A portion of Sawmill Brook (from Mill Street south to Essex Country Club) was cleaned in December 2005.</li> <li>• Millets Brook (from Millets Lane to Rote 128) was cleaned in January 2007.</li> <li>• In more recent years, DPW and Conservation Commission worked together on a stream cleaning project in the Saw Mill Brook.</li> <li>• In Permit Year 8, budget prohibited cleaning activities. However, Town applied for a grant from the Massachusetts Bays Program to restore Sawmill Brook, which included a stormwater management component.</li> <li>• In Fall 2011, there were volunteer cleanups. DPW supports the events by removing trash and debris picked up.</li> </ul>	As budget allows, continue annual stream cleanings and support volunteer cleanups.

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
2.2	Stakeholder Meetings	Manchester Coastal Stream Team/ Conservation Commission	<p>Conservation Commission Meetings (Goal – 16 times per year)</p> <p>Stream Team Meetings (Goal – 9 times per year)</p> <p><i>Conservation Commission Meetings (Goal – 16 times per year)</i></p> <p><i>Stream Team Meetings (Goal – 9 times per year)</i></p> <p><i>Planning Board Meetings (Goal – 15 times per year)</i></p>	<p>The Conservation Commission met twice a month (second and fourth Tuesday). Additional meetings were scheduled as needed. Abutters and general public were invited to consider drainage and stormwater manage issues as related to the Wetlands Protection Act and related state and local laws.</p> <p>The Manchester Coastal Stream Team met routinely to discuss environmental issues that affect water bodies in Manchester-by-the-Sea and to plan corrective measures to address identified issues. All projects include public participation and involvement elements.</p> <p>The Planning Board met once or twice a month to hear applications relating to the use and division of land, including projects that fall under Section 6.15 Stormwater Management Special Permit, of the Zoning Bylaw.</p> <p>Meetings held by the Conservation Commission and the Planning Board complied with state public notice requirements at MGL Chapter 39 Section 23B and local public notice requirements.</p>	Continue to discuss stormwater at meetings, as possible.
Revised		<p><i>Manchester Coastal Stream Team/ Conservation Commission/ Planning Board</i></p>			

**2a. Additions**


### 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 Revised	Map of Storm Drains	Public works	Complete by June 30, 2006	<p>GIS map of storm sewer system (outfalls, catch basins, and other drainage structures) in the urbanized area is complete. Connectivity, where known, is included on map.</p> <p>Town contracts mapping to Applied Geographics, Inc, which provides an online viewer for GIS, including the drainage system map. Hand markup of revisions is conducted by Town Staff throughout the year, during field efforts, and the GIS map updated annually to reflect Towns' edits.</p>	BMP complete; measurable goal met. Continue to update map as needed.
3.2 Revised	Illicit Discharge Policy/Regs	DPW/ Conservation Commission/ Planning Board/ Building Inspector	Complete implementation by May 31, 2008	<p>Due to limitations on staff time and budgets, efforts to adopt the IDDE Bylaw have stalled.</p> <p>The Town's Stormwater Management Zoning Bylaw requires projects to meet the MA Stormwater Standards and Handbook, and therefore regulates illicit discharges and connections from projects disturbing one or more acres.</p> <p>The Town's Streets and Sidewalks bylaw regulates illegal dumping on the town streets and sidewalks, as well as public lands and coastal and inland waters.</p>	Continue to work on adopting IDDE Bylaw.

### 3a. Additions




**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	Develop and Implement Construction Runoff Policy/Regulations regulating erosion and sediment control	DPW/ Conservation/ Commission/ Planning Board/ Building Inspector	Complete by June 30, 2007	<p>“Stormwater Management Special Permit” added to Town Zoning By-law in April 4, 2007. Regulations adopted by Planning Board.</p> <p>This bylaw requires erosion and sediment controls at construction sites that disturb one or more acres (or less than one acre if part of a common plan of development) and includes sanctions to ensure compliance and requirements for inspections. This bylaw references the Massachusetts Stormwater Management Standards and Handbook as performance standards.</p> <p>Planning Board continued to implement Bylaw and regulations.</p>	<p>BMP complete and measurable goal achieved.</p> <p>Continue to Implement bylaw and regulations</p>
Revised					

