

Municipality/Organization: City of Westfield

EPA NPDES Permit Number: MAR041236/MaDEP

MassDEP Transmittal Number: W-040836

Annual Report Number & Reporting Period: **Year 11**
April 1, 2013 – March 31, 2014

NPDES PII Small MS4 General Permit Annual Report (Due: May 1, 2014)

Part I. General Information

Contact Person: Casey Berube Title: Deputy Superintendent

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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: Casey Berube
Title: Deputy Superintendent of Public Works
Date: 4/30/2014

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 3-3: Newly found outfalls require dry weather screening.

BMP 3-4: Illicit connections identification and removal is still underway.

BMP 5-3: Inventory of all private and public structural BMPs is still ongoing. BMP locations need to be added to the City's GIS website.

BMP 6-4: Silt fence and hay bales were not installed around the City snow disposal areas this reporting period.

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 11 (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	Educational pamphlets revised and updated. Approximately 12,750 pamphlets distributed this reporting period.	Next pamphlet distribution planned for 2015-2016. Evaluate pamphlet distribution/posting at high density living areas (e.g. apartment complexes, condominiums, and multifamily houses).
Revised			12,750 pamphlets every two years		
1-2	Distribute pamphlets to industries	Stormwater Coordinator	250 pamphlets distributed biannually to industries	Pamphlets distributed during Jan, Feb, and Mar 2014 this reporting period.	Pamphlet distribution planned for 2015-2016.
1-3	Create and maintain stormwater website	Stormwater Coordinator and IT specialist	Stormwater web page created	Additional stormwater resources and site improvements were made to the Department of Public Works Stormwater Utility web page this reporting period.	Maintenance and improvement of web site to be a continuing effort. Stormwater informational resources translated to Spanish, Russian, and Nepalese, and to be posted targeting non-English speaking residents.
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 local veterinary clinics and the Animal Control shelter.	Continue posting distributing dog waste pamphlets.
1-5	Contact local boy/girl scouts concerning volunteer projects	Stormwater Coordinator	Boy/Girl scout troop contacted	Girl scouts participated in April 20, 2013 Earth Day Clean up event. Boy Scouts of America assisted in tree planting effort.	Continue reaching out to scout groups. Earth Day clean up event scheduled for April 26, 2014.
1-6	Update City Council on progress of Storm Water Management Plan activities	Stormwater Coordinator	Annual update via annual report	MS4 Annual Report submitted to Public Works Commission and City Council.	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	Most major waterways labeled this reporting period.	Continue to identify and label remaining waterways, and 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 11 (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 25 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	Adhere plastic “No Dumping – Drains to River” labels to catch basins.	DPW	25 catch basins stenciled per year	Colored plastic labels depicting a fish image and “No Dumping” message outperform stenciling efforts. The Westfield River Watershed Association (WRWA) organized volunteers to label approximately 1,000 storm drains in this reporting period.	Continued effort with more labeling. Target downtown area roadways undergoing reconstruction.
2-4	Sponsor community participation event	DPW, Health, Police & School Departments	At least one event held annually - # of residents participating	Earth Day Clean up held. DPW, Boy Scouts of America, and Westfield Vocational Technical School tree plantings. WRWA river clean ups completed. Health Department hazardous waste collection day held. Rain barrels offered to residents at discounted prices.	Continued effort. Planned activities for 2014 include Earth Day and WRWA River cleanup. Next hazardous waste collection event scheduled for 2015.
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 11 (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	Remaining stream miles were walked this reporting period. Many updates and revisions made to the City's stormwater system map this year through field inspections.	Continue to locate unknown outfalls and update City map.
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.	Newly found outfalls require screening.
3-4	Develop and implement a plan to identify & remove non-stormwater discharges	DPW and Engineering	Number of illicit connections found and removed	No new illicit connections found this reporting period.	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					

3a. Additions

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4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11 (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
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 25 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. Meetings are held weekly or as needed. Approximately 150 plans and building permits reviewed.	Continuing effort.
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. 19 meetings held.	Continuing effort.
4-5	Inspect Erosion and Sediment Controls	DPW, Engineering, Con. Comm, Building, and Health	Number of Inspections conducted	City personnel conducted approximately 400 construction site inspections this reporting period.	Continuing effort.

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 11 (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. City owned Stormceptors added to GIS. 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					

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 11 (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.
6-2	Street sweeping	DPW	Percent of streets swept	100% of City streets were swept at least once this report period. Downtown area streets were swept multiple times.	Continue street sweeping program. Upon retirement of existing sweeper, City to evaluate replacement with a vacuum-assisted sweeper.
6-3	Roadway deicing	DPW	Alternative deicers evaluated, amount of alternative deicers used	Cryotech NAAC alternative used on airport runways for de-icing. Alternative de-icers were not used on City streets this year due to budgetary constraints.	Continue to use alternative deicers when possible.
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 areas.	Install silt fence or hay bales around snow pile each year.
6-5	Minimize impacts from municipal vehicle washing	Individual department heads	Need of additional controls evaluated, installed (if needed)	Use of phosphate-free biodegradable soap for DPW vehicle washings. Installation of wash rack connected to city sewer delayed due to the presence of environmental contamination (RTN 1-767).	Continued use of phosphate-free, biodegradable soap. Proposed wash rack connected to the City sewer at the Westfield Water Resources Department (WWRD), on hold per order of Licensed Site Professional James Barrett (LSP #6054).
6-6	Minimize impacts from municipal vehicle maintenance	Individual department heads	Hazardous material inventory updated	DPW Hazardous material inventory is in place and up to date.	Continue to update hazardous material inventory. Conduct hazardous materials/waste training for employees.
6-7	Catch basin cleaning and storm drain maintenance	DPW	Number of CBs cleaned, condition of system recorded	Approximately 650 catch basins inspected/cleaned, and 765 tons of sediment removed.	Continued effort. Catch basin inspection reports linked to GIS.

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. City parks – Truegreen fertilizer applied four times over 87.7 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	130 trees planted this reporting period, with assistance from the Boy Scouts of America and Westfield Vocational Technical School.	Continued tree planting.
6-10	Illegal dumping control	Health	Number of signs posted, number of sites cleaned up	Three new dump sites were identified this reporting period. Access to the sites has been restricted, and two of the three sites have been cleaned up. The remaining site not yet cleaned, and is located on private property.	Continue effort to maintain records of all complaints, responses and clean-up efforts.
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 7 times last year.	Continue hazmat trainings and holding LEPC meetings.

6a. Additions

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 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities
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 is in the process of drafting a new general permit for MS4 to take its place. 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 continued a public education program in which educational materials are distributed to the public with the City's combined utility bills. Pamphlet distribution is done every other year. The direct mailing of educational materials to residents, businesses, and industrial facilities was completed in January, February, and March 2014 with 100% of intended recipients received mailings. The number of targeted mailings as a measurable goal was reduced this reporting period from 19,000 to 12,750, as it is the owner of a property that receives a combined utility bill, and many of the City's residents rent, and therefore do not receive a combined utility bill. At this point, mailing pamphlets directly to property owners with the combined utility bill appears to be the most cost effective approach at distribution. Greater efforts need to be made at posting and distribution of pamphlets in higher density living areas. Educational pamphlets are displayed and available at City Hall and at several City schools. Stormwater information for public review is maintained on the City's website.

The City's stormwater infrastructure was presented at the 2013 Westfield River Watershed Symposium at Westfield State University.

Dog brochures detailing pet waste concerns are made available to dog owners upon renewal of their dog licenses. Dog brochures and have also been distributed to local veterinary clinics and the City's animal shelter.

Informational door knob hangers have been created for distribution in neighborhoods where catch basin cleaning is performed.

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 2013 Annual Report is included as an attachment to this report.

Waterway labeling of brooks and streams where they cross under roadways was continued this reporting period in effort to increase environmental awareness. Most of the major waterways have been labeled, and efforts will be made to label remaining waterways and maintain existing signage.

Assessment. The City is still looking to incorporate stormwater management as part of school curriculum. However, adding to the existing required curriculum and negotiating with teaching union can present a challenge. Preliminary discussions have been made with several instructors at Westfield Vocational Technical School. Based on the performance of all other 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 effort was held on April 20, 2013, in which approximately 100 individuals removed 10 truckloads of trash and debris from about 15 different locations throughout the City. Additionally, the City also conducted bulk trash pickup for City residents from April 1 through November 30th 2013.

The City's Health Department held a hazardous waste collection day on September 21, 2013. Though the hazardous waste collection event, the City collected eight 55-gallon drums of aerosols, five drums of flammable liquid, four drums of acid, eight drums of pesticide, three drums of oxidizers, two drums of asbestos, one drum of ballasts and capacitors, one 5-gallon pail of mercury, and eight cubic yards of paint cans.

