Municipality/Organization:	City of Westfield
EPA NPDES Permit Number:	MAR041236/MADEP
MassDEP Transmittal Number:	**W-040836**
Annual Report Number & Reporting Period:	**Year 15** **April 1, 2017 – March 31, 2018**

NPDES Phase II Small MS4 General Permit Annual Report
(Due: May 1, 2018)

Part I. General Information

Contact Person: Joseph Kietner — Title: Stormwater Coordinator

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Mailing Address: 28 Sackett Street Westfield, MA 01085

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: Joseph Kietner

Title: Stormwater Coordinator

Date: 4/27/18

Part II. Self-Assessment

The City of Westfield has completed the required self-assessment and has determined that our municipality is in compliance with its permit conditions with the following exceptions:

BMP 3-4: Illicit connections identification and removal in priority waters is still underway.
BMP 4-5: Process improvements are needed for uniformity of erosion and sediment control inspection reports.
BMP 5-3: Inventory of all private and public structural BMPs is still ongoing.
BMP 6-2 Street sweeping needs improvement
BMP 6-7: Cleaning of catch basins needs improvement
BMP 6-9: Tree planting #s need improvement

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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities
1-1	Distribute Educational Pamphlets to municipal employees and households	Stormwater Coordinator and Westfield Gas & Electric Light Department	19,000 pamphlets distributed every two years to all residents and municipal employees	Pamphlet distributed in 4th Quarter of 2016	Pamphlet distribution planned for compliance with MS4 permit that becomes effective July 1, 2018
1-2	Distribute pamphlets to industries	Stormwater Coordinator	250 pamphlets distributed biannually to industries	Last pamphlet distribution Jan, Feb, and Mar 2016	Pamphlet distribution planned for compliance with MS4 permit that becomes effective July 1, 2018
1-3	Create and maintain stormwater website	Stormwater Coordinator and IT specialist	Stormwater web page created	No major informational changes to stormwater utility website this reporting period.	Update website to include permit effective July 1, 2018. Web site upgrades and maintenance to be a continuing effort.
1-4	Educate dog owners about picking up dog waste	Animal Control	Info posted on animal control website or fact sheet distributed	Dog waste pamphlets distributed to the Westfield Animal shelter. Reached out through Pioneer Valley Planning Commission to pet owners regarding pet waste disposal practices.	Continue posting/distributing dog waste pamphlets.
1-5	Contact local boy/girl scouts concerning volunteer projects	Stormwater Coordinator	Boy/Girl scout troop contacted	Participated in River Clean-up 9-23-2017	Continue reaching out to scout groups.
1-6 Revised	Update City Council on progress of Storm Water Management Plan activities	Stormwater Coordinator	Annual update via annual report	MS 4 Annual Report submitted to Public Works Officials for distribution to City Council and Mayor	Continue to update City officials.

1-7	Waterway labeling of various brooks, streams and rivers, to educate the public and increase environmental awareness.	Stormwater Coordinator	Number of signs posted and maintained identifying brooks and streams where they cross under roadways	Existing signage for waterways maintained this reporting period.	Continue to maintain existing signage.

1a. Additions

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities
2-1	Form Stormwater Advisory Committee	City departments in committee	Committee formed and # meetings held per year	The Storm Water Advisory Committee met approximately 20 times as a part of the City's Weekly Round Table meeting.	Continue with meetings.
2-2	Comply with state public notification guidelines	All departments	Notices posted for all meetings as required by state	Ongoing conformance with state public notification requirements. Meeting agendas are posted on the city website.	Continue conformance with state requirements.
2-3	Stencil catch basins with "don't dump" message	DPW	0 catch basins stenciled per year	The Westfield River Watershed Association (WRWA) has installed roughly 4000 catch basin labels over the last 7 years (approximately 570 per year).	Increase level of storm drain marking by using Catch Basin cleaner crew to mark catch basins after cleaning and continue utilizing WRWA.
Revised	Adhere plastic "No Dumping – Drains to River" labels to catch basins.	Stormwater Coordinator	≈ 570 catch basins labeled		
2-4	Sponsor community participation event	DPW, Health, Police & School Departments	At least one event held annually - with residents participation	2017 Earth Day and biannual Westfield River Watershed Association river clean ups completed.	Continued effort. Planned activities for 2018 include 4-21-18 Earth Day clean up, WRWA River cleanups, and 4-27-18 Arbor Day tree planting.
Revised					
Revised					

