

4/17/12

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Municipality/Organization: Town of West Springfield

EPA NPDES Permit Number: MA041024

MassDEP Transmittal Number: W-035938

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: James W. Lyons, P.E. **Title:** Town Engineer

Telephone #: (413) 263-3249 **Email:** JLyons@West-Springfield.ma.us

Mailing Address: 26 Central Street - Suite 17, West Springfield, MA 01089-2763

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: Gregory C. Neffinger

Title: Mayor

Date: 4/12/12

Part II. Self-Assessment

The Town of West Springfield has completed the required self-assessment and has determined that our municipality is in compliance with permit conditions where budget and resources allow.

Items that are deficient are as follows:

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 – Future Permit
4A	Construction Site Runoff Ordinance	Planning Dept. Build Inspector	Eval Exist Regs Yr 1 Draft Revisions Yr 2 Propose for adoption in Year 3	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
4B	Erosion and Sediment Control Plan Review	Planning Dept.	Enforcement under existing Regulations Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
4C	Inspection Reporting	Conservation Commission	Enforcement under existing Regulations Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are under review by the Town Attorney.
5A	Post Construction Runoff Ordinance	Planning Dept.	Eval Exist Std – Yr 1 Draft Revision -Yr 2 Propose Adopt – Yr 3	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
5B	Construction Site Plan Review	Planning Dept.	Enforcement under existing Regulations Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.

5C	Stormwater System Maintenance Plan	Planning Dept.	Enforcement under existing Regulations Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
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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 – Future Permit
1A Revised	Educational Displays at the DPW Offices <i>Also on (P/VTa) local buses</i>	DPW	1 Display in Municipal Building per year (Year 1 to 5)	Stormwater posters have been installed outside of DPW Offices in the Municipal Office Building, in the library and also on local (P/VTa) buses.	Posters produced by The Connecticut River Stormwater Committee
1B Revised	Classroom Education	DPW	DPW Classroom Presentation (Year 1 to 5)	Faussey School in West Springfield has included stormwater related topics in its curriculum.	Continue to participate in Classroom Educational Programs.
1C Revised	Newspaper Press Release	DPW	Press Release to local newspaper – 2 per year (Year 1-5)	Press releases and articles frequently appear in the West Springfield Record and the Springfield Republican. They appear far more frequently than 2 per year.	Continue press releases and articles for the local newspapers.
1D Revised	Local Cable Access	DPW	Show Stormwater Video – 2 per year (Year 1-5)	Connecticut River Stormwater Committee contacted local cable access station to ensure that video Public Service Announcements were active in West Springfield.	Continue with public service announcements and notices, local environmental programs and lectures.
1E Revised	Informational Pamphlets	DPW	Develop Pamphlets and distribute with water bills (Year 1,3,5)	DISTRIBUTED WITH WATER BILLS	Informational pamphlets will be sent out with the water bills
1F Revised	Open House at Transfer Station <i>Changed Location to Town Hall Auditorium</i>	DPW	Publicize and Support Annual Event (Year 1 to 5)	Public Presentations are presented by the Connecticut River Stormwater Committee – Think Blue Campaign	The town will continue to sponsor programs and lectures which highlight the environment.

1. Public Education and Outreach (Continued)

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 – Future Permit
1G	Community Website	DPW	2 Notices per Year on local “Virtual Town Hall” website (Year 1 to 5)	NPDES Web pages are located on the Town’s Website and are being updated to document the town’s efforts.	The town will continue to post Stormwater and Environmental Notices on its Public Works Website.
Revised					

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 – Future Permit
2A Revised	Adopt a Road	City Council	Support “Townwide Cleanup” activities – Years 1 to 5 <i>Switched from Merrick to Townwide</i>	Annual “Earth Day Cleanup” activities utilize volunteer groups who help with the cleanup. These groups go along brooks and streams and remove litter and other debris.	The Town will continue to sponsor “Earth Day Cleanup Activities”.
2B Revised	Adopt a Stream	DPW	Maintain Signage identifying stream names sponsored by volunteer groups – Years 1 to 5	During “Earth Day Cleanup” volunteers check the signs that identify the names of streams. The signs are replaced if they are damaged.	The Town will continue to sponsor “Earth Day Cleanup Activities”.
2C Revised	Attitude Surveys	DPW	Include Stormwater Survey on Website – Years 2 & 5	West Springfield is working with the Connecticut River Stormwater Committee.	The results of the Attitude Survey are posted on the DPW Website.
2D Revised	Community Hotline	DPW	Place DPW phone number on Town Website for reporting of illicit discharges – Years 1 to 5	This BMP has been implemented with the assistance of our Computer Department.	Continue to post the Emergency Phone Numbers on the Town’s Website.
2E Revised	Storm Drain Stenciling	DPW	Recruit volunteers for stenciling anticipated 100 catchbasins per yr	Fausey School Environmental Awareness. Curb Markers installed in the parking lot at the Middle School.	The town will continue to solicit volunteers to install curb markers at catch basins.