The City Public Works Department, Westfield Vocational Technical School, and local Boy Scouts planted approximately 130 trees this reporting period.

The Westfield River Watershed Association (WRWA) sponsored Westfield River clean-up days on April 20 and October 5, 2013, where approximately 40 volunteers participated and filled over 100 trash bags and removed many other large items (tires, mattresses, furniture, appliances etc.). The Westfield River Watershed Association also sponsored several storm drain labeling projects this report period, with volunteers labeling approximately 1,000 storm drains in various neighborhoods. Due to its better performance, a colorful adhesive tab depicting a fish icon and the message reading "No Dumping – Drains to River" has been used in place of stenciling on catch basins.

The City partnered with the Great American Rain Barrel Company of Hyde Park, Massachusetts, to offer rain barrels to residents at a discounted rate. Approximately 50 residents purchased rain barrels through this program.

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.

Local Boy Scout Troops cleaned trash and debris at the Westfield Fairground, YMCA Camp Shepard, and Fort Meadow Schools this reporting period. The City will continue to reach out to local Scout Troops.

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

Control Measure 3 – Illicit Discharge and Detection

This measure requires the City to develop a Stormwater System Map 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 was completed in 2009.

An engineering assessment of the Outfall 13 piping still needs to be conducted.

GPS mapping of the remaining stream miles was completed this reporting period. In all, approximately 350 stream miles have been walked, with 34 new outfalls found this reporting period. Newly found outfalls need to be screened. The upstream piping system for new outfalls needs to be investigated and added to the City's storm sewer map.

Assessment: 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.

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. Third party erosion and sediment control inspections, with costs borne by development contractors, has proved to be difficult to implement. The City has limited resources to conduct all of the required inspections of erosion and sediment controls; however, 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. Sites that disturb less than one acre of land have been difficult to track. Continued interdepartmental coordination and communication is needed to assure that construction site inspections are completed as required by ordinance.

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. Resources also needed to conduct inspections of private BMPs and review maintenance records.

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). 100% of City streets were swept this year, and downtown area street were swept several additional times. Alternative de-icers were not used on City streets during due to budgetary constraints. Silt fence and hay bale installation around the snow disposal sites were not completed this report period. Installation of a vehicle wash rack connected to the sewer system was not completed this reporting period due to the presence of environmental contamination at the desired location. A new catch basin cleaning vacuum truck was put into use this reporting period. Approximately 650 catch basins were inspected and cleaned. Illegal dump sites are cleaned as they are discovered and "No Dumping" signs posted as appropriate. Three dump sites were found this year, and access has been restricted at each location to prevent additional dumping. Two dump sites have been cleaned, and the third is located on private property. Annual hazardous material training was held by Westfield Fire Department, and the Local Emergency Planning Committee met seven times this reporting period.

Assessment: Efforts under this control measure will be ongoing and need periodic reviews to assure that all BMP's are being implemented to the most practicable extent.

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 a new permit is issued and new permit conditions established. Planned activities for the coming year include:

1. Increase awareness of proper disposal of dog waste.
2. Improve the City website containing stormwater information.
3. Deliver informational door know hangers during catch basin cleaning events.
4. Continue Stormwater Advisory Committee meetings.
5. Continue membership in the Connecticut Valley Regional Stormwater Committee.
6. Label catch basins on newly paved streets.
7. Continue to target possible illicit connections on Westfield River, Little River, Powdermill Brook, Jack's Brook, and Moose Meadow Brook.
8. Continue building an inventory of all public and private stormwater structural BMPs. The City's GIS system will be used in this process.
9. Continue inspections of public and private structural BMPs.
10. Install silt fencing and/or hay bales around the City' snow removal sites.
11. Continue annual maintenance of city structural BMPs.

12. Continue city employee good housekeeping and stormwater management training.

13. Continue construction site inspections and reporting.

Conclusion:

At the completion of year 11 of the City’s Stormwater Management EPA NPDES MS-4 Permit, the City of Westfield is in compliance with the conditions of this permit with the following exceptions:

- BMP 3-3: Newly found outfalls require dry weather screening.
- BMP 3-4: Illicit connections identification and removal is still underway.
- BMP 5-3: Inventory of all private and public structural BMPs is still ongoing. BMP locations need to be added to the City’s GIS website.
- BMP 6-4: Silt fence and hay bales were not installed around the City snow disposal areas this reporting period.

The BMPs selected for the City’s stormwater management program have been appropriate and no 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

		Response
Stormwater management position created/staffed	(y/n)	
Annual program budget/expenditures **	(Preferred \$) Units	
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 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

		Response
Outfall mapping complete	(%)	
Estimated or actual number of outfalls	(Preferred Units) (#)	
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

		Response
Number of construction starts (>1-acre) **	(#)	
Estimated percentage of construction starts adequately regulated for erosion and sediment control (Preferred Units)	(%)	
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 vector **	(%)	

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) (Preferred Units)	
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)	

Response

Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	(Preferred Units) % 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

2013 Annual Report

January 1 to December 31, 2013

The Connecticut River Stormwater Committee continued to use the NPDES MS4 draft permit as guidance in its work for 2013. Since it is clear that there will be a strong focus on green infrastructure stormwater management systems in the permit, outreach focused on providing information and education about these types of systems.

The following is a summary of the work of the Connecticut River Stormwater Committee during the 2013 calendar year:

Member Community	Committee Representative and Department
Agawam	Tracey DeMaio, Department of Public Works
Chicopee	Joe Kietner, Waste Water Treatment Division
Easthampton	Jim Gracia, DPW
Granby	Dave Derosiers, Highway Department
Holyoke	Matt Sokop, Department of Public Works
Longmeadow	Yem Lip, Department of Public Works
Ludlow	Jim Goodreau, Department of Public Works
Southwick	Richard Grannells, Department of Public Works
South Hadley	Dan Murphy, Department of Public Works
Springfield	Kevin Chaffee, Conservation Commission
West Springfield	Jim Lyons, Department of Public Works
Westfield	Casey Berube, Water Resources Department

Green Infrastructure Workshop and Pre-Workshop Survey

PVPC in partnership with EPA region 1 and the EPA Office of Research and Development (ORD) co-held a workshop entitled "Green Infrastructure for Developers, Designers, contractors, and Municipal Officials" on June 13, 2013. There were 58 attendees plus 19 EPA and PVPC staff in attendance. The full day workshop took several months of detailed planning with EPA and EPA's contractor Horsley Witten Group. The workshop was designed to provide information on design, construction, and maintenance for local and regional projects through a peer to peer format. Workshop presentations included:

- Introduction to GI and LID
- Alternative Models for GI/LID Site Design and Project Benefits: Panel Discussion
- Costs and Benefits of GI/LID
- Incorporation of GI/LID in Retrofits and Redevelopment Projects

- Importance of Construction Administration
- Resources and Tools to Get the Job Done

Of particular interest to EPA and PVPC were understanding barriers to green infrastructure implementation. Thus, ORD developed a very detailed pre-workshop survey that was sent to all registered attendees. A total of 44 attendees completed the survey and results will be used to inform future outreach and training. See attached pre workshop survey results as well as workshop flier and agenda.

Soak up the Rain Stormwater Education Campaign

Much of the work for the Connecticut River Stormwater Committee this year was devoted to working with EPA’s new “Soak up the Rain” education campaign to adapt it for the Pioneer Valley. The campaign — a call to action for property owners to reduce stormwater runoff through strategies that soak up the rain — involved several major outreach efforts for the Connecticut River.

- ***Pioneer Valley Soak up the Rain Logo***

PVPC worked with the standard EPA Soak up the Rain logo to modify and adapt it for the Pioneer Valley. The logo is being used in all materials associated with stormwater education events and materials going forward. Colors of the logo are integrated with print and other elements for other products.



- ***Pioneer Valley Soak up the Rain Website*** www.pvpc.org/soakuptherain/

Developed over the course of several months, the Pioneer Valley Soak up the Rain website promotes a range of practices, including rain gardens, permeable pavements, dry wells, and green roofs through examples from the region, a semi weekly blog, and a library of and links to other informational resources. For the website, PVPC had an intern collect and develop narrative, images, and video on 15 local stormwater projects that are scheduled to be introduced as part of the semi weekly blog and then cataloged on the website within a local stormwater gallery feature. Property owners throughout the Pioneer Valley are invited to submit projects that they know of to feature on the website. As this website becomes further established, PVPC plans to phase out the Connecticut River Think Blue website.