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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities
3-1	Develop ordinances for illicit connections and discharges	Planning	Ordinance developed and presented to City Council	Ordinance adopted by City Council in June of 2005.	Done
3-2	Map stormwater system, outfalls and receiving waters	Engineering	Map created	Updates and revisions made to the City's stormwater system map this year through routine field inspections.	Continue upgrading GIS to meet the needs of the new stormwater permit. Continue to locate unknown outfalls and update City stormwater system as necessary.
3-3	Conduct dry weather outfall screening	Engineering and DPW	Number of Outfalls screened	All known outfalls were initially screened during summer 2009. No new outfalls were screened this year.	Outfall screening to take place as part of MS4 permit going into effect July 1, 2018
3-4	Develop and implement a plan to identify & remove non-stormwater discharges	DPW and Engineering	Number of illicit connections found and removed	Three outfalls found to have evidence of illicit connection. Ongoing effort to locate and remove sources.	Illicit connection identification and removal is ongoing effort. Future efforts to focus on outfalls discharging to the Westfield River, Little River, Powdermill Brook, Jacks Brook, and Moose Meadow Brook.
3-5	Investigate discharge locations of floor drains at fire dept.	DPW and Fire Department	Discharge location determined, connections to MS4 removed if necessary	None	None
Revised					
Revised					

3a. Additions

In permit year 15, the department completed development of a written IDDE Program Manual. The program manual outlines Westfield's regulatory authority, screening, investigation and elimination workflow processes and identifies priority drainage areas. To educate staff on outfall sampling procedures training was held on October 18, 2017 and several employees were trained on IDDE program and outfall sampling procedures. The DPW developed a stormwater outfall sampling manual as a supplement to the training program.

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities
4-1	Develop construction site E&S control ordinance	DPW and Building/Zoning and Planning	Final ordinance developed and presented to City Council	Ordinance adopted by City Council on June 2005.	Done
Revised					
4-2	Require a waste management plan at construction sites>1 acre	DPW and Building/Zoning, and Planning	Requirement developed, # of waste management plans reviewed	Construction site waste management plans are required by ordinance at sites disturbing greater than one acre. Approximately 9 plans reviewed.	Continuing effort.
4-3	Review site plans for stormwater impacts	DPW, Engineering, Building/Zoning, Conservation	Internal protocol developed, # of plans reviewed	Continuing pre-permit practice of reviewing site plans by City departments and during a City Round Table meeting.	Continuing effort.
Revised					
4-4	Consider public input during project's planning phase for projects >1 acre	DPW, Engineering, and Planning	Number of public review and comment periods held	Continuing pre-permit practice. Public comment available during site plan approval process at Planning Board meetings. 20 meetings held.	Continuing effort.
Revised					
4-5	Inspect Erosion and Sediment Controls	DPW, Engineering, Con. Comm & Building.	Inspections	City personnel from four departments conducted construction site inspections.	Continuing effort.
Revised					
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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities
5-1	Apply standard 2,3,4,7,9 of Mass. Stormwater Policy for Projects >1 acre	DPW	Final ordinance developed and presented to City Council	Included in stormwater management ordinance (BMP 4-1). Ordinance adopted by City Council.	Done.
5-2	Specify Stormwater BMP	DPW	BMP manual selected	BMP manual selected in 2004 and included in stormwater management ordinance (BMP 4-1). Ordinance adopted by City Council.	Done.
5-3	Develop procedure to track and schedule maintenance on BMPs	DPW	Procedure developed to track and plan regular maintenance on private structural BMPs	Procedure is developed. However, long term BMP maintenance is an ongoing effort. Tracking system for private structures needs improvement.	Continuing effort. Identify key contact persons and building plans to set up inspection schedule. Add private BMP structures to City's GIS.
Revised					
Revised					
Revised					
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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities
6-1	Conduct good housekeeping training	DPW	Training held for staff who could potentially impact stormwater	Training module given to key employees of the Department of Public Works. Municipal Airport employees are trained in accordance with the Airport Stormwater Pollution Protection Plan (SWPPP).	Continue development of training modules and training of more City employees. SPCC and SWPPP developed for public works facilities. Training to be held in permit year 16.
6-2	Street sweeping	DPW	Miles of streets swept	City crews swept 65 miles of city streets. Urban areas swept multiple times.	Continue sweeping City streets.
6-3	Roadway deicing	DPW	Alternative deicers evaluated, amount of alternative deicers used	Cryotech NAAC alternative used on airport runways for de-icing. ClearLane® by Cargill was used on City streets this year. The City used sand only in problem areas. Spreaders calibrated per DOT guidance	Continue to use alternative deicers, continue spreader calibration.
6-4	Snow removal	DPW	Install silt fence or hay bales around disposal area	Silt fence and hay bales were not installed around municipal snow disposal area, as City snow was stored in a field outside of aquifer area with no storm system or wetlands present.	Install silt fence or hay bales around snow pile where runoff may enter storm system as necessary.
6-5	Minimize impacts from municipal vehicle washing	Individual department heads	Need of additional controls evaluated, installed (if needed)	Phosphate-free biodegradable soap used for vehicle washings.	Continued use of phosphate-free, biodegradable soap.
6-6	Minimize impacts from municipal vehicle maintenance	Individual department heads	Hazardous material inventory updated	Hazardous material inventory is in place and up to date. Employees trained in hazardous materials handling as part of OSHA 10 hour construction outreach course.	Continue to update hazardous material inventory. Conduct hazardous materials/waste training for employees. Developed a SWPPP and SPCC plans for municipal facilities.
6-7	Catch basin cleaning and storm drain maintenance	DPW	Number of CBs cleaned, condition of system recorded	≈ 200 catch basins inspected/cleaned, and approximately ≈ 90 tons of sediment removed.	Continued effort to increase # of basins cleaned and improve tracking.