2. Public Involvement and Participation (Continued)

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 – Future Permit
2F Revised	Water Quality Monitoring	DPW	Visual Inspection of priority outfalls by volunteers, 10 per yr (Years 2 & 5)	Field inspected 100% of the known 272 mapped outfalls by Tighe & Bond Consulting Engineers	Continue monitoring of water quality in streams and brooks
2G Revised	Watershed Committee	WRA	Support Westfield River Association, inform of DPW activities (Year 1 to 5)	The Town of West Springfield supports the activities of the Westfield River Watershed Association in cleaning up of the town's riverbanks.	The Town of West Springfield will continue to support the Westfield Watershed Association.
2H Revised	Hazardous Waste Collection	DPW	Publicize annual event collecting Universal Wastes (Year 1 to 5)	Hazardous Waste Collection was conducted on September 24, 2011. 300 Vehicles registered 2.4 tons of hazardous waste collected 2.3 tons of electronics recycled 468 gallons of waste-oil recycled 95 propane tanks recycled 64 auto batteries recycled 4,824 ft of fluorescent bulbs collected	The Town of West Springfield will continue to conduct Hazardous Waste Collections in the early fall of each year.
2I Revised	Wetlands Planting Remove invasives	DPW	Recruit volunteers for wetlands improvements (Year 1 to 5)	Local volunteer groups help with Earth Day Cleanup. Debris is typically removed from local wetland habitats. Earth Day Cleanup was organized by DPW and Conservation Commission and picked up tons of litter, bulk waste and tires, some with metal rims	West Springfield will continue to support local conservation groups thru town-sponsored activities.

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) Tighe & Bond Consulting Engineers for 3A, 3B & 3E	Planned Activities – Future Permit
3A Revised	Mapping Stormwater Outfalls	DPW	Develop map of stormwater outfalls, Year 1 Field inspect, Year 2-5 verify 25% per year	Mapped 100% of outfalls in town focusing first on densely populated areas.	DONE
3B Revised	Develop Illicit Discharge Plan	DPW	Evaluate Year 1 Draft Plan Year 2 Propose adoption Yr 3 Implement Yrs. 3 to 5	Simultaneously mapped outfalls and system-wide storm and sewer structures (i.e., catch basins, manholes, pipes) for 100% of town. This will provide accurately located structures to help the town immediately and more easily implement the Illicit Discharge Detection and Elimination Program.	A draft version of the Illicit Discharge Plan has been developed for use in inspecting outfalls.
3C Revised	Non- Stormwater Ordinance	Planning Board / DPW	Evaluate Year 1 Draft Plan Year 2 Propose adoption Yr 3 Implement Yrs. 3 to 5	Ordinance was adopted April 19, 2005 It has been implemented	DONE
3D Revised	Inform Employees, Businesses, Public	DPW	Publicize Illicit Discharge Plan (Year 3 & 5)	Published various stormwater documents on town's internet site for the public to access.	A draft version of the Illicit Discharge Plan has been developed for use in inspecting outfalls . Draft version is currently on website.
3E Revised	Video Inspection	DPW	Conduct as needed in conjunction with BMP #3B (Years 1 to 5)	Video Inspections and dye testing have been performed in conjunction with the mapping of storm drain systems.	Video inspections and dye testing to be performed as needed to determine connectivity of storm drain systems to outfalls as illicit discharges are found.

3. Illicit Discharge Detection and Elimination (Continued)

3F	Failing Septic Systems	Board of Health	Keep records for identification of Problem Areas (Years 1 to 5)	Health Department has records of Septic Systems. These are being entered onto the Town's GIS mapping system.	Continue to enter septic system information onto the Town's GIS mapping system
Revised					

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 – Future Permit
4A	Construction Site Runoff Ordinance	Planning Dept. Build Inspector	Eval Exist Regs Yr 1 Draft Revisions Yr 2 Propose for adoption in Year 3	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
Revised					
4B	Erosion and Sediment Control Plan Review	Planning Dept.	Enforcement under existing Regulations Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
Revised					
4C	Inspection Reporting	Conservation Commission	Enforcement under existing Regulations Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
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 9 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Future Permit
5A Revised	Post Construction Runoff Ordinance	Planning Dept.	Eval.Exst Stand – Yr 1 Draft Revision – Yr 2 Propose Adopt - Yr 3	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
5B Revised	Construction Site Plan Review	Planning Dept.	Enforcement under existing Regs Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
5C Revised	Stormwater System Maintenance Plan	Planning Dept.	Enforcement under existing Regs Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.

