

**Municipality/Organization:** City of Northampton, MA

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**EPA NPDES Permit Number:** MA041016

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**MassDEP Transmittal Number:** W-035904

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**Annual Report Number & Reporting Period:** Year 12  
April 1, 2014 – March 31, 2015

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## NPDES PII Small MS4 General Permit Annual Report (Due: May 1, 2015)

### Part I. General Information

Contact Person: Edward S. Huntley

Title: Director of Public Works

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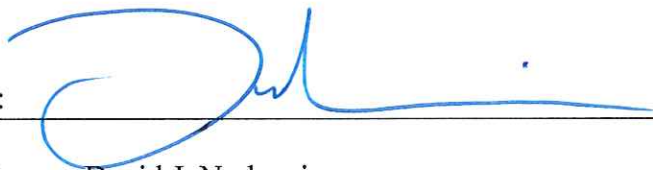
Mailing Address: 125 Locust Street, Northampton, MA 01060

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#### Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature:



Printed Name: David J. Narkewicz

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Title: Mayor

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Date:

APRIL 30, 2015

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**Part II. Self-Assessment**

**The City of Northampton has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions.**

## 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 12 (Reliance on non-municipal partners indicated, if any)                                                                                                                                                                       | Planned Activities –                                                                                                                                                           |
|----------------|------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1<br>Revised | Stormwater Educational Brochure                            | DPW                           | General educational brochure developed and distributed by Fall 2004.<br>General educational brochure developed by Spring 2004 and distributed by Fall 2007.                                                                                           | General educational brochure distributed to 15,090 households, businesses and other mail recipients in Northampton in 2007, 2008, 2009, 2010, 2011, 2012, 2013 and 2014.<br>Stormwater information also distributed at Rain Barrel sales and other public events. | Joined the Connecticut River Stormwater Committee and will implement public education activities through the Soak Up the Rain and Pioneer Valley Soak Up the Rain initiatives. |
| 1.2<br>Revised | Stormwater Educational Information on DPW Website          | DPW                           | Information on the Stormwater Management Program and other public educational material on DPW website.                                                                                                                                                | New information and links to resources continually put on the City's web site.                                                                                                                                                                                    | New information will continue to be put on the City's web site.                                                                                                                |
| 1.3<br>Revised | Stormwater Educational Outreach to Community School Groups | DPW                           | Educational Materials Available for use in schools and community groups by Fall 2004<br><br>Stormwater information used in classrooms as determined by interest.                                                                                      | Ongoing curriculum at the Northampton High School on water and watersheds that includes stormwater. Students have conducted limited sampling in past years.                                                                                                       | Continue to work stormwater information into curriculums of schools.                                                                                                           |
| 1.4<br>Revised | Tributary Signage                                          | DPW                           | Tributary signage on five bridges in 2005 and 2007<br>Eliminated tributary signage in favor an expanded catch basin labeling program due to cost constraints and greater effectiveness of the catch basin labels for public education (see 2.3 below) |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                |

|         |                               |     |                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                  |
|---------|-------------------------------|-----|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.5     | Targeted Educational Material | DPW | Additional Educational Outreach as necessary. | <p>Continued program to sell rain barrels to residents. 56 rain barrels were sold in 2014-2015.</p> <p>Continued individual outreach to property owners, engineers, and developers on green infrastructure and Low Impact Development (LID) techniques.</p> <p>Joined the Connecticut River Stormwater Committee and implemented public education activities through the Soak Up the Rain and Pioneer Valley Soak Up the Rain initiatives.</p> <p>Soak up the Rain workshop in Springfield for homeowners and business in September 2014 to learn about rain gardens, rain barrels, cisterns, porous pavers, green roofs, dry wells and other systems. Introduced a credit program for Rain Gardens and Porous pavement/pavers for residential properties as part of the Stormwater and Flood Control Utility.</p> | <p>Continue to increase awareness and use of LID and Green Infrastructure practices for new developments and small scale improvements on residential properties (i.e. rain gardens, rain barrels and porous pavement/pavers)</p> |
| Revised |                               |     |                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                  |

## 2. Public Involvement and Participation

| BMP ID #       | BMP Description                    | Responsible Dept./Person Name | Measurable Goal(s)                                                                                                                               | Progress on Goal(s) – Permit Year 12<br>(Reliance on non-municipal partners indicated, if any)                                                                                                                                                                                      | Planned Activities –                                                                                                                         |
|----------------|------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 2.1<br>Revised | Public Advisory Committee          | DPW                           | Regular Advisory Committee meetings.                                                                                                             | The Board of Public Works (BPW) has served as the public advisory committee for the Stormwater Management Program. The Board of Public Works was eliminated in 2014 and the Public Works Commission continued the role as advisory committee for the Stormwater Management Program. | Continue to utilize the Public Works Commission as a means for public participation.                                                         |
| 2.2<br>Revised | Volunteer Water Quality Monitoring | DPW                           | Water quality monitoring and inspections throughout the City by volunteers.<br>Water quality visual inspections by DPW employees and volunteers. | Visual inspections of priority outfalls completed by DPW staff. Volunteers and staff with the Connecticut River Watershed Council conducted Connecticut and Mill River water quality monitoring.                                                                                    | Continue water quality visual assessments at priority outfalls throughout the City working with volunteers as possible. (see also 3.3 below) |
| 2.3<br>Revised | Storm Drain Labels                 | DPW                           | Storm Drain labels on 20% of Catch Basins by Spring 2008                                                                                         | Volunteers labeled 150 (5%) catch basins throughout the City in 2004. 500 additional labels (15%) were installed by the Fall of 2009. Purchased 1,700 metal catch basin labels in February 2014.                                                                                    | Install new metal catch basin labels starting in the downtown areas of Northampton and Florence.                                             |
| 2.4<br>Revised | Community Clean-Ups                | DPW                           | Community Clean-Ups publicized and completed by Spring 2009.                                                                                     | Multiple clean-ups completed in the downtown area, specific city neighborhoods, rail trails, Mill River, and the “Meadows” section of the City near the Connecticut River.                                                                                                          | Continue river and neighborhood cleanups throughout the City.                                                                                |