- ***Demonstration Workshops for Homeowners and Businesses - EPA Matching Funds \$7,000***

The first of two half-day workshops for homeowners and businesses was held in October in Northampton and attracted 29 participants. Led by staff from PVPC and the University of Connecticut NEMO program, the workshop covered a range of techniques appropriate for residential and commercial sites, including rain barrels and cisterns, porous pavers, rain gutter downspout diversion, rain gardens, and green roofs. As part of the workshop, participants had an opportunity to try out the new NEMO rain garden app and understand exactly how to conduct a soil perc test and cut a downspout to accommodate a rain barrel. In a post workshop evaluation, participants gave the entire event high marks. The evaluation results will be used to slightly revise a very similar workshop that will be held in Holyoke in June of 2014. In promoting the workshop, the Springfield Republican newspaper provided very high profile coverage on the front of their Home & Garden Section. See attached: flyer for workshop, agenda, Republican article, and evaluation results.

- ***Design of templates for interpretive signs at green infrastructure stormwater management facility - EPA Matching Funds \$3,000***

PVPC began working to develop a series of interpretive sign templates that will be offered to property owners for use where they would like to celebrate and highlight their best stormwater management practices, particularly rain gardens, porous paving, and green roofs. For rain gardens and porous paving, sign templates will include one version (varying in size and content) for residential use and another for commercial, municipal, or institutional use. The green roof sign will be designed in only one version as need for such a sign at the residential scale is negligible. The intent is that signs will help to not only inform people about the good practices that are around them, but also inspire additional good practices by example.

Additional Stormwater Outreach and Education Events

In 2013, the following outreach events were held:

- Saturday, April 27, 2013, Agawam Little League Jamboree and Earth Day celebration - Think Blue display booth
- Tuesday, June 11, 2013, Citizens Restoring Congamond Lakes meeting – Presentation on green infrastructure stormwater management practices for homeowners, as well as brief summary of organic lawn care.

Springfield Rain Gardens Project Planning

Matching Funds \$49,000 CWA SEP

The Pioneer Valley Regional Ventures Center (PVRVC) received mitigation funds in the amount of \$49,000 as the result of Clean Water Action's Notice of Complaint against Don Casters Inc. for use to support rain garden workshops and training and construction within the City of Springfield. PVPC initiated this project in December with a meeting of Springfield municipal officials. Work will continue into the coming year and PVPC is hoping to extend the training program into other communities in the region.

US Forest Service Urban and Community Forestry Grant Application

In partnership with the Franklin Regional Council of Governments and Massachusetts Workforce Alliance, PVPC submitted a \$187,000 grant application to the U.S. Forest Service to: work with a steering committee of stakeholders to identify market drivers for Green Infrastructure, analyze existing successful initiatives, and make recommendations for expanding and growing the green infrastructure cluster. The intended result was to be: 1) a detailed report that presents data, analyzes job opportunities and career paths, and makes recommendations to implement training and job development initiatives, and 2) a brochure in hard copy and .pdf form that summarizes key findings and recommendations and provides resources. The grant was not funded.

Appendixes

Green Infrastructure Workshop – June 13, 2013

Pre workshop survey results

Workshop flyer and agenda

Soak up the Rain Workshop for Homeowners and Businesses – October 26, 2013

Workshop flyer

Workshop agenda

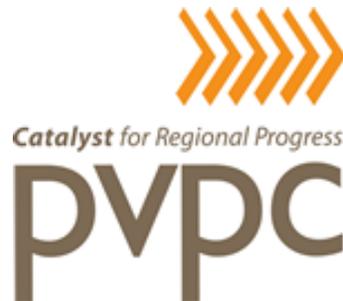
Springfield Republican newspaper article

Workshop evaluation results

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The Voice of Pioneer Valley

Summary of Results from the Pre-Workshop Exercise & Next Steps



Green Infrastructure/Low Impact Development Workshop

June 13, 2013

Pioneer Valley Planning Commission

US Environmental Protection Agency Region 1

US Environmental Protection Agency, Office of Research & Development

PVPC Responding to Participants

What We Heard & Next Steps

Thank you to everyone who took the time to complete the exercise for the 6/13 Pioneer Valley GI/LID workshop. Your input helps us plan for the future.

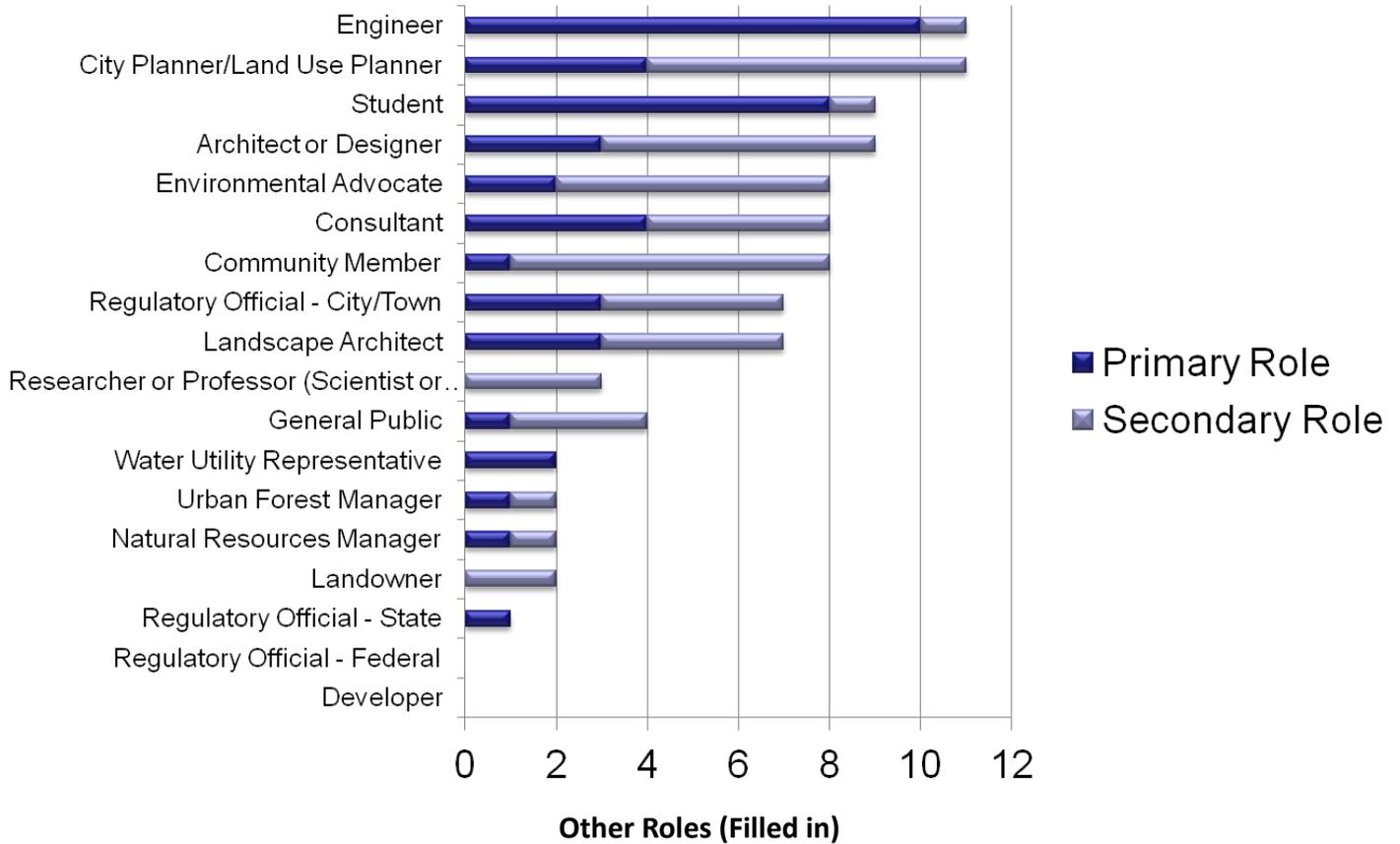
Topics of Interest to Participants

- CSO Mitigation
- Meeting MS4/NPDES permit requirements
- Cost
- Operations & Maintenance
- Removing or navigating state/federal regulations & problematic zoning or local code issues that can be an impediment to GI/LID implementation
- Proof that a given BMP works; avoiding costly mistakes
- Resource area/library of local projects
- Options for residential BMPs

Next Steps

- ⇒ Continue to seek funding sources for CSO mitigation in the region. Funding will support design and construction of GI/LID projects in the three CSO communities: Chicopee, Holyoke, and Springfield.
- ⇒ Like many communities, PVPC is in a holding pattern in anticipation of the new MS4 regulations.
- ⇒ PVPC aims to improve practitioners understanding of ways that GI/LID can save costs in both capital investment and O&M.
- ⇒ More targeted guidance on finding extra-budgetary funding sources
- ⇒ O&M presentations at the workshop were one example of PVPC's ongoing efforts to supply practitioners with the technical information that they need.
- ⇒ PVPC has produced LID code reviews for communities within Pioneer Valley, and will continue working with the state and assisting Pioneer Valley communities in efforts to improve their local code and navigating state regulations.
- ⇒ Continue to add your projects to the *Soak up the Rain Website* so that others within Pioneer Valley can learn
- ⇒ EPA's Green Infrastructure Tools & Resources Database (GITAR), once it is complete, will also provide a wealth of tools, resources, and case studies, to help you find relevant tools, resources, and case studies.
- ⇒ PVPC is currently devising a strategy for a more formalized central location for local information resources.
- ⇒ For more general resources, GITAR will be available in late 2013/early 2014.
- ⇒ PVPC, with the help of EPA Region 1, is initiating its own Soak Up The Rain campaign.