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 – Future Permit
6A Revised	Municipal Maintenance Activity Program	DPW	Evaluate and draft additional policies as necessary, Year 1. Comply, Yrs 2-5	DPW maintains 17 parks and ball fields – trash is picked up on a daily basis. Vehicle fleets inspected monthly and oil changes done on a regular basis. Catch basins are cleaned as there is a route established to clean them all.	Continue the effort established in previous years
6B Revised	Employee Training	DPW	Initial Good Housekeeping training Year 1. Annual Refresher Yrs 2-5	Employees are trained in the Municipal Maintenance Activity Program.	Continue the effort established in previous years
6C Revised	Catchbasin Program	DPW	Clean 50% of Catchbasins per year	100% of the catchbasins were cleaned this year. Collected materials were collected for use as ground cover at the Springfield Yard Waste Composting Facility	Continue the effort established in previous years
6D Revised	Street Sweeping	DPW	Sweep Streets once per year and Business Districts monthly, spring thru fall Yrs 1-5	The DPW swept the entire town once this year. Downtown and main arterial routes were swept an additional 4 times. Street sweepings were collected for use as ground cover at the Springfield Yard Waste Composting Facility.	Continue the effort established in previous years
6E Revised	Road Salt Program	DPW	Employee Training at Salt-Institute, Yr. 1 Investigate alternative chemicals Yrs 2-5	DPW is continually investigating alternative snow and ice control techniques.	Continue the effort established in previous years

6. Pollution Prevention and Good Housekeeping in Municipal Operations (Continued)

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 – Future Permit
6F Revised	Lawncare and Pest Control	DPW	Train 2 Employees for application of controls Yr 1 Implement Practices Yrs 2-5	Continue the effort established in previous years.	Continue the effort established in previous years
6G Revised	Stormwater Pollution Prevention Plan / MSGP at the City Garage (Town Yard)	DPW	Implementation of SWPPP, Year 1. Comply, yrs 2-5	4 bays of the existing DPW Garage have been reconstructed for use as state of the art repair facility. The town has abandoned plans to build a new facility.	DONE
6H Revised	Used Oil Recycling	DPW	Continue collection and recycling, Years 1-5.	In 2011 the town collected 468 gallons of used motor oil.	Continue to collect and recycle used motor oil. DPW intends to get a waste oil burner to help heat the garage.
6I Revised	Illegal Dumping	DPW	Pickup of dumped waste, Yrs 1-5	The DPW continues to pick up illegally dumped materials in the following areas: Agawam Ave, Bear Hole Reservoir, Circuit Ave, Palmer Ave, Old Westfield Road and 7.2 miles of earthen dike.	Continue with the effort established in previous years. Installation of a surveillance camera on Agawam Avenue to detect violators.

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

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 -- Future Permit
7A	TMDL for the Connecticut River	DPW, Planning, Health, Bldg Departments	Completion of BMP's under all of the Six Minimum Control Categories	Refer to previous BMP's	
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

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 **	(\$)	\$ 8,000
Total program expenditures since beginning of permit coverage	(\$)	\$ 797,742
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 %)	95%
Stormwater management committee established (<i>Connecticut River Stormwater Committee</i>)	(y/n)	Y
Stream teams established or supported (<i>Westfield River Watershed Association</i>)	(# 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 ** - material collected **	(#)	1
School curricula implemented	(# or %)	300 vehicles
	(tons or gal)	4.7 tons
	(y/n)	Y

Legal/Regulatory

Regulatory Mechanism Status (indicate with "X")				In Place Prior to Phase II	Reviewing Existing Authorities	Drafted	Draft in Review	Adopted
▪	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		(#)		272
System-Wide mapping complete (complete storm sewer infrastructure)		(%)		100%
Mapping method(s)				
▪	Paper/Mylar	(%)		
▪	CADD	(%)		
▪	GIS	(%)		100%
Outfalls inspected/screened **		(# or %)		80
Outfalls inspected/screened (Since beginning of permit coverage)		(# or %)		272
Illicit discharges identified **		(#)		
Illicit discharges identified (Since beginning of permit coverage)		(#)		9 very likely 19 maybe
Illicit connections removed **		(#); and (est. gpd)		
Illicit connections removed (Since beginning of permit coverage)		(#); and (est. gpd)		