6-8	Park and landscape maintenance	DPW	Obtain amounts of pesticides, fertilizers used by contractor	Use of herbicides, pesticides and fertilizers is set by School Department IPM Plan. Maintaining records of chemical usage. Soil analysis performed to maximize effectiveness of fertilizers. City parks and field fertilization performed in house. Area treated was approximately 10 acres this year.	Continue to research environmentally friendly landscape management techniques, and implement where feasible.
6-9	Urban forestry program	DPW and Engineering	Urban forestry program developed, # of trees planted	Approximately 1 new City tree were planted this reporting period as part of redevelopment projects, and approximately 1 more tree were planted during Arbor day planting	Continued tree planting. Arbor day planting scheduled 4-27-18. Next Permit year expected to see increase in # of trees planted
6-10	Illegal dumping control	Health	Number of signs posted, number of sites cleaned up	Continued illegal dumping monitoring and clean up. 4-22-17 Earth Day and WRWA clean ups held.	Continue effort to maintain records of all complaints, responses and clean-up efforts. 4-21-18 Earth Day and WRWA cleanup efforts targeting historic dumping sites and areas of windswept trash deposit sites.
6-11	Spill prevention and response	Individual department heads	Number of training sessions held; number of employees attending	Annual training performed for the Fire Department relating to hazardous materials and response to hazmat incidents. The Local Emergency Planning Committee (LEPC) met 6 times last year.	Continue hazmat trainings and holding LEPC meetings.

6a. Additions

In permit year 15, the department completed development of a written Stormwater Pollution Prevention Plan (SWPPP) for both the public works facility and the City's transfer station. The development of the SWPPPs also included updates to both facilities Spill Prevention Control and Countermeasure (SPCC) plan. Trainings on both of these new compliance documents will be held during permit year 16.

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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

The City of Westfield has been operating its Municipal Separate Storm Sewer System (MS4) under a five year National pollution Discharge Elimination System (NPDES) permit as authorized by the US EPA NPDES Phase II Stormwater Regulations. This permit expired on April 30, 2008 and the EPA has drafted a new general permit for MS4 to take its place which will be effective July 1, 2018. The City has continued in its efforts to meet all of the permit requirements in this interim period.

Under the expired permit, the City was required to develop a Stormwater Management Program that included six minimum control measures. The following is a report on the City's current status pertaining to these six control measures and an assessment of their effectiveness.