### 3. Illicit Discharge Detection and Elimination

| BMP ID # | BMP Description                             | Responsible Dept./Person Name | Measurable Goal(s)                                                                                                                     | Progress on Goal(s) – Permit Year 12<br>(Reliance on non-municipal partners indicated, if any)                                                                                                                                                                                                                                                                                                                                                                                                                                   | Planned Activities –                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------|---------------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.1      | Storm Sewer System Map                      | DPW                           | Complete storm sewer map and field verify by Spring 2005.                                                                              | GIS storm sewer map completed. Updates and revisions to the storm sewer map added as necessary.                                                                                                                                                                                                                                                                                                                                                                                                                                  | Continue to make updates and revisions to the storm sewer map.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Revised  |                                             |                               |                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3.2      | Legal Prohibition and Enforcement           | DPW                           | Illicit Connections and Discharges to the Municipal Storm Drain System Ordinance adopted by City Council                               | Previously completed. (Illicit Connections and Discharge to the Municipal Storm Drain System Ordinance adopted by the City Council and signed by the Mayor June 17, 2004.)                                                                                                                                                                                                                                                                                                                                                       | Continue to enforce the Illicit Connections and Discharge to the Municipal Storm Drain System Ordinance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Revised  |                                             |                               |                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3.3      | Illicit Discharge Detection and Elimination | DPW                           | Priority screening areas identified and targeted for inspections. Investigation and enforcement of illicit discharges and connections. | Continued visual inspections of priority outfalls. Investigated various public complaints.<br><br>Follow up to dry weather sampling results and recommendations conducted in 2011 and 2013 including manhole inspections and CCTV inspections. As part of IDDE investigations in the watershed area to outfall #146, a failing sanitary sewer system in Warner Street was located and fast-tracked for repair and reconstruction. Design was completed in 2014 and the project has been put out to bid for construction in 2015. | The City will continue IDDE investigation in all drainage areas where previous investigations have shown positive indicators of contamination and further action and IDDE investigation was recommended. Additional manhole inspections and sampling, CCTV inspections, dye tests, and smoke tests will be used as necessary to locate the sources of contamination and work to correct the problems. Continue to conduct visual inspections at priority outfalls including limited bacteria sampling. Investigation and enforcement of illicit discharges and connections as they are discovered. |

| BMP ID # | BMP Description               | Responsible Dept./Person Name | Measurable Goal(s)                                                                                                                   | Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)                                                                                                                                                                                                                                  | Planned Activities –                                                                                                                                             |
|----------|-------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.4      | Targeted Educational Outreach | DPW                           | Conduct annual household hazardous waste collection.<br>Conduct outreach to the public to encourage reporting of illicit discharges. | Household Hazardous Waste Collection publicized and completed in May 17, 2014. 143 Northampton residents or businesses participated and a total of 1,795 gallons of hazardous waste was collected. Information about reporting illicit discharges was discussed in Stormwater Brochure distributed to residents of the City. | Continue Household Hazardous Waste Collection. Continue educational outreach to the public for reporting illicit discharge to the storm drain system to the DPW. |

#### 4. Construction Site Stormwater Runoff Control

| BMP ID #       | BMP Description                        | Responsible Dept./Person Name | Measurable Goal(s)                                                                                        | Progress on Goal(s) – Permit Year 12<br>(Reliance on non-municipal partners indicated, if any)                                                                                                                                                                                                         | Planned Activities –                                                                                                                                  |
|----------------|----------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.1<br>Revised | Erosion and Sediment Control Ordinance | DPW                           | Erosion & Sediment Control and Post Construction Stormwater Management Ordinance adopted by City Council. | Completed.<br>(Erosion & Sediment Control and Post-Construction Stormwater Management Ordinance adopted by the City Council and signed by the Mayor June 17, 2004.)                                                                                                                                    | Implement the Erosion & Sediment Control and Post-Construction Stormwater Management Ordinance as necessary.                                          |
| 4.2<br>Revised | Stormwater Site Plan Reviews           | DPW                           | Procedures for site plan review implemented following adoption of Ordinance.                              | Reviewed all proposed development projects disturbing over 1 acre for compliance with the Erosion & Sediment Control and Post Construction Stormwater Management Ordinance. Issued stormwater management permits for 3 projects and reviewed all smaller projects applying for planning board permits. | Continue to review all development projects for compliance with the Erosion & Sediment Control and Post Construction Stormwater Management Ordinance. |
| 4.3<br>Revised | Stormwater Site Inspections            | DPW                           | Procedures for site inspections implemented following adoption of Ordinance.                              | Conducted site inspections and responded to public complaints regarding construction sites.                                                                                                                                                                                                            | Continue inspections as required for compliance with the Erosion & Sediment Control and Post Construction Stormwater Management Ordinance.            |
| 4.4<br>Revised | Construction Site Public Participation | DPW                           | Procedures for receiving information submitted by the public in place following adoption of Ordinance.    | Stormwater Management Permit application process is concurrent with Planning Board and/or Conservation Commission review so the public hearings during review by these entities serve as the public hearing for each project.                                                                          | Conduct further outreach to the public on how to identify and report stormwater runoff problems at construction sites.                                |