Roles of Respondents



- ◆ Tree warden, parks, commons, cemeteries, Athletic fields, pools Division Director
- ◆ Ecological Landscape Designer (self-employed, Northampton) and part-time Project Designer (Green Infrastructure Planning) for an engineering firm in Boston (Nitsch Engineering, Inc.)
- ◆ I am a community volunteer for the Northampton Board of Public Works and the city's Storm Water Ad-Hoc Advisory Task Force
- ◆ Grant Writer
- ◆ Head gardener at a 3 acre public garden surrounding Wistariahurst Museum in Holyoke. I am dealing with storm water issues from building roofs and the need to water the gardens and turf and would like to consider a cistern system to keep all of the water that falls on site.

Response Rate: 98%

41 Responses

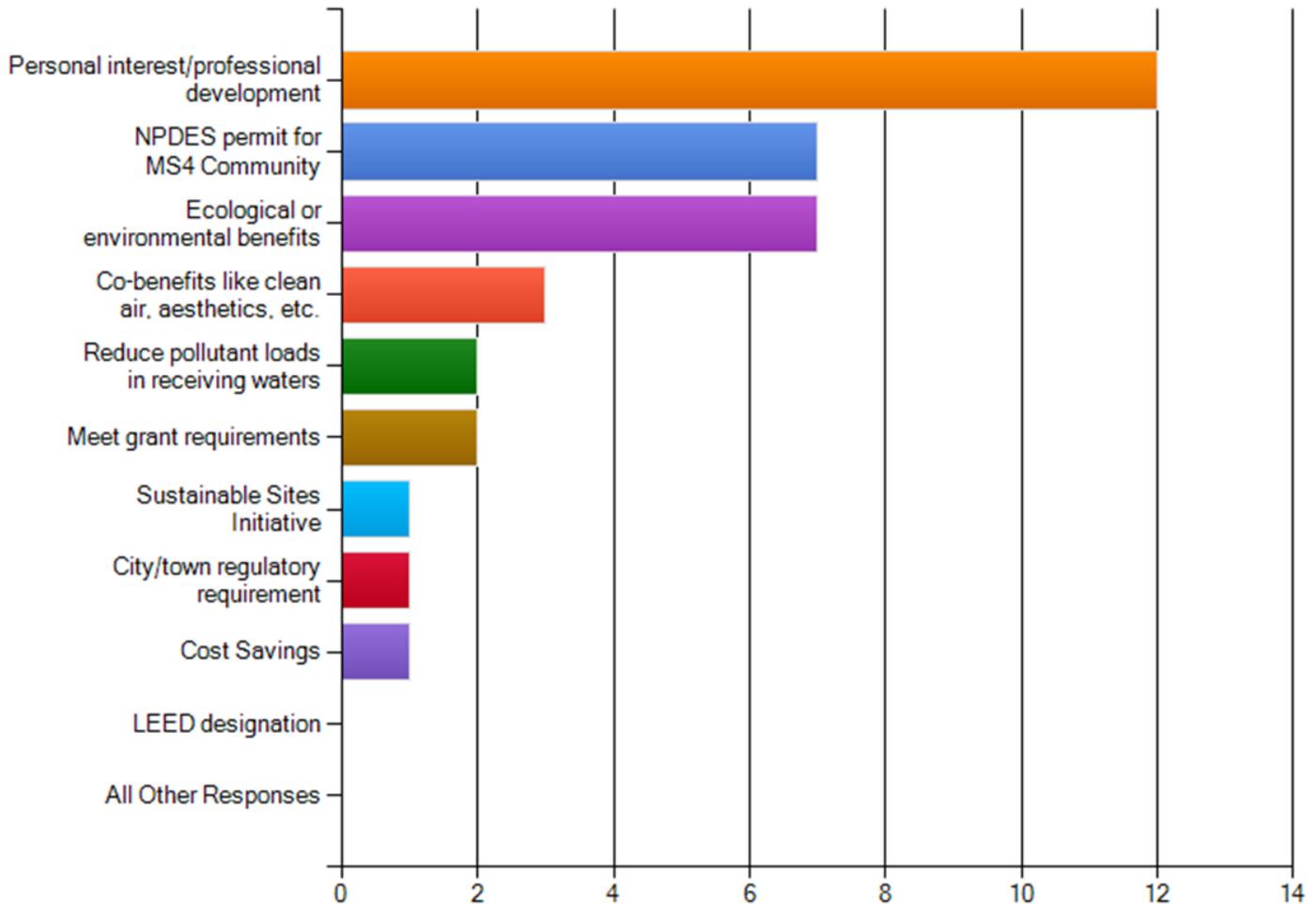
42 Participants (not including speakers)

72 People registered

Note: Some responses may have come from people that registered but did not attend.

Drivers

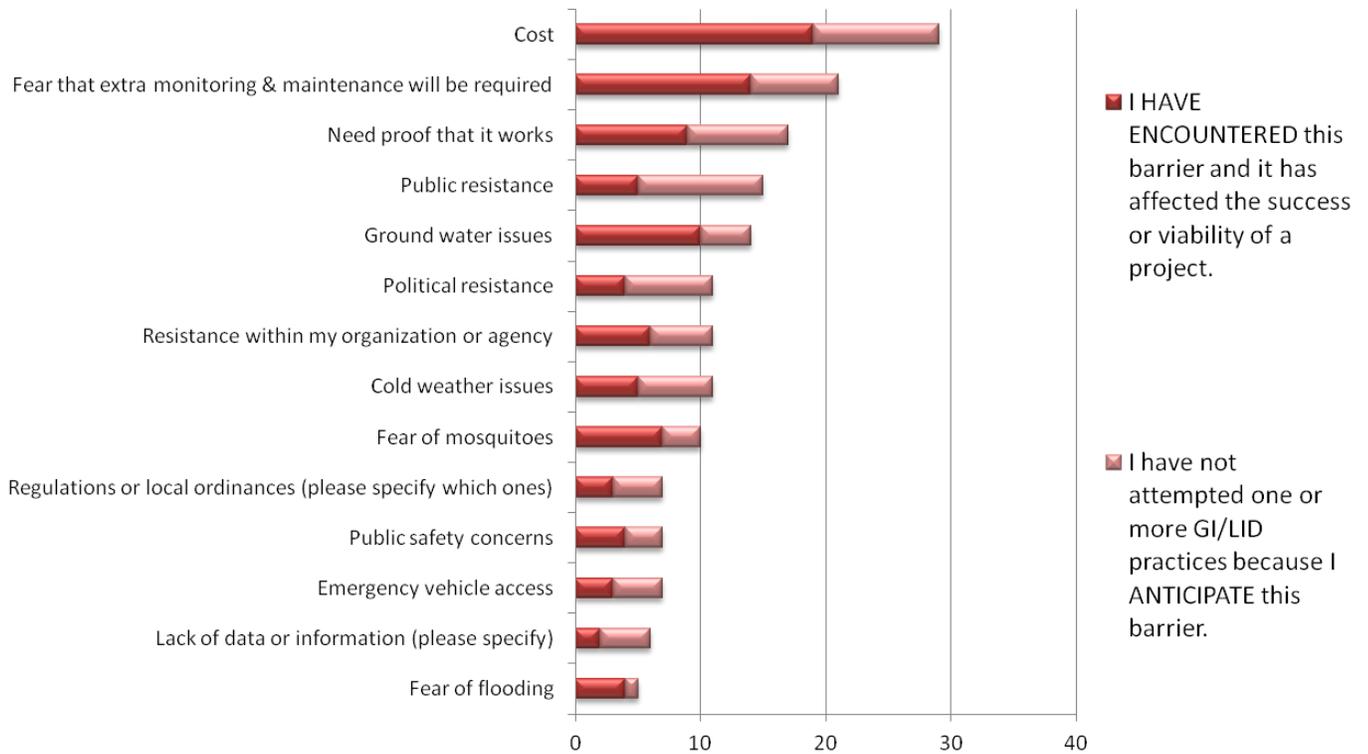
What is the primary reason that participants are interested in GI?LID?