Control Measure 1 – Public Education and Outreach

This measure requires the City to educate the public on the impacts of their activities on stormwater and on the impact of polluted stormwater on water quality.

Status – The City has initiated a public education program to distribute educational materials to the public. This program includes the distribution of educational pamphlets to residents with the City's combined utility bills, and the direct mailing of educational pamphlets to businesses and industrial facilities. Pamphlet distribution is done every other year. Educational materials were mailed in 2016. Educational pamphlets are displayed and available at City Hall and at the several City schools. Stormwater information for public review is maintained on the City's website.

Dog brochures detailing pet waste concerns are made available to dog owners. The City, with the help of the Connecticut River Stormwater Committee, reached out to dog owners about their pet waste disposal practices.

The City is also a member of the regional Connecticut River Stormwater Committee. Membership in this committee gives the City access to regional media campaigns that may be more effective in helping educating the public. With its larger resources, the Connecticut River regional stormwater committee provides the City with access to public education programs that would be difficult for the City to undertake on its own. The City intends to continue its participation in the regional stormwater committee in the coming year. The Stormwater Committee's 2017 Annual report is included as an attachment to this report.

In effort to increase environmental awareness, waterway labeling of brooks and streams where they cross under roadways has been maintained this reporting period.

Assessment: Based on the performance of educational and outreach measures, the City is in compliance with Control Measure 1.

Control Measure 2 – Public Participation and Involvement

This measure requires the City to promote public involvement in developing and implementing its Stormwater Management Program.

Status: The public is given an opportunity to participate in all Planning Board, City Council, Board of Public Works and Conservation Commission meetings where projects are being considered. Public participation is always welcome and encouraged.

A Volunteer Earth Day Cleanup was held in conjunction with the Westfield River Watershed Associations (WRWA) on April 2017, in which individuals removed over 100 bags of trash and several tons of bulk items from locations throughout the City. Hampden County Sherriff's Department collected more bags of trash from the City right of way at various locations throughout the City. The City conducted bulk trash pickups for City residents between April 3rd and November 30th 2017.

The City's Stormwater Advisory Committee met as a part of the City's weekly Round Table meetings to comment on proposed developments and re-developments.

The City continued its membership in the regional Barnes Aquifer Protection Advisory Committee where all projects to be sited in the Barnes drinking water aquifer were reviewed and comments furnished to the appropriate City Committees. Stormwater management is a prime concern of this committee.

Assessment: The City's outreach and public participation and outreach continue to meet permit requirements.

Control Measure 3 – Illicit Discharge and Detection

The City developed a Stormwater System Map, which is updated continuously, and a program to find and remove illicit connections to the stormwater system.

Status: The City Council has adopted an ordinance governing illicit connections and their removal. The City has mapped the known storm sewer system and outfalls and a separate sewer separation investigation has been completed. A dry weather screening of all known outfalls in the City has also been completed.

The upstream piping system for new outfalls are continuously investigated and added to the City's storm sewer map, and newly found outfalls still need to be screened.

Assessment: Three outfalls were found to have evidence of illicit connection. Investigation for pollution sources continues this reporting period. The City's efforts on this control measure have been met for the most part. Locating and removing illicit connections will be an ongoing effort requiring increased departmental coordination and additional City resources to accomplish. The network of piping comprising the City's stormwater system requires additional investigations and continual updating. The City hopes to build collaborative efforts in the upcoming reporting year in order to advance the program.

Control Measure 4 – Construction Site Runoff Control

This measure requires the City to develop and enforce an erosion and sediment control program for construction activities that disturb greater than one acre of land.

Status: An ordinance was adopted by the City Council requiring erosion and sediment control at construction sites that disturb greater than one acre. This ordinance also provides for construction site waste management and has provisions for inspection and enforcement. Site inspections were performed by the

DPW, Building, Health, and Conservation personnel this reporting period.

Assessment: The required ordinances are in place and all site plans and special permits are reviewed for stormwater impacts and construction site erosion and sediment controls. Better interdepartmental coordination and communication would be beneficial in conducting inspections.

Control Measure 5 – Post Construction Stormwater Management

This measure requires the City to develop, implement and enforce a program addressing discharges of post construction stormwater runoff from developed and redeveloped sites.