## 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 12<br>(Reliance on non-municipal partners indicated, if any)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Planned Activities –                                                                                                                                                                                                                                                                                                                                                                                           |
|----------|--------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.1      | BMP Strategies                       | DPW                           | Adopt or change City regulations to create a consistent post-construction runoff control strategy. | Completed.<br>Post-construction runoff control strategy defined and adopted as part of Erosion and Sediment Control and Post-Construction Stormwater Management Ordinance adopted June 2004.<br>The DPW continued to work with the Office of Planning and Sustainability and the Pioneer Valley Planning Commission to consistently revise all relevant municipal ordinances to add specific LID and green infrastructure guidance and requirements. Revised site plan regulations were adopted and include increased requirements for infiltration and encouragement of green infrastructure and Low Impact Development (LID). | The DPW will continue working with the Northampton Office of Planning and Sustainability and the Pioneer Valley Planning Commission to consistently revise requirements for stormwater management in all relevant municipal ordinances.<br>Continue to maintain a consistent post-construction runoff control strategy. Conduct outreach to developers to educate about LID and preferred runoff control BMPs. |
| Revised  |                                      |                               |                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                |
| 5.2      | Runoff Control Performance Standards | DPW                           | Post-Construction runoff control performance standards incorporated into an Ordinance.             | Completed.<br>Performance standards developed and incorporated into the Erosion and Sediment Control and Post-Construction Stormwater Management Ordinance, which was adopted in June 2004.                                                                                                                                                                                                                                                                                                                                                                                                                                     | Enforce compliance with post-construction runoff control performance standards through site plan review and site inspections.<br>Continue to define the preferred structural and non-structural BMPs.                                                                                                                                                                                                          |
| Revised  |                                      |                               |                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                |

| BMP ID # | BMP Description                           | Responsible Dept./Person Name | Measurable Goal(s)                                                                                                           | Progress on Goal(s) -- Permit Year 12<br>(Reliance on non-municipal partners indicated, if any)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Planned Activities --                                            |
|----------|-------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| 5.3      | Structural BMP Inspection and Maintenance | DPW                           | Develop inspection schedules and a maintenance enforcement mechanism for structural stormwater controls throughout the city. | All development projects over 1 acre since 2004 with approved Stormwater Management Permits have been required to complete a legally binding Stormwater Operation, Maintenance, and Inspection Agreement as a condition of the permit. Inspections of the BMPs are conducted on an on-going basis. As part of the new Stormwater and Flood Control Utility, a Credit and Incentive Policy has been implemented starting July 1, 2014 to provide credits for stormwater BMPs that have been operated and maintained in good working condition. Property owners will be required to provide documentation of the condition and maintenance status of BMPs for the proposed credits. | Continue inspections of the stormwater BMPs throughout the City. |
| Revised  |                                           |                               |                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -                                                                |

## 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 12<br>(Reliance on non-municipal partners indicated, if any)                                                                                                                                                                                                                                                                                                              | Planned Activities –                                                                                                                                                                                                                                                                                                                                                              |
|----------------|-------------------------------------------------|-------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6.1<br>Revised | Drainage System Operation & Maintenance Program | DPW                           | Operation and maintenance (O&M) program implemented.  | Implemented stormwater O&M activities including street sweeping, catch basin cleaning, water quality unit cleaning, limited drain line cleaning, and drain system repairs.<br>In March 2014, the City Council approved the establishment of a Stormwater and Flood Control Utility to provide a consistent method to finance stormwater system operation, maintenance, and compliance with EPA regulations. | Continue to implement O&M activities and identify ways to further reduce the discharge of pollutants through the storm drain system.<br>The Stormwater and Flood Control Utility will provide the revenue for on-going operation, maintenance, and upgrades to the City's drainage system as necessary to meet the needs of the City and the requirements of regulatory agencies. |
| 6.2<br>Revised | Employee Training                               | DPW                           | Employee training completed                           | Completed in 2004 and ongoing.                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                   |
| 6.3<br>Revised | Pollution Prevention BMPs                       | DPW                           | Pollution prevention BMPs identified and prioritized. | Design of improvements to the Hinckley Street drainage system and outfall. Design of stormwater green infrastructure improvements as part of the renovation of Pulaski Park in downtown Northampton.                                                                                                                                                                                                        | Identify and implement additional pollution prevention BMPs for DPW properties, road projects, and activities as well as other Municipal properties and parking lots.                                                                                                                                                                                                             |