% of population on sewer	(%)	95%
% of population on septic systems	(%)	5%

Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	6
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	100%
Site inspections completed **	(# or %)	20+
Tickets/Stop work orders issued **	(# or %)	1
Fines collected **	(# and \$)	0
Complaints/concerns received from public **	(#)	5

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)	N

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr)	1 time/year
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	5 times/year
Qty of structures cleaned **	(#)	Approx 256
Qty. of storm drain cleaned **	(%, LF or mi.)	0
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	285 tons
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	landfill

Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	\$ 55,932
• Hourly or per basin contract rate **	(\$/hr or \$ per basin)	\$38.83/hour
• Disposal cost**	(\$)	\$ 0.00
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	0
• Vacuum truck(s) owned/leased	(#)	1
• Vacuum trucks specified in contracts	(y/n)	None
• % Structures cleaned with clam shells **	(%)	None
• % Structures cleaned with vacor **	(%)	100%

(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)	4
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	1,100 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Compost
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	\$ 88,862
• Hourly or lane mile contract rate **	(\$/hr. or ln mi.)	\$ 580 / mi
• Disposal cost**	(\$)	\$ 0.00
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	1
• 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 %)	N/A
■ Herbicides	<i>By Contract 7.2 miles of earthen dike has vegetation control</i>	(lbs. or %)	2X
■ Pesticides		(lbs. or %)	N/A
Integrated Pest Management (IPM) Practices Implemented		(y/n)	N
		(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used **		% NaCl	45%
(also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)		% CaCl ₂	5%
		% MgCl ₂	
		% CMA	
		% Kac	
		% KCl	
		% Sand	50%
Pre-wetting techniques utilized **		(y/n or %)	N
Manual control spreaders used **		(y/n or %)	N
Zero-velocity spreaders used **		(y/n or %)	N
Estimated net reduction or increase in typical year salt/chemical application rate		(±lbs/ln mi. or %)	0%
Estimated net reduction or increase in typical year sand application rate **		(±lbs/ln mi. or %)	0%
% of salt/chemical pile(s) covered in storage shed(s)		(%)	0%
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 2011		(y/n)	N

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	Y
Treatment units induce infiltration within 500-feet of a wellhead protection area		# or y/n	N

West Springfield: NPDES Compliance for goals 2F, 3A, and 3B

The town has modified its original performance goals 2F, 3A, and 3B with regard to visually inspecting priority outfalls, mapping outfalls, and developing an illicit discharge and detection plan. The new approach as described below will allow the town to more accurately and efficiently investigate illicit detections and then implement appropriate elimination actions. The original schedule for implementing these three performance goals has also changed but the overall objective was met by the end of June 2008.

The town's initial approach involved creating a basic map of outfalls using GPS and inspecting the outfalls. If an inspected outfall showed any signs of illicit discharge, the town would then develop and implement its illicit discharge plan. To investigate illicit discharges, the town would need accurate maps of the storm and sewer systems to trace upstream the source of an illicit discharge.

With adequate financial funding in place, the town decided to simultaneously map outfalls and the entire storm drain and sanitary sewer systems. Mapping the entire systems (i.e., pipes, manholes, catch basins, other structures) involved creating digital flow maps from outdated engineering plans. Once these plans were in digital map format, field crews began to survey and digitally update outfall locations and upstream flow connections. The town investigated any undetermined connections from fieldwork with dye and video testing. Ten areas were dye tested, three areas were water jetted, and 2,600 linear feet of storm drains were videoed. The town piloted these efforts in an older urban part of town and adopted a similar approach that was carried through year 6.

As the storm and sewer systems were being mapped, the town GPS'ed and inspected 272 outfalls for the presence of non-storm water discharges. The town has mapped the remaining storm sewer and sanitary systems and has the data for a complete GIS map. Information gathered from outfall testing will allow the town to detect, locate, and eliminate illicit discharges from the storm water system. The system-wide storm and sewer maps will help provide the town the ability to trace pipe connections upstream of the outfall being investigated to help determine the source of pollutants. The town does not have a finalized Illicit Discharge Plan, as we anticipate that there may be some revisions once comprehensive inspections of outfalls commences.

The town has invested a substantial amount of financial resources, effort, and time to map the entire storm water system in addition to outfalls. This will provide significant value-added benefits for the Illicit Discharge Detection and Elimination program.