Status: An ordinance was adopted by the City Council in 2005 to address stormwater runoff from new development and redevelopment sites. The ordinance covers long-term operation and maintenance of Stormwater Best Management Practices (BMPs) and ensures that controls are in place to prevent or minimize impacts to water quality. A procedure has been developed to track public and private structural BMPs; however, development of an inventory of existing private structural BMPs as well as tracking maintenance on private BMP's is an ongoing effort.

Assessment: Control measures are in place; however, additional resources are still needed to track and control private structural BMPs.

Control Measure 6 – Municipal Pollution Prevention and Good Housekeeping

This measure requires the City to develop and implement a program to prevent or reduce pollutant runoff from municipal operations.

Status: Municipal Airport employees and tenants receive training in accordance with the Airport's Stormwater Pollution Prevention Plan (SWPPP). Approximately 65 miles of City streets were swept this year, and downtown area street were swept additional times in preparation for events. An alternative deicer, ClearLane® by Cargill, was used on City streets. Limited sand was used on streets this reporting period. Silt fence and hay bale installation around the snow disposal sites were not completed this reporting period as snow was trucked to a City owned field that is outside the aquifer zone, borders no wetlands, and does not drain to municipal stormwater infrastructure. The City continues to use phosphate free soap. Hazardous material inventory is complete. ≈ 200 catch basins were inspected and cleaned this reporting period. 1 new City tree was planted this reporting period. Illegal dump sites are cleaned as they are discovered and "No Dumping" signs posted as appropriate. Local Emergency Planning Committee met six times this reporting period.

Assessment: Efforts under this control measure will be ongoing and need periodic review to assure that all BMP's are being implemented to the most practicable extent. Catch basin cleaning and marking needs to increase. The # of trees will improve in the next permit year.

Planned activities for the upcoming year:

The City of Westfield will continue to operate its municipally separate storm sewer system in accordance with the expired NPDES MS-4 permit until the new permit takes effect in July 2018. Planned activities for the coming year include:

1. Increase awareness of proper disposal of dog waste.
2. Continued improvement to the City website stormwater information.
3. Continue Stormwater Advisory Committee meetings.
4. Continue membership in the Connecticut Valley Regional Stormwater Committee.
5. Catch basin labeling and cleaning program improvements instituted.
6. Continue to target possible illicit connections to outfalls on the Westfield River, Little River, Powdermill Brook, Jack's Brook, and Moose Meadow Brook.
7. Continue building an inventory of all public and private stormwater structural BMPs. The City's GIS system will be used in this process.
8. Continue conducting city inspections of public and private structural BMPs.
9. Install silt fencing and/or hay bales around the City' snow removal sites as necessary.
10. Continue annual maintenance of City structural BMPs.
11. Continue city employee good housekeeping and stormwater management training.
12. Procedural improvement of construction site inspection report review and approval.
13. Compliance with the 2018 Massachusetts Small MS4 General Permit.

Conclusion:

At the completion of year 15 of the City's MS-4 Permit, the City of Westfield is in compliance with the conditions of this permit with the following exceptions:

BMP 3-4: Illicit connections identification and removal in priority waters is still underway.
BMP 4-5: Process improvements are needed for uniformity of erosion and sediment control inspection reports.
BMP 5-3: Inventory of all private and public structural BMPs is still ongoing.
BMP 6-2 Street sweeping needs improvement
BMP 6-9: Tree planting #s need improvement

No further changes are recommended at this time.

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)	
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)	
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	
Shoreline cleaned since beginning of permit coverage	(mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored **	(#)	
▪ 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					
▪ Erosion & Sediment Control					
▪ Post-Development Stormwater Management					
Accompanying Regulation Status (indicate with "**X**")					
▪ Illicit Discharge Detection & Elimination					
▪ Erosion & Sediment Control					
▪ Post-Development Stormwater Management					

Mapping and Illicit Discharges

	(Preferred Units)	Response
Outfall mapping complete	(%)	
Estimated or actual number of outfalls	(#)	
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	
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 vactor **	(%)	

	(Preferred Units)	Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)	
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	
Treatment units induce infiltration within 500-feet of a wellhead protection area	# or y/n	

Connecticut River Stormwater Committee
Annual Report
April 1, 2017 to March 31, 2018

The Connecticut River Stormwater Committee

The Connecticut River Stormwater Committee is an intergovernmental compact of 17 municipalities that is organized to collaborate in meeting NPDES MS4 permit requirements for stormwater education and outreach (Minimum Control Measure #1). Facilitated and staffed by the Pioneer Valley Planning Commission, the Committee also works together to meet other permit compliance activities where appropriate and needed. Member communities are shown in Table 1 below.