**7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) \*Not Applicable\***

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any) | Planned Activities – |
|----------|-----------------|-------------------------------|--------------------|---------------------------------------------------------------------------------------------|----------------------|
| Revised  |                 |                               |                    |                                                                                             |                      |
| Revised  |                 |                               |                    |                                                                                             |                      |
| Revised  |                 |                               |                    |                                                                                             |                      |
| Revised  |                 |                               |                    |                                                                                             |                      |
| Revised  |                 |                               |                    |                                                                                             |                      |
| Revised  |                 |                               |                    |                                                                                             |                      |
| Revised  |                 |                               |                    |                                                                                             |                      |

**7a. Additions**

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**7b. WLA Assessment**

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

n/a

#### Part V. Program Outputs & Accomplishments

(Since beginning of permit coverage unless specified otherwise by a \*\*, which indicates response is for period covering April 1, 2014 through March 31, 2015)

##### Programmatic

|                                                               | (Preferred Units) | Response     |
|---------------------------------------------------------------|-------------------|--------------|
| Stormwater management position created/staffed                | (y/n)             | Y            |
| Annual program budget/expenditures **                         | (\$)              | \$164,000    |
| Total program expenditures since beginning of permit coverage | (\$)              | \$1,338,000+ |
| Funding mechanism(s) (General Fund, Enterprise, Utility, etc) |                   | Utility      |
|                                                               |                   |              |

##### Education, Involvement, and Training

|                                                                            |               |           |
|----------------------------------------------------------------------------|---------------|-----------|
| Estimated number of property owners reached by education program(s)        | (# or %)      | 85%       |
| Stormwater management committee established                                | (y/n)         | Y         |
| Stream teams established or supported                                      | (# or y/n)    | N         |
| 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 %)      | 143       |
| ■ material collected **                                                    | (tons or gal) | 1,795 gal |
| School curricula implemented                                               | (y/n)         | Y         |
|                                                                            |               |           |

##### Legal/Regulatory

| In Place<br>Prior to<br>Phase II                   | Reviewing<br>Existing<br>Authorities | Drafted | Review | Draft<br>in | Adopted |
|----------------------------------------------------|--------------------------------------|---------|--------|-------------|---------|
| Regulatory Mechanism Status (indicate with "X")    |                                      |         |        |             |         |
| ▪ Illicit Discharge Detection & Elimination        |                                      |         |        |             | X       |
| ▪ Erosion & Sediment Control                       |                                      |         |        |             | X       |
| ▪ Post-Development Stormwater Management           |                                      |         |        |             | X       |
| Accompanying Regulation Status (indicate with "X") |                                      |         |        |             |         |
| ▪ Illicit Discharge Detection & Elimination        |                                      |         |        |             | X       |
| ▪ Erosion & Sediment Control                       |                                      |         |        |             | X       |
| ▪ Post-Development Stormwater Management           |                                      |         |        |             | X       |

#### Mapping and Illicit Discharges

|                                                                    | (Preferred Units)      |  | Response |
|--------------------------------------------------------------------|------------------------|--|----------|
|                                                                    | (%)                    |  |          |
| Outfall mapping complete                                           |                        |  | 100%     |
| Estimated or actual number of outfalls                             | (#)                    |  | 326      |
| System-Wide mapping complete (complete storm sewer infrastructure) | (%)                    |  | 95%      |
| Mapping method(s)                                                  |                        |  |          |
| ▪ Paper/Mylar                                                      | (%)                    |  | -        |
| ▪ CADD                                                             | (%)                    |  | -        |
| ▪ GIS                                                              | (%)                    |  | 100%     |
| Outfalls inspected/screened **                                     | (# or %)               |  | 10%      |
| Outfalls inspected/screened (Since beginning of permit coverage)   | (# or %)               |  | 85%      |
| Illicit discharges identified **                                   | (#)                    |  | 2        |
| Illicit discharges identified (Since beginning of permit coverage) | (#)                    |  | 11       |
| Illicit connections removed **                                     | (#); and<br>(est. gpd) |  | 0        |
| Illicit connections removed (Since beginning of permit coverage)   | (#); and<br>(est. gpd) |  | 7        |
| % of population on sewer                                           | (%)                    |  | 80%      |
| % of population on septic systems                                  | (%)                    |  | 20%      |

#### Construction

(Preferred Units) Response

|                                                                                                      |            |      |
|------------------------------------------------------------------------------------------------------|------------|------|
| Number of construction starts (>1-acre) **                                                           | (#)        | 3    |
| Estimated percentage of construction starts adequately regulated for erosion and sediment control ** | (%)        | 100% |
| Site inspections completed **                                                                        | (# or %)   | 8    |
| Tickets/Stop work orders issued **                                                                   | (# or %)   | 0    |
| Fines collected **                                                                                   | (# and \$) | \$0  |
| Complaints/concerns received from public **                                                          | (#)        | 0    |
|                                                                                                      |            |      |
|                                                                                                      |            |      |

**Post-Development Stormwater Management**

|                                                                                                                          |          |     |
|--------------------------------------------------------------------------------------------------------------------------|----------|-----|
| Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control | (%)      | 60% |
| Site inspections (for proper BMP installation & operation) completed **                                                  | (# or %) | 70% |
| BMP maintenance required through covenants, escrow, deed restrictions, etc.                                              | (y/n)    | Y   |
| Low-impact development (LID) practices permitted and encouraged                                                          | (y/n)    | Y   |
|                                                                                                                          |          |     |
|                                                                                                                          |          |     |