- ◇ "I am an engineering consultant practicing in the area of stormwater management and green infrastructure/LID"
- ◇ "Reduce peak flow rates of stormwater into wastewater collection systems in City sewersheds which have a combined sewer system, and thereby help reduce the frequency of combined sewage overflow from that sewershed into the Western MA rivers."
- ◇ "reduce stormwater flows to collection systems and improve stormwater quality"
- ◇ "Looking to develop a vision for the multi-functional landscape."
- ◇ "this goes hand-in-hand with "reduce pollutant loads in receiving waters""
- ◇ "As Northampton considers the implementation of a storm water fee, we are looking at ways that residents and commercial properties might utilize GI to qualify for credits/fee reductions as part of a comprehensive incentive program."

Barriers

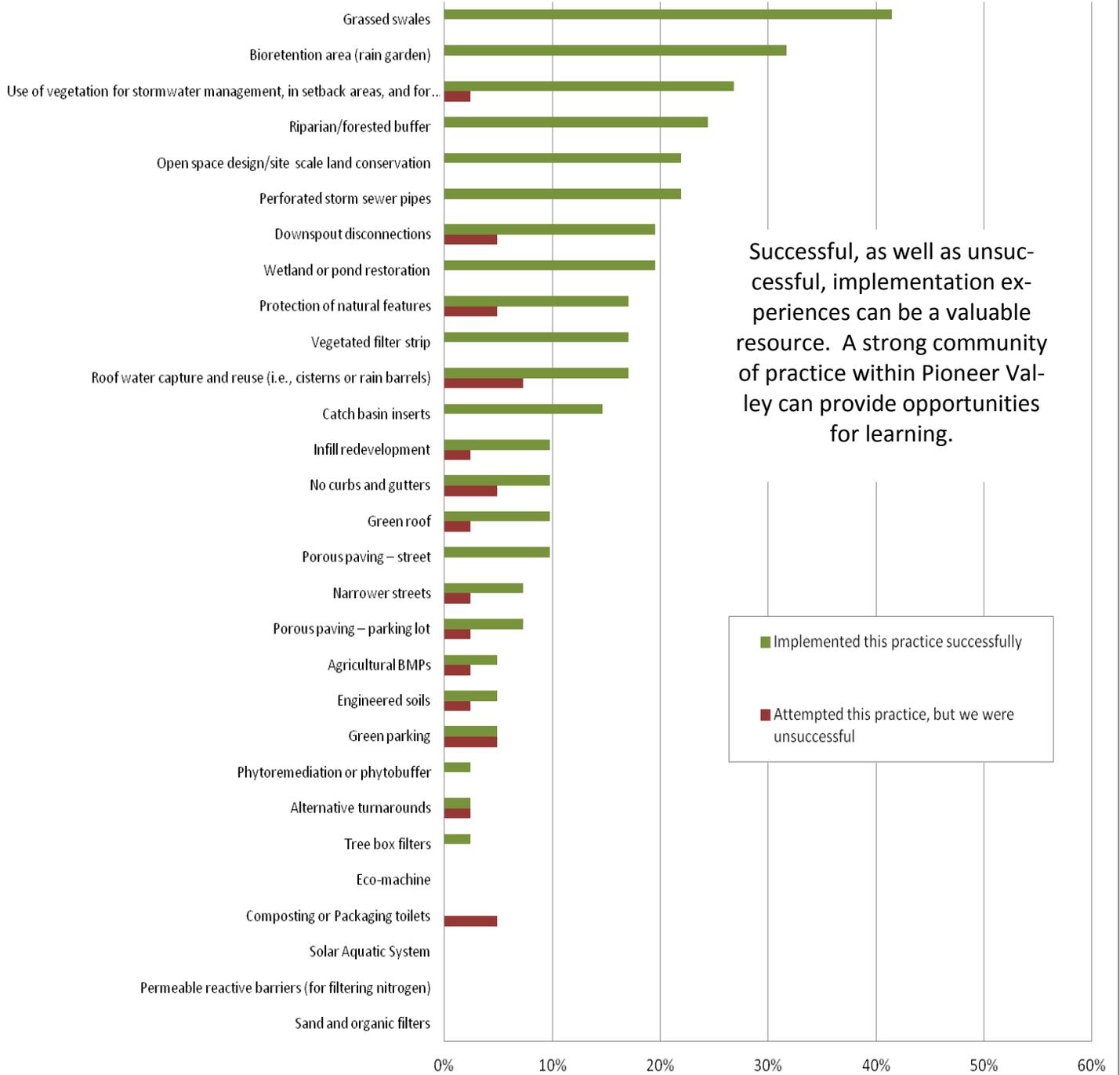
What is in the way?



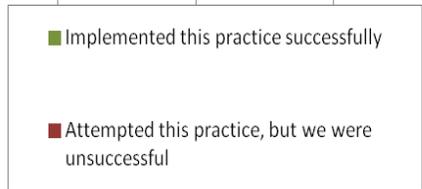
Other Fill-in

- ◇ Such resources aren't widely known in my country (Brazil).
- ◇ State and Federal
- ◇ Test pits needed to determine whether ledge present (water quality swale). Extra design time & cost to implement over traditional project. Deep sump basins are easily implemented.
- ◇ Lack of experience successfully constructing GI
- ◇ Zoning, land use, etc.
- ◇ I have not implemented GI/LID practices yet

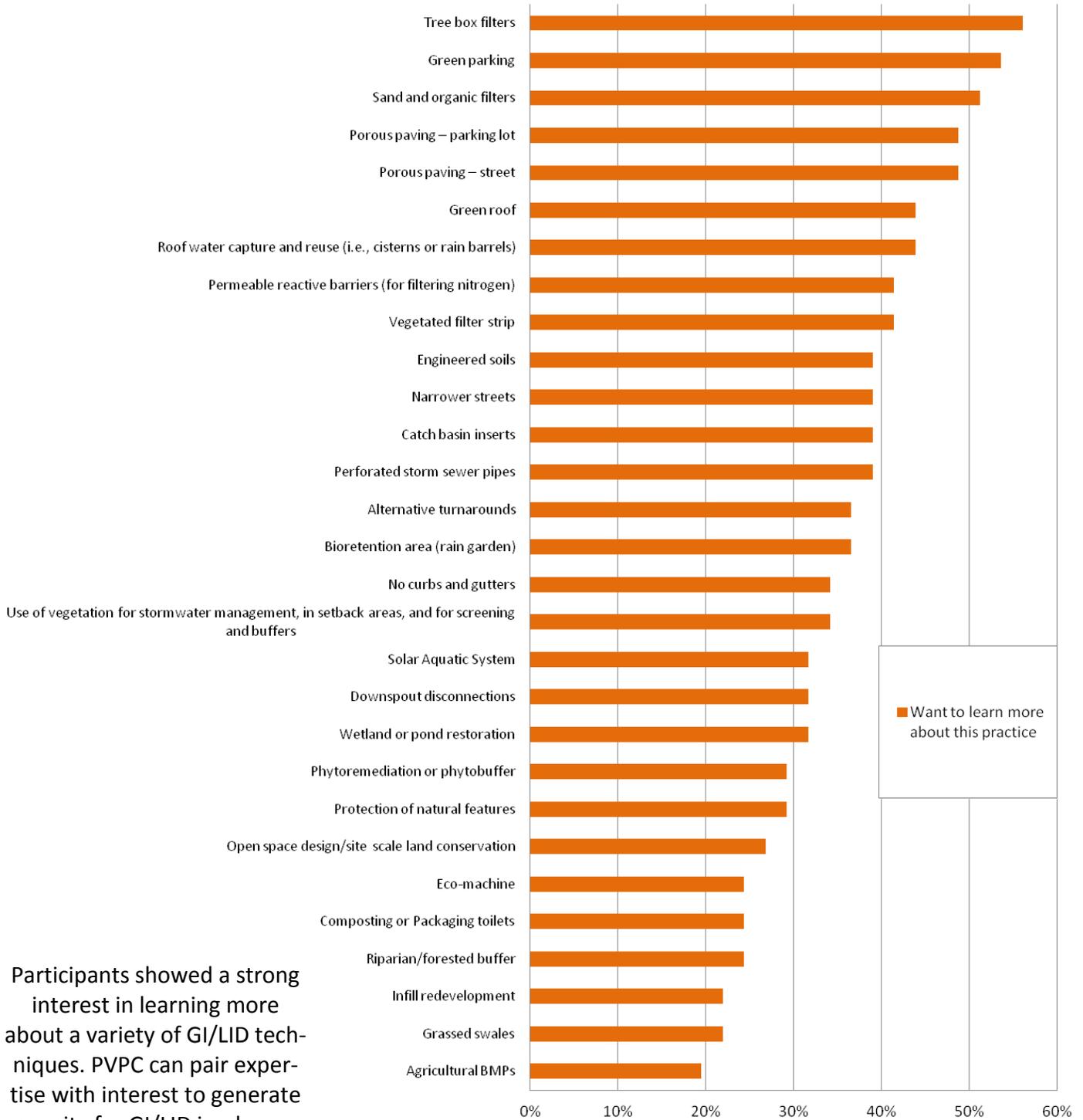
Implementation Success



Successful, as well as unsuccessful, implementation experiences can be a valuable resource. A strong community of practice within Pioneer Valley can provide opportunities for learning.