Table 1: Connecticut River Stormwater Committee Member Communities

Member Community	Committee Representatives and Departments
Agawam	Tracey DeMaio, Department of Public Works
Belchertown	Steve Williams, Department of Public Works
Chicopee	Quinn Lonczak, Department of Public Works
East Longmeadow	Bruce Fenney, Department of Public Works
Easthampton	Dan Murphy, Department of Public Works
Granby	Dave Derosiers, Highway Department
Hadley	Marlo Warner, Department of Public Works
Holyoke	Michael McManus, Department of Public Works
Longmeadow	Mario Mazza and Peter Vancini, Department of Public Works
Ludlow	Jim Goodreau, Department of Public Works
Northampton	Doug McDonald, Department of Public Works
Southwick	Randall Brown, Department of Public Works
South Hadley	Melissa LaBonte, Department of Public Works
Springfield	Kevin Chaffee, Planning/Conservation
West Springfield	Jim Czach and Connor Knightly, Department of Public Works
Westfield	Casey Berube and Joe Kietner, Department of Public Works
Wilbraham	Tonya Basch, Department of Public Works

* Member that joined Committee this year.

Education and Outreach over the Past Year

The Connecticut River Stormwater Committee has moved forward several education and outreach activities under the 2003 permit. At the same time, the delayed start of the 2016 MS4 permit has provided time for the Stormwater Committee to lay further groundwork for its education and outreach program over the longer term. This includes developing a draft matrix of education and outreach activities for the next permit term, participating in the state-wide stormwater coalition education and outreach subcommittee to procure a consultant to develop a state-wide education and outreach campaign, and most recently, meeting with students from Worcester Polytechnic Institute

who are working with MassDEP to prepare a repository of stormwater education and outreach materials for use by MS4 permittees.

The narrative below summarizes the work of the Connecticut River Stormwater Committee during the 2017-2018 reporting year, which includes the following:

1. Produced 30-second radio spot as part of continued Soak up the Rain stormwater education campaign that will run on 3 stations throughout the Pioneer Valley in April 2018
2. Designed website for Connecticut River Stormwater Committee and began developing content
3. Worked with state-wide coalition on procuring services to help with design and materials for state-wide education program
4. Continued to lead urban tree planting project in Chicopee, Holyoke, and Springfield
5. Continued to lead project in Holyoke to reduce urban flows into Day Brook

In addition to these public education and outreach activities described in fuller detail below, members of the Stormwater Committee have joined PVPC in other MS4 permit related activities, including:

- Conducting a series of two training workshops for municipal staff that were videotaped and organized into specific modules that can now be used for subsequent annual training required by the new permit. Designed in consultation with consultant Wright Pierce, topics covered elements under the "good housekeeping" and the "illicit discharge detection and elimination" categories of the stormwater permit. Funding for these workshops was provided in part by the Massachusetts Department of Administration and Finance's Efficiency and Regionalization grant. The videos have already been shared with other MS4s in the state and are being loaded to YouTube for easy access by any other MS4 in Massachusetts who wishes to use them. Going forward, Connecticut River Stormwater Committee members have decided to use the video training modules as part of annual events where trainees from the region come together, watch the video modules, and then engage in discussion and problem solving. This will provide for more meaningful engagement than trainees watching videos on their own. Such an annual training event might also include field visits to learn about specific and/or sampling techniques. PVPC will plan to host these events as part of its Stormwater Committee work.

- Reviewing and updating municipal land use code in nine communities to meet new construction, and development and redevelopment standards within the 2016 federal stormwater permit. Funding for the code review was provided by the Massachusetts Department of Administration and Finance's Efficiency and Regionalization grant. A 10th stormwater committee member community elected to undertake code review through a fee for service arrangement with PVPC. This work included review and update of provisions for control of illicit discharges, erosion and sediment control, stormwater management permitting, subdivision regulations, and zoning. A detailed checklist with recommended code language was developed as part of this work to facilitate review in additional communities going forward.