**Operations and Maintenance**

|                                                                                              |                |          |
|----------------------------------------------------------------------------------------------|----------------|----------|
| Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **           | (times/yr)     | <1       |
| Average frequency of catch basin cleaning (commercial/arterial or other critical streets) ** | (times/yr)     | <1       |
| Qty of structures cleaned **                                                                 | (#)            | 1,000    |
| Qty. of storm drain cleaned **                                                               | (%, LF or mi.) | 0%       |
| Qty. of screenings/debris removed from storm sewer infrastructure **                         | (lbs. or tons) | n/a      |
| Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **             | (location)     | Landfill |

| Basin Cleaning Costs                              |                         |  |      |
|---------------------------------------------------|-------------------------|--|------|
| • Annual budget/expenditure (labor & equipment)** | (\$)                    |  | n/a  |
| • Hourly or per basin contract rate **            | (\$/hr or \$ per basin) |  | -    |
| • Disposal cost**                                 | (\$)                    |  | 0    |
| Cleaning Equipment                                |                         |  |      |
| • Clam shell truck(s) owned/leased                | (#)                     |  | 1    |
| • Vacuum truck(s) owned/leased                    | (#)                     |  | 1    |
| • Vacuum trucks specified in contracts            | (y/n)                   |  | N    |
| • % Structures cleaned with clam shells **        | (%)                     |  | 100% |
| • % Structures cleaned with vacor **              | (%)                     |  | 0%   |

|                                                                                         | (Preferred Units)  | Response           |
|-----------------------------------------------------------------------------------------|--------------------|--------------------|
| Average frequency of street sweeping (non-commercial/non-arterial streets) **           | (times/yr)         | 1                  |
| Average frequency of street sweeping (commercial/arterial or other critical streets) ** | (times/yr)         | 2                  |
| Qty. of sand/debris collected by sweeping **                                            | (lbs. or tons)     | 202+ tons          |
| Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **                | (location)         | Compost & Landfill |
| Annual Sweeping Costs                                                                   |                    |                    |
| • Annual budget/expenditure (labor & equipment)**                                       | (\$)               | \$35,000           |
| • Hourly or lane mile contract rate **                                                  | (\$/hr. or ln mi.) | -                  |
| • Disposal cost**                                                                       | (\$)               | \$6,107            |
| Sweeping Equipment                                                                      |                    |                    |
| • Rotary brush street sweepers owned/leased                                             | (#)                | 2                  |
| • Vacuum street sweepers owned/leased                                                   | (#)                | 0                  |
| • Vacuum street sweepers specified in contracts                                         | (y/n)              | 0                  |
| • % 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:<br>("N/A" = never used; "100%" = elimination) |             |
| ▪ Fertilizers                                                                                                                  | (lbs. or %) |
| ▪ Herbicides                                                                                                                   | (lbs. or %) |
| ▪ Pesticides                                                                                                                   | (lbs. or %) |
| Integrated Pest Management (IPM) Practices Implemented                                                                         | (y/n)       |
|                                                                                                                                | Y           |

|                                                                                                                                                                                              | (Preferred Units)                                                                         | Response                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------|
| Average Ratio of Anti-/De-Icing products used **                                                                                                                                             | % NaCl<br>% CaCl <sub>2</sub><br>% MgCl <sub>2</sub><br>% CMA<br>% Kac<br>% KCl<br>% Sand | Y-(% not known)<br><br>Y-(% not known) |
| (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)                                                                                             |                                                                                           |                                        |
| --Granular Sodium Chloride (NaCl) treated with liquid magnesium chloride/organic based performance enhancer (Caliber-M2000—24% MgCl <sub>2</sub> , 12% proprietary ingredients, 0.5% IMP-AP) |                                                                                           |                                        |
| Pre-wetting techniques utilized **                                                                                                                                                           | (y/n or %)                                                                                | Y                                      |
| Manual control spreaders used **                                                                                                                                                             | (y/n or %)                                                                                | Y                                      |
| Zero-velocity spreaders used **                                                                                                                                                              | (y/n or %)                                                                                | N                                      |
| Estimated net reduction or increase in typical year salt/chemical application rate                                                                                                           | (±lbs/ln mi. or %)                                                                        | 0                                      |
| Estimated net reduction or increase in typical year sand application rate **                                                                                                                 | (±lbs/ln mi. or %)                                                                        | -100% (reduction)                      |
| % of salt/chemical pile(s) covered in storage shed(s)                                                                                                                                        | (%)                                                                                       | 100%                                   |
| Storage shed(s) in design or under construction                                                                                                                                              | (y/n or #)                                                                                | N                                      |
| 100% of salt/chemical pile(s) covered in storage shed(s) by May 2008                                                                                                                         | (y/n)                                                                                     | Y                                      |
|                                                                                                                                                                                              |                                                                                           |                                        |
|                                                                                                                                                                                              |                                                                                           |                                        |

**Water Supply Protection**

|                                                                                                                                   |          |   |
|-----------------------------------------------------------------------------------------------------------------------------------|----------|---|
| Storm water outfalls to public water supplies eliminated or relocated                                                             | # or y/n | N |
| Installed or planned treatment BMPs for public drinking water supplies and their protection areas                                 | # or y/n | 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 | 0 |

**Connecticut River Stormwater Committee**  
**Annual Report**  
**January 1, 2014 to March 31, 2015**

**The Connecticut River Stormwater Committee**

The Connecticut River Stormwater Committee is an intergovernmental compact of 13 municipalities organized to collaborate on education and outreach about stormwater impacts on the Connecticut River. Facilitated and staffed by the Pioneer Valley Planning Commission, committee work helps NPDES MS4 regulated member communities meet stormwater education and outreach permit requirements. Based on the Memorandum of Agreement under which the committee was formed in 2008, work also helps member communities with related bylaws/ordinances and other compliance measures. Member communities are shown in Table 1 below. The City of Northampton joined the committee in this past year.