**4a. Additions**


**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	Develop and implement Post Construction Policy	DPW/ Conservation/ Commission/ Planning Board/ Building Inspector	Complete by June 30, 2007 Implement bylaws	<p>“Stormwater Management Special Permit” added to Town Zoning By-law in April 4, 2007. Planning Board adopted regulations.</p> <p>This bylaw regulates stormwater runoff from development and redevelopment projects that disturb one or more acres (or less than one acre if the project is part of a larger common plan of development), and includes long term O&amp;M requirements. This bylaw references the Massachusetts Stormwater Management Standards and Handbook as performance standards, and therefore controls that are put in place should prevent or minimize impacts to water quality.</p> <p>Planning Board continued to implement bylaw and regulations as needed.</p>	<p>BMP complete and measurable goal achieved.</p> <p>Continue to implement bylaw and regulations</p>
	Revised				

**5a. Additions**


## 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)
6.1 Revised	Stormwater System and Catch Basin Inspection Program <i>Stormwater System and Catch Basin Inspection and Cleaning Program</i>	DPW	Annual Inspections	DPW inspects catch basins and other stormwater system components throughout Town as needed. In 2011, all catch basins were cleaned, and based on inspections, about 35 catch basins were repaired. Also cleaned problem drain lines, about 1,200 linear feet, and replaced approximately 800 linear feet of drainage lines.	Continue annual inspections and as-needed cleanings.
6.2 Revised	Septic system controls	Board of Health	Number of new systems or repairs <i>Implement Title 5</i>	The Board of Health continued to implement Title 5. Systems are inspected and failing systems are upgraded as required by Title 5. BOH continued to track the number of pump outs.	Continue to monitor septic systems in accordance with Title 5.
6.3 Revised	Sweep all streets by June 1	DPW	Complete by June 1	Streets throughout Town were swept by DPW in the spring (by June 1, 2011).	As budget allows, continue to sweep streets once per year.
6.4 Revised	May through September, Minimum of biweekly sweeping of main streets	DPW	Sweep as necessary	The DPW swept main streets (including those near beaches and in the downtown areas) regularly throughout the summer season (May through September).	Continue to sweep main streets as needed and as budget allows.
6.5 Revised	Employee Training	Conservation Commission/ Fire Department/ DPW	Train staff annually	Training on stormwater elements is incorporated in other Conservation Commission, Fire Department, and DPW trainings. Training includes understanding how to recognize illicit discharges.	Continue stormwater trainings.

**6a. Additions**


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

Not applicable. As of the date of preparation of this report, none of Manchester-by-the-Sea's receiving waters have approved TMDL reports. A Draft Pathogen TMDL for the North Coastal Watershed has been developed, but is not yet final.

**Part IV. Summary of Information Collected and Analyzed**

- Results from Salem Sound Coastwatch's Clean Beaches and Streams Water Quality Monitoring Program for Summer 2011 are available at their website. <http://www.salemsound.org/CB&S.html>
- The Town's Board of Health maintains records of weekly sampling results and beach closings for the Town's beaches at eight sampling locations. The Massachusetts Department of Public Health also presents sampling results on their website: [http://mass.digitalhealthdepartment.com/public\\_21/index.cfm](http://mass.digitalhealthdepartment.com/public_21/index.cfm)

**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, 2011 through March 31, 2012)

**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)		General fund

**Education, Involvement, and Training**

Estimated number of property owners reached by education program(s)	(# or %)	
Stormwater management committee established	(y/n)	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 **	(#)	1
▪ community participation **	(# or %)	
▪ material collected **	(tons or gal)	
School curricula implemented	(y/n)	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	(#)	15
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	99%
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 **	(%)	100%
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	(%)	100 %
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)	1
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	1
Qty of structures cleaned **	(#)	605
Qty. of storm drain cleaned **	(%, LF or mi.)	~1,200
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**	(\$)	6,655
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	1 - leased
• Vacuum truck(s) owned/leased	(#)	1 - leased
• Vacuum trucks specified in contracts	(y/n)	
• % Structures cleaned with clam shells **	(%)	90%
• % Structures cleaned with vacor **	(%)	10%



	(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)	>1
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)**	(\$)	9,200
• Hourly or lane mile contract rate **	(\$/hr. or in mi.)	
• Disposal cost**	(\$)	
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	Y, leased
• 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 %)	100%
▪ Herbicides	(lbs. or %)	100%
▪ Pesticides	(lbs. or %)	100%
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	Mixture is NaCl and Sand, mostly NaCl
Pre-wetting techniques utilized **	(y/n or %)	N
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)	(%)	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	
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	
<ul style="list-style-type: none"> <li>Treatment units induce infiltration within 500-feet of a wellhead protection area</li> </ul>	# or y/n	