  As there are still many issues to be worked out relative to code, including updating of the Massachusetts Stormwater Standards so that they better relate to the new MS4 permit requirements, and development of model language and procedures to help with off-site mitigation for redevelopment projects, PVPC staff has recommended that communities not immediately adopt code changes developed under this project. PVPC has noted that these

updates are not required to be in place until Year 2 of the permit effective date. PVPC staff is currently working with other members of the state-wide coalition of stormwater coalitions to fold these changes into a state-wide resource package on code updates, including a model bylaw, and the guidance being developed on off-site mitigation.

- Procuring services regionally of Wright Pierce to provide integrated stormwater system mapping and data collection to meet requirements of the new 2016 permit. Seven stormwater committee members—Agawam, Belchertown, Granby, Ludlow, Northampton, South Hadley, and Southwick – are participating in this work. Research conducted in concert with communities prior to this procurement showed significant cost savings in collaborating on this work rather than going it alone.

  To date, project work has entailed development of the mapping interface with stormwater infrastructure, and development of forms to ensure that all data required in the new permit (outfall screening and sampling, manhole inspections, catch basin cleaning, etc.) can be captured in the field during inspections and then uploaded to reference with geographically specific locations within Arc GIS mapping of the storm system for analysis in defining priority catchments and annual reporting to EPA.

1. Aired Soak up the Rain radio spot

The Stormwater Committee produced a 30-second radio spot to air, starting April 2. The Soak up the Rain spot is narrated by a local radio personality and calls on people to take notice and take action. It will air 183 times in a three-week period on three different radio stations in the region, covering all Stormwater Committee member communities. It will be aired at peak and non-peak listening hours to reach a variety of different audiences. The 30-second spot reads as follows:

> When stormwater flows across yards, driveways or parking lots, it picks up leaked car oil, lawn chemicals, litter and animal waste.
>
> This contaminated water ends up in the Connecticut River.
>
> Help keep our river clean. Don't let rain run – soak it up.
>
> Redirect downspouts to your lawn. Use a rain barrel. Create a rain garden or install porous pavement.
>
> Brought to you by the Connecticut River Stormwater Committee, a coalition of 17 Pioneer Valley communities.
>
> Learn more at soakuptherain.pvpc.org

Radio stations in the region that will air the Soak up the Rain radio spot.

It his hoped that interested listeners will follow the reference to the soak up the rain web page and the Committee will be able to make some determination of the spot's effectiveness by counting the increase in clicks on the web site. Results will provide some direction to the Committee as it continues to develop its 5-year education and outreach program under the new 2016 permit.

Production of the radio spot follows on an unsuccessful 4-month effort toward adapting a stormwater video from West Michigan Environmental Action Council. Members had researched stormwater messaging videos, selected the West Michigan video, engaged a local video producer for the adaptation, and worked out the terms of an agreement with the West Michigan group. The problem arose, when the local video producer learned that the Michigan group had no high resolution video file from which to work. Given that the Connecticut River Stormwater Committee members had talked about more than website use of the adapted video, a low resolution file was not adequate. It was surprising that without a high resolution file of the video, the West Michigan group would take the conversation so far. Nonetheless, this was an important lesson in learning what the right first question is to ask when talking about video adaptation.

2. Designed website for Connecticut River Stormwater Committee

While each stormwater committee member continues to maintain and update stormwater information on each of their municipal websites, there is a need to promote stormwater information on a regional Connecticut River website. The regional stormwater website will provide one website reference for forthcoming publications and media outreach work. Links can be made from the local municipal websites to the regional website and vice versa.

Design of the Connecticut River stormwater website includes "portals" for exploring the site in two ways: as an audience enumerated in the MS4 permit (resident, business, developer, industry) and as someone interested in learning more about a specific stormwater best practice important to water quality issues in the region: lawn and yard care, pet waste management, car care, soak up the rain, turf management, and septic system care. Committee members have been talking too about the importance of finding ways to include materials for educators (stormwater curriculum lessons), and agriculture (perhaps connecting to resources through the Extension Program at the University of Massachusetts, Amherst, and any nonpoint source nitrogen reduction initiatives that may emerge).