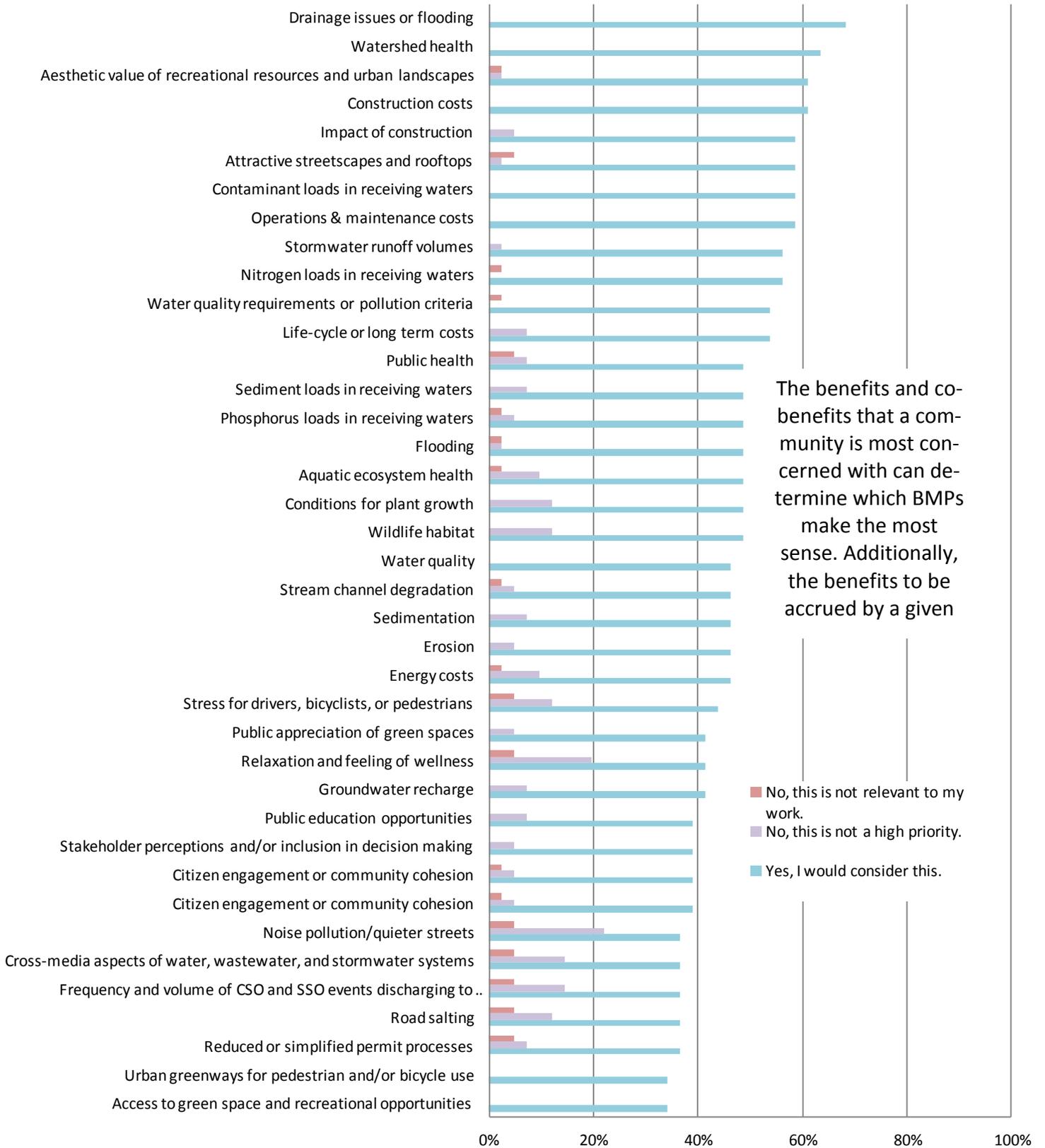


Interest in Management Practice

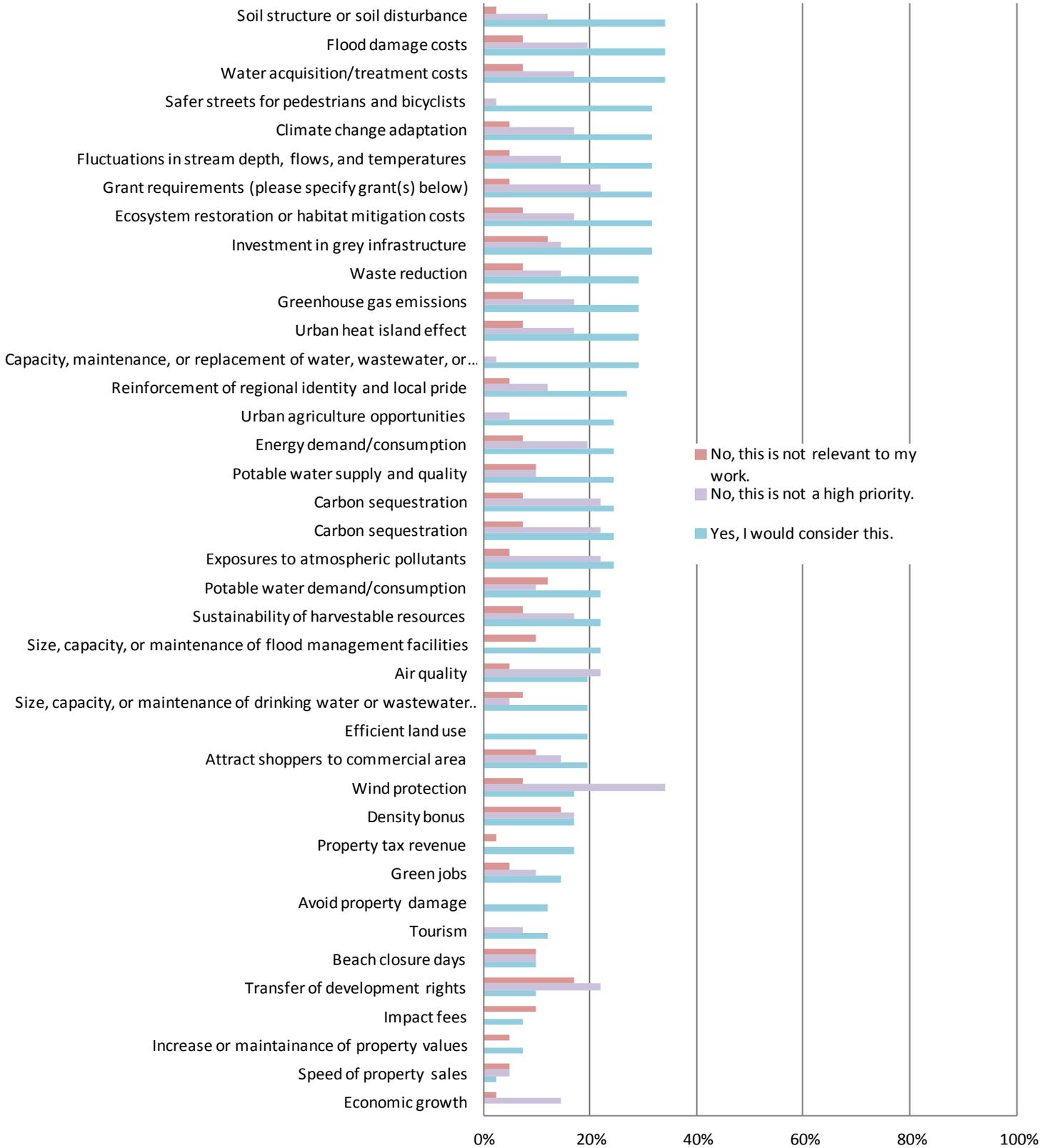


Participants showed a strong interest in learning more about a variety of GI/LID techniques. PVPC can pair expertise with interest to generate capacity for GI/LID implementation, maintenance, and cost reduction.