**Table 1: Connecticut River Stormwater Committee Member Communities**

| <b>Member Community</b> | <b>Committee Representative and Department</b> |
|-------------------------|------------------------------------------------|
| Agawam                  | Tracey DeMaio, Department of Public Works      |
| Chicopee                | Joe Kietner, Department of Public Works        |
| Easthampton             | Jim Gracia, Department of Public Works         |
| Granby                  | Dave Derosiers, Highway Department             |
| Holyoke                 | Matthew Sokop, Department of Public Works      |
| Longmeadow              | Yem Lip, Department of Public Works            |
| Ludlow                  | JT Gaucher, Department of Public Works         |
| Northampton             | Doug McDonald, Department of Public Works      |
| Southwick               | Richard Grannells, Department of Public Works  |
| South Hadley            | Jim Reidy, Department of Public Works          |
| Springfield             | Kevin Chaffee, Conservation Commission         |
| West Springfield        | Jim Lyons, Department of Public Works          |
| Westfield               | Casey Berube, Department of Public Works       |

**Education and Outreach over the Past Year**

To challenge individual behaviors that negatively impact the health of the Connecticut River, the Stormwater Committee continued to use a variety of strategies over the past year. The bulk of work has been focused on promoting green infrastructure stormwater management practices, though the Committee continued its collaboration with the Greenscapes program and began to respond to forthcoming requirements with some initial research toward developing outreach on bacterial contamination in stormwater.

The following is a summary of the work of the Connecticut River Stormwater Committee during the 2014 reporting year. This includes part of the 2014 calendar year as well because the Committee is transitioning from a calendar year reporting timeline to make these reports better line up with permit timelines:

### **Continued collaboration with the Greenscapes Program [www.Greenscapes.org](http://www.Greenscapes.org)**

The committee continues to participate in Greenscapes coalition to advance the Greenscapes program. The program's website and publications promote understanding about the connection between better lawn and garden care practices and reduced impacts on water resources and human and environmental health. On the coalition's website, there are clear instruction and links to resources about how to make these important changes in practice. Links to this website are on all member community stormwater web pages.

### **Initiated research to develop effective messaging on bacterial contamination**

The committee defined goals and objectives relative to the forthcoming stormwater permit and other regulatory requirements and local needs. Beginning with the goals and objectives relative to bacteria, the committee began its effort to develop effective messaging with the creation of a survey that will be distributed in spring-summer 2015 to pet owners. The survey will collect information about this target audience and help to define messaging going forward that is aimed at helping to reduce bacterial contamination in the Connecticut River. At the same time, the survey itself should elevate awareness about practices and the possibility of making changes to practices that promote improved water quality.

### **Promoted "Soak up the Rain" stormwater education campaign**

The Connecticut River Stormwater Committee continued to devote time to developing and promoting the "Pioneer Valley Soak up the Rain" education campaign (a local version of the EPA's New England campaign). The campaign — a call to action for property owners to reduce stormwater runoff through strategies that soak up the rain — involved several outreach efforts for the Connecticut River this year.

- ***Demonstration workshops and event tabling for homeowners and businesses***  
September 20, Central High School Springfield - Led by staff from PVPC and the Regenerative Design Group, this workshop described the nature of stormwater impacts on the Connecticut River and covered a range of techniques appropriate for residential and commercial sites, including rain barrels and cisterns, porous pavers, rain gutter downspout diversion, and rain gardens. In a post-workshop evaluation, the event's 18 participants gave the event high marks. Promoting the workshop entailed reaching out to: Springfield's neighborhood associations, Western Massachusetts Master Gardener Association, Ecological Landscape Alliance, local public libraries, and notice placements with area newspapers and social media resources. This was the second of two half-day workshops supported with \$7,000 in funding from EPA. (*See program flyer next page.*)



## Soak up the Rain: Benefits for Your Home and Business

*Save Money • Beautify Your Landscape •  
Prevent Pollution • Reduce Flooding*

### Demonstration Workshop for Homeowners and Businesses

**Saturday, September 20, 8:30 am – 1 pm**

Central High School, 1840 Roosevelt Ave., Springfield, MA

Come learn how to better manage rainfall at your home or business at a demonstration workshop. Presenters include Landscape Architect Thomas Benjamin, Ecological Designer Keith Zaltzberg, and Stormwater Specialist Patty Gambarini. The workshop will cover a range of techniques appropriate for residential and commercial sites, including:

rain gardens • cisterns • rain barrels • drywells •  
porous pavers • rain gutter downspout diversion

The workshop is part of “Soak up the Rain Pioneer Valley,” a campaign to encourage and showcase the use of green infrastructure stormwater management practices around the region. It is brought to you by the Pioneer Valley Planning Commission and Connecticut River Stormwater Committee under contract with U.S. Environmental Protection Agency, Region 1.