Content for the website is currently under development by PVPC. It is expected that additional content will be available through the statewide coalition if stormwater coalitions, which has just hired Water Words that Work to outline a state-wide education and outreach Think Blue campaign with development of some associated materials.

One important facet of this regional Connecticut River stormwater website is building the connection between enjoying and appreciating the resource and connecting to action. As such, PVPC will be working with its current Connecticut River US website, maintained in partnership with the Connecticut River Conservancy, to draw stronger lines between getting out on the resource and taking action for stormwater. The Connecticut River US website has information on paddling, trails, and water quality.

Design of Connecticut River Stormwater website that is in development.

3. Collaborated with state-wide stormwater coalition of coalitions

On behalf of Connecticut River Stormwater Committee members, PVPC has been active on the larger coalition of state-wide stormwater coalitions committee and the group's education and outreach subcommittee. The group was successful in applying for and receiving a $200,000 MS4 assistance grant to lay the groundwork for a state-wide stormwater outreach campaign. The campaign will help to define messaging, lay out a plan of work to meet education and outreach permit requirements, and develop a selection of materials for use by coalitions and municipalities. Water Words that Work was just selected as the project consultant at the end of March. PVPC staff is excited by the prospect of working with such a talented consultant that has developed state-wide stormwater campaigns in several states already. At the same time, staff is hopeful that the 5-year education and outreach framework it has been developing with Connecticut River Stormwater Committee members can be further refined with consultant input.

The following two projects, while specific to certain municipalities, are expanding awareness regionally about stormwater. They also serve to build capacity and know-how in planning, design, and construction of better stormwater management practices. Each project has its own outreach and education component.

4. Continue to lead urban tree planting project in Chicopee, Holyoke, and Springfield

PVPC continues to lead an effort to promote urban tree planting in the region's 3 major cities in partnership with the US Forest Service, Massachusetts Executive Office of Energy and Environmental Affairs, the Valley Opportunity Council, Nuestras Raices, ReGreen Springfield, Conway School of Design, Mass DCR, and the Cities of Chicopee, Holyoke, Springfield. Aimed at reducing stormwater flows to combined sewer areas and promoting greater climate reslience, the project involves an integrated community outreach process involving multiple neighborhood workshops and workshops for public works officials. Once completed, the project will provide the following major deliverables:

- installation of 2,200 trees on local streets and yards
- final engineering design for a green streets in each municipality
- model stormwater tree rebate ordinance

The project is made possible thanks to a $239,000 grant award to PVPC from the US Forest Service under the State and Private Forestry FY15 Northeastern Area Landscape Scale Restoration Program.

5. Continue to lead project in Holyoke to reduce urban flows into Day Brook

Through an EPA Urban Small Waters Grant, PVPC is developing a green infrastructure plan for Day Brook in Holyoke, which flows from west to east, remaining above-ground from Anniversary Hill Park and Community Field before being conveyed underground beneath the City and routed through the Waste Water Treatment Plant.

In this past year, the project completed work to increase awareness about this "secret stream" running unseen through the urban landscape. Conducted largely by project partner Enchanted

Circle Theater, awareness work this year followed a six-week lesson series that engaged third and fifth graders in learning about stormwater and producing artwork for use in a mural and "storywalk" about Day Brook.

The mural, which relates the unseen journey of Day Brook in Holyoke, was unveiled at a ribbon cutting event at Community Field in June. The event for the mural included stormwater learning stations, including rain gardens in a cup activities. The storywalk unveiling occurred at the Sullivan School in September as part of Arts in Education Week. Students participated in the unveiling and then spent time being stormwater detectives on the school grounds, working in teams to check off items on a treasure hunt list. The story walk, conceived as movable artwork that tells the story of Day Brook in a series of six panels, has been installed for periods of time at the Sullivan School, Community Field, City Hall, and the Public Library.

Students enjoyed the thrill of unveiling the Day Brook story walk at the Sullivan School in Holyoke. The story walk incorporated student artwork and words telling the history of Day Brook.

Local media provided good coverage of the story walk unveiling.

As part of the story walk unveiling event, a student records finding a storm drain in the stormwater detectives treasure hunt on school property in photo above. In photo at right, Sullivan School Principal John Breish talks with students about a pipe draining storm flow from the school's roof.