Priorities - Highest 39/78

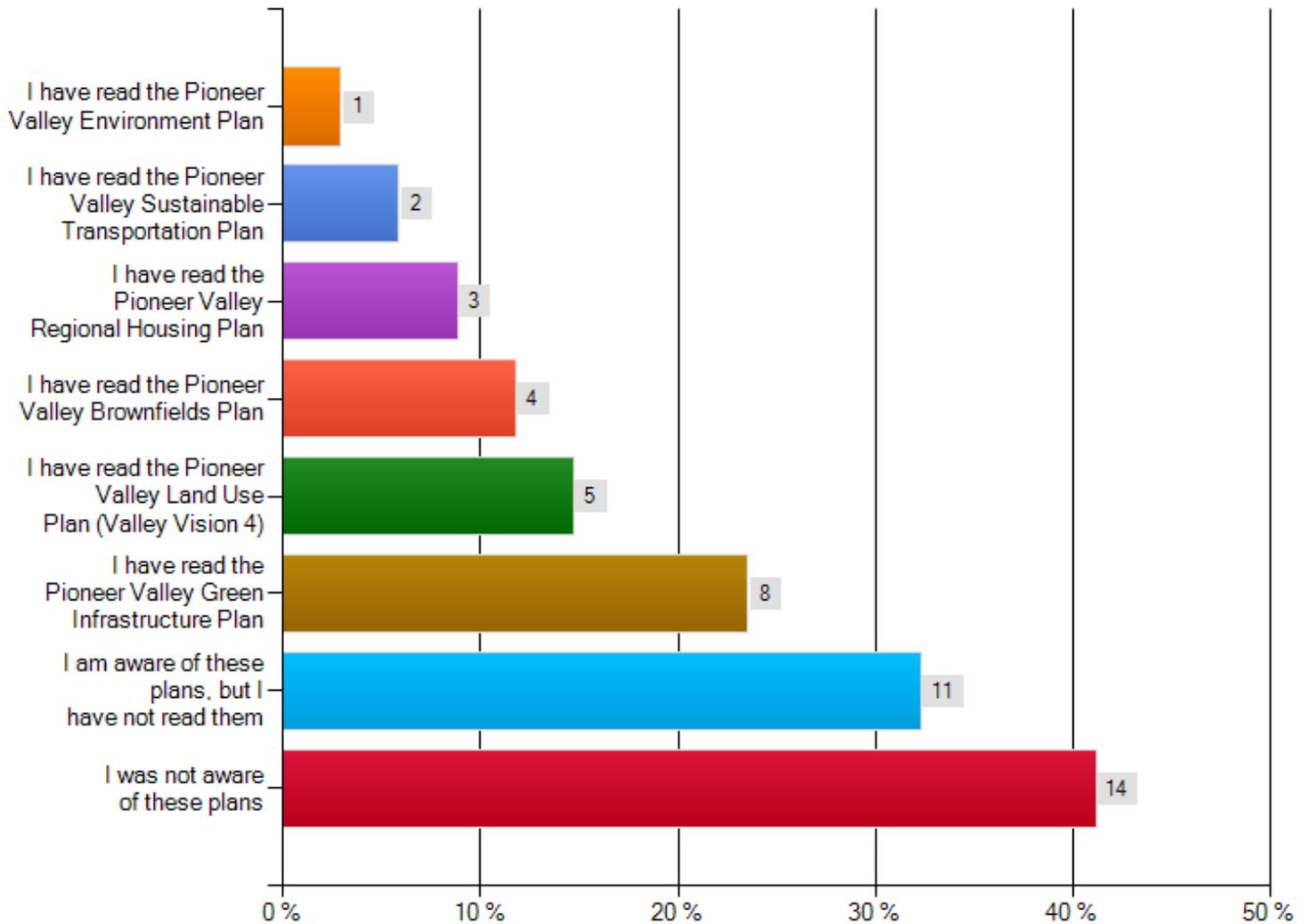


Priorities - Lowest 39/78



Awareness of PVPC Plans

Are you aware of, or have you read, any Pioneer Valley Regional Plans?



PVPC Plans are a resource to the region. The Green Infrastructure plan, in particular, provides an assessment of and spatial analysis of communities within the region in order to determine cost-effective placement of BMPs. Practitioners can use the results of the analysis as well as the process used within the plan to inform their own decision making.

Tools & Resources Used by Participants

- ◇ Text books (Sarte, McMahon, etc.)
- ◇ Stormwater calculator
- ◇ design details from cities and towns
- ◇ <http://www.unh.edu/unhsc/>
- ◇ http://www.flowstobay.org/ms_sustainable_streets.php
- ◇ http://efc.muskie.usm.maine.edu/docs/roseen_right_practice_right_place.pdf
- ◇ ArcGIS, Town Stormwater Ordinance, **MADEP website**
- ◇ **LEED Guidance, Sustainable Sites Initiative Guidance, Best Practices**
- ◇ green street design guidelines storm water calculator
- ◇ **Mass Stormwater Handbook** MassDEP stormwater website.
- ◇ Massachusetts Stormwater Handbook Stormwater calculator
- ◇ MA Wetlands Protection Act Stormwater guidelines/handbook, stormwater calculator, **EPA website**, CT River Stormwater Committee
- ◇ **stormwater calculator**, MA DEP stormwater management website
- ◇ **CT DEP Stormwater Quality Manual**
- ◇ **Case studies** of places implementing GI practices
- ◇ I am not aware of any. The gardeners at Wistariahurst are not represented on the board and have no input. We can only make suggestions and try to back them with good research.
- ◇ <http://precip.eas.cornell.edu/>
- ◇ **HydroCAD**
- ◇ <http://websoilsurvey.nrcs.usda.gov/app/>
- ◇ MA Stormwater Handbook

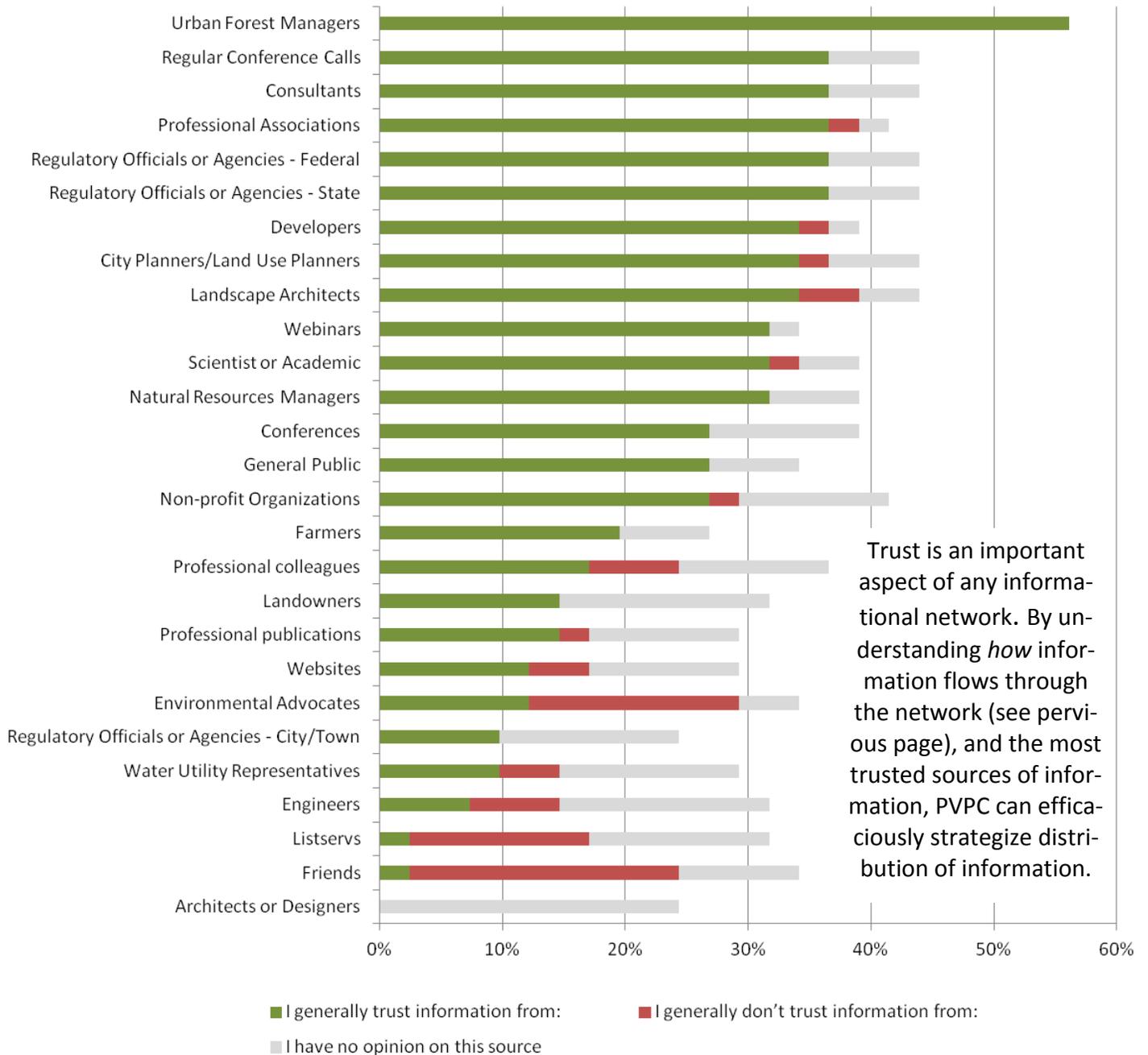
Missing Tools, Resources & Information

What has been difficult for participants to find?