Registration is required by September 16<sup>th</sup> to Patty Gambarini at [pgambarini@pvpc.org](mailto:pgambarini@pvpc.org) or (413) 781-6045. Visit [soakuptherain.pvpc.org](http://soakuptherain.pvpc.org) to see the workshop agenda and learn more about green infrastructure stormwater management practices in the Pioneer Valley.



Cistern - Center Pepin Elementary  
School, Easthampton



Rain garden - Northampton VA

(photo courtesy Thomas Benjamin)

**Flyer that was widely distributed for Soak up the Rain program in September 2014.**

November 8, Holyoke Public Library, Holyoke – PVPC joined the Enchanted Circle Theater and other organizations for a stormwater education and advocacy event that included the unveiling of stormdrain art created by students. PVPC's table at the event highlighted ways to Soak up the Rain on residential properties with an interactive model showing the differences between impermeable and permeable surfaces in a typical neighborhood. The model will be further developed for future events.

March 21, Western Massachusetts Master Gardener Symposium, Frontier Regional High School, Deerfield – Invited to this event to talk about Soak up the Rain strategies for around the home and garden, PVPC gave a slide-show presentation that covered drainage analysis of a property, soil evaluation techniques, and several strategies to improve stormwater management, including rain gutter downspout diversions, trees, rain barrels and cisterns, rain gardens, and porous paving. While the event was held in Deerfield, a show of hands in the workshop revealed that all but one participant was from Hampshire or Hampden County, where the stormwater committee is active. The presentation is posted on the Pioneer Valley Soak up the Rain website and will be adapted for use at other events in stormwater committee communities.

- ***Design of Soak up the Rain porous paving and rain garden signs***

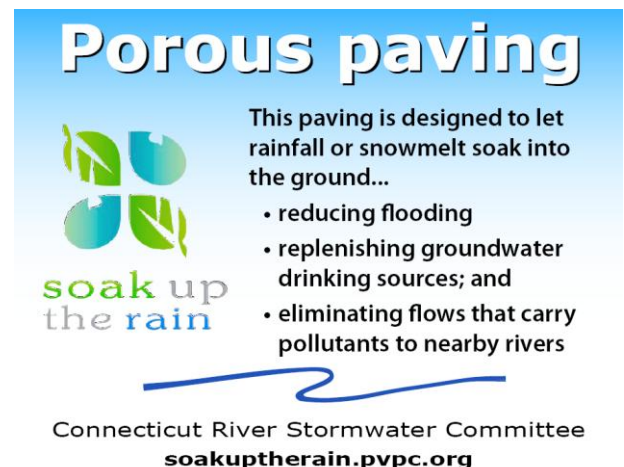
PVPC completed its work with EPA in September 2014 to develop sign templates for use at rain garden and porous paving stormwater locations. This work was supported with \$3,000 in funding from EPA. The designs for the signs have since been revised based on feedback from workshop participants and stormwater committee members to be more legible and more instructive about how a system functions. Each of the signs have two different sides to them, giving property owners the option to display a message that connotes pride in having such a facility or a more involved message that describes what the system does. Signs are currently being fabricated for use at residential, business, and municipal sites throughout the region. *See sign design on next page.*

- ***Pioneer Valley Soak up the Rain website***      ***[www.pvpc.org/soakuptherain/](http://www.pvpc.org/soakuptherain/)***

The Pioneer Valley Soak up the Rain website promotes a range of practices, including tree plantings, rain gardens, permeable pavements, dry wells, and green roofs. An occasional blog that includes photos and video provides examples from the region. Property owners throughout the Pioneer Valley are also invited to submit projects that they know of to feature on the website. A "Cool resources" heading provides connection to the latest information and a "resources" menu item links to a library of informational resources. Links to this website are on all member community stormwater web pages.



*Rain garden signs – both sides*



*Porous paving signs – both sides*

## Rain gardens design and installation project

PVPC is working with Springfield officials and a hired consultant, the Regenerative Design Group, to design and build up to 10 rain gardens in the City. To date, 3 sites have been selected where the equivalent of 5 gardens will be constructed. These sites include the Springfield Museums, Gardening the Community's new site on Walnut and James Street, and a private residence in the northern part of the City. A hands-on training session has been scheduled to teach people how to construct rain gardens, using the Springfield Museums site. From these trainees a corps of volunteers will be deployed to work with the consultant and PVPC in building the other gardens in the City. This work is made possible through a settlement agreement reached by Clean Water Action. It is hoped that based on the materials, contracts,

and know-how developed through this work in Springfield, that the project can be easily duplicated in other stormwater committee member communities for the future.

### **Green infrastructure workshop and vendor's fair**

A survey from last year's stormwater workshop events identified two of the more significant barriers to greater use of green infrastructure stormwater management as being the need for better understanding of:

1. Proper design, construction, and oversight of green infrastructure stormwater management facilities; and
2. Where to acquire materials needed for building green infrastructure facilities

As such, PVPC partnered with EPA region 1, EPA Office of Research and Development (ORD), and the University of Massachusetts Water Resources Research Center to co-hold a workshop entitled "Nuts & Bolts of Green Infrastructure Design and Construction for Developers, Designers, Contractors, and Municipal Officials." Held on March 17, 2014, at Holyoke Community College's Kittredge Center, the day-long event drew 47 participants, including 15 engineers, 10 planners, 6 architects and designers, and 6 regulatory officials. This number does not include the 17 vendors or 10 workshop organizers also in attendance. Morning sessions included:

- Design and construction considerations and process on green infrastructure BMPs, a session led by Engineer Richard Claytor of Horsley Witten Group
- The nitty gritty of design and construction on three green infrastructure projects
  - Streetside Bioretention in a Downtown (*Douglas Clark, P.E., City of Pittsfield and Jon Dietrich, Fuss & O'Neill*)
  - Porous Paving and Bioretention on a University Campus (*Edward Marshall, ASLA, Stephen Stimson Associates* )
  - Gravel Wetlands in a Municipal Park (*Michael F. Clark, Polaris Consultants LLC* )

The afternoon involved a fair with vendors and contractors representing the range of materials and services used for stormwater green infrastructure projects. Participants were divided into groups to "speed date" with the vendors, a technique used to promote learning about the full breadth of New England's network of materials, resources, and contractors involved in green infrastructure.





*Mike Clark from Polaris Consulting talks about the details of design and construction of a gravel wetlands he built at a park in Leominster, Massachusetts.*



*Sounding the drums was the signal for “speed daters” to proceed to the next vendor. This method gave workshop participants the opportunity to spend 5 minutes with each vendor, but also get to every vendor to learn about the full breadth of New England’s network of materials, resources, and contractors involved in green infrastructure*

## **Stormwater financing workshop**

The Pioneer Valley Planning Commission (PVPC) collaborated with EPA-New England staff to develop and present a one-day workshop on funding municipal stormwater management programs. Work in developing and presenting the workshop was supported with \$6,000 in funding from EPA. The workshop, held on September 24, 2014 at Holyoke Community College's Kittredge Center, drew 36 participants, representing 11 municipalities from throughout the region. Participants included 9 "decision makers" (DPW directors, city councilors, selectboard member), 2 private consultants, with the balance representing municipal public works and engineering staff.

The morning program was designed with municipal decision makers in mind and included:

- Annie Kitchell, Senior Planner for the Horsley Witten Group, who described stormwater management requirements and realistic funding options
- Richard Niles of AMEC who described stormwater utilities and provided pointers for moving forward
- Four municipal officials - City of Westfield DPW Superintendent David Billips; Northampton Chair of Board of Public Works Terry Culhane; Portland City Councilor Edward Suslovic; and City of Chicopee DPW Project Supervisor Tom Hamel—who all provided good information about their personal experiences with stormwater funding from their municipalities.

The afternoon program went into more detail with a program to suit interested decision makers, as well as providing more "how to" information for stormwater managers. The program included:

- Carri Hulet, Senior Associate with The Consensus Building Institute, talked about the importance of community engagement and how to design and implement a collaborative process
- Virginia Roach, Vice President of CDM Smith, and Jim Laurila, Northampton City Engineer, drew from Northampton's recent experience in developing a stormwater utility to talk about how to evaluate your community's stormwater management funding needs
- All workshop presenters, plus the addition of City of Westfield Deputy DPW Superintendent Casey Berube, then came together as a panel for a conversation about making the case for stormwater program funding

## **Pioneer Valley Green Infrastructure Plan and Toolkit**

Working with an advisory committee that included members from six stormwater committee municipalities, PVPC finalized the "Pioneer Valley Green Infrastructure Plan: Promoting Clean Water, Greening our Streets and Neighborhoods." The plan is meant to assist communities in the region as they continue the journey toward a more environmentally sustainable stormwater management program. The plan identifies the three existing infrastructures

(stormwater, combined sewers, and roads) where green infrastructure might best be integrated; describes useful criteria for mapping potential green infrastructure facility locations; explores important opportunities and challenges; and proposes workable strategies for local and regional actions that will help to address polluted stormwater flows and meet forthcoming stormwater permit requirements. An executive summary of the plan has been widely distributed throughout the region. A companion toolkit for the plan includes fact sheets on 16 pertinent topics, including best management practices, model regulations and policies, and financing. The plan and toolkit were part of a larger regional sustainability initiative funded through a Sustainable Communities Initiative grant from the U.S. Department of Housing and Urban Development.

## **Grants**

### **Community Innovation Challenge Grant**

PVPC prepared and submitted a grant for the Massachusetts Community Innovation Grant program, requesting \$193,000 to develop three stormwater permit compliance tools and to help several communities explore establishment of local stormwater utilities. Chief elected officials from all 13 Connecticut River Stormwater Committee member communities signed on to the application. Unfortunately, the grant program was eliminated by the governor as part of mid-year cuts to close a \$329 million state budget deficit.

### **State and Private Forestry FY15 Northeastern Area Landscape Scale Restoration Program**

PVPC has received a \$239,000 grant award to coordinate a project to implement tree planting as part of a green infrastructure stormwater management approach. Funded under the State and Private Forestry FY15 Northeastern Area Landscape Scale Restoration Program, the project involves the municipalities of Chicopee, Holyoke, and Springfield, the Executive Office of Energy and Environmental Affairs, and a number of local grassroots organizations. The project includes: outreach and education to better inform local residents about the stormwater benefits of trees in streetscapes; development of green street design templates for use by public works departments in street construction projects; engineering design for tree box filter installations at nine locations; installation of 1,220 trees in street reconstruction projects; and development of a stormwater street tree model ordinance.