- ◇ Open discussion of problems related to GI/LID projects esp in **cold weather climates**.
- ◇ **Contributing drainage area for specific projects/BMPs** - except for public 319 grant-funded projects, local groups/officials often do not have access to this information--need to contact project engineers/designers and they are often too busy to follow up.
- ◇ I'm interested in to what extent GI is practiced on a **residential** level. Many examples are of commercial sites and neighborhood-scale projects. Perhaps this is most effective scale at which to apply these principles. It would be interesting to know if which GI/LID practices are most appropriate to smaller-scale projects.
- ◇ **porous pavement design and cost analysis**
- ◇ What is the range of **stormwater fee** practices that would be legal and practicable in MA/CT? Are there monitoring and measuring technologies (ie to **meter stormwater** and grey water outflow) in recent years? What are the fed/state/regional resources available for support and training to assist DPW transition to GI/LID practices?
- ◇ It would be nice to have a **resource area (library) of sample projects** with specific implementation details which could be used on actual projects.

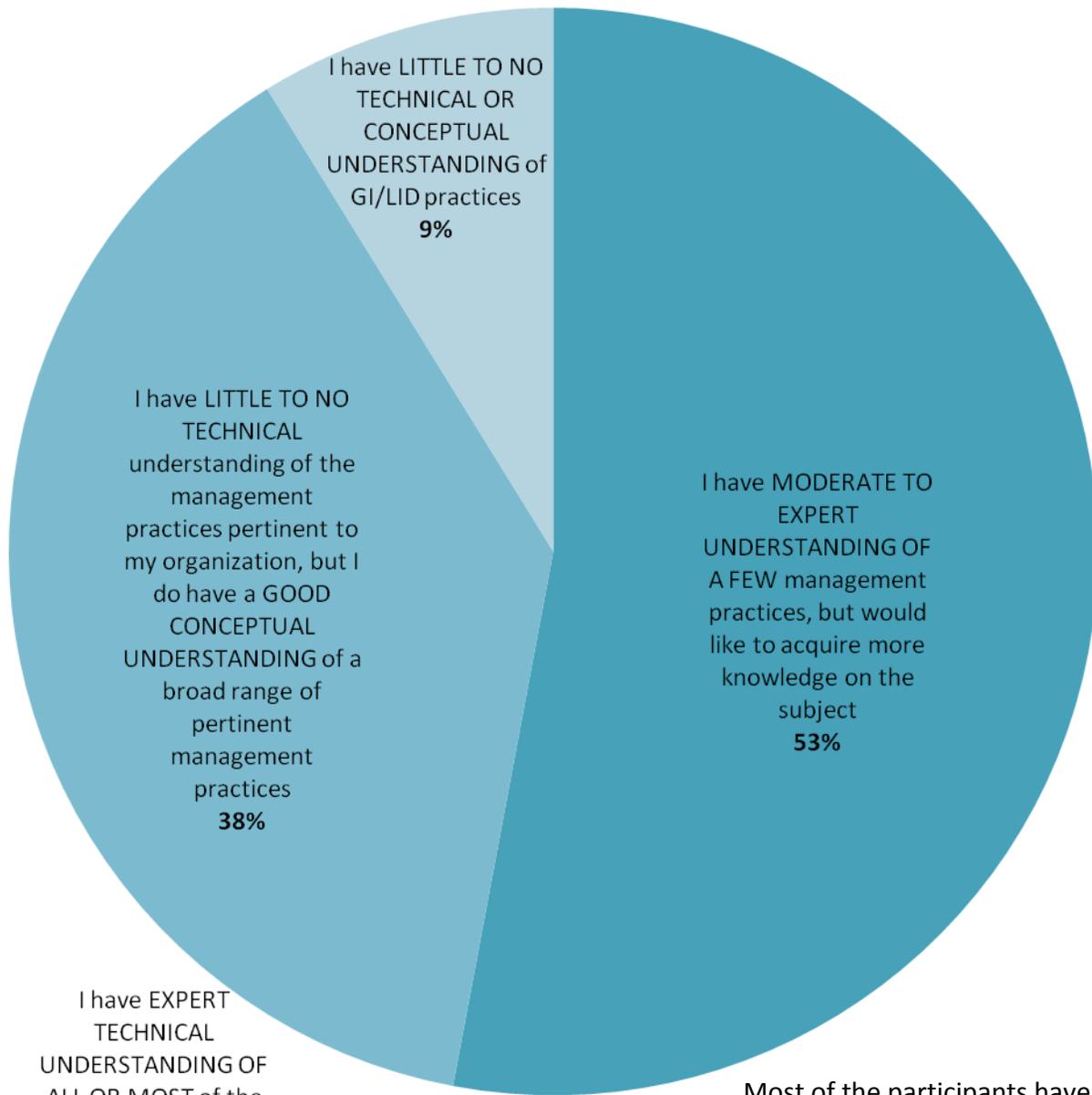
Trust

Participants' trust different sources of information differently



Familiarity

Technical & Conceptual Understanding of GI/LID



I have EXPERT TECHNICAL UNDERSTANDING OF ALL OR MOST of the management practices that would be appropriate for my organization to implement
0%

I have LITTLE TO NO TECHNICAL understanding of the management practices pertinent to my organization, but I do have a GOOD CONCEPTUAL UNDERSTANDING of a broad range of pertinent management practices
38%

I have LITTLE TO NO TECHNICAL OR CONCEPTUAL UNDERSTANDING of GI/LID practices
9%

I have MODERATE TO EXPERT UNDERSTANDING OF A FEW management practices, but would like to acquire more knowledge on the subject
53%

Most of the participants have a good conceptual understanding of GI, and are seeking more refined technical knowledge. PVPC can focus future efforts on expanding technical knowledge as much as possible through topical workshops and targeted information resources.

GREEN INFRASTRUCTURE for Developers, Designers, Contractors & Municipal Officials

PROMOTING CLEAN WATER. GREENING OUR STREETS AND NEIGHBORHOODS

ONE DAY – FREE WORKSHOP
Thursday, June 13, 2013
Kittredge Center
Holyoke Community College



Kathleen Ogden/VHB

Green Infrastructure practices for stormwater management are being incorporated into site design criteria for new and re-development projects. Come learn how these systems can be incorporated into a range of site design scenarios based on completed projects in New England. This workshop will focus on design, construction, budget, and maintenance challenges from completed projects and how they were overcome.

Representatives from regional projects will be present to share their experiences, tools and resources used to get the job done. Workshop format will be interactive with lots of opportunity to get answers about how to make Green Infrastructure work in your next project.



REGISTRATION IS REQUIRED BY JUNE 10th

Email Anne Capra at acapra@pvpc.org

Events to Come:

September 17, 2013 – Green Infrastructure Supplies, Tools, Resources, and Services Fair for Western Massachusetts

AGENDA

8:30 – 9:00

Registration

9:00 – 9:15

Greeting and Introductions

9:15 – 10:00

Green Infrastructure (GI) and Low Impact Development (LID) Introduction (Michelle West and Rich Claytor, Horsley Witten Group - HW)

Stormwater Impacts, GI/LID definition, regional and local examples, benefits overview, applicable MS4 requirements, and other drivers (LEED, Sustainable Sites Initiative).

10:00 – 11:00

Alternative Models for GI/LID Site Design and Project Benefits: Panel Discussion (60 minutes)

Facilitated discussion with a panel of four regional/local experts – examples of programs/policies where GI/LID have been applied.

- **Andrew Bohne**, New England Environmental, Inc.
Porous paving, Amherst headquarters building
- **John Furman**, VHB, Inc.
Roof water capture and reuse, Mass Mutual, Springfield
- **Richard Klein**, The Berkshire Design Group
Bioretention facilities, Northampton Senior Center
- **Stuart White**, Architect, and William Fuqua, Holyoke DPW
Green roof, Jones Ferry River Access Center, Holyoke

11:00 – 11:15

BREAK

11:15 – 12:00

Costs and Benefits of GI/LID (Rob Roseen and Tom Benjamin)

Review of actual design/installation/maintenance costs for GI/LID practices, documented benefits and reference to resources/data with additional information.

12:00 – 1:00

LUNCH

Web tools for GI/LID information, poster session, networking.

1:00 – 1:45

Incorporation of GI/LID in Retrofits and Redevelopment Projects (Michelle West - HW)

Introduction and local/regional examples, unique aspects for redevelopment, cost implications.

1:45 – 2:30

Importance of Construction Administration (20 minutes presentation- Rich Claytor - HW and 25 minute audience participation)

Construction admin (specs, preconstruction meetings, inspections, communication), sources for materials, contractor expertise. Question and answers.

2:30 – 2:45

BREAK

2:45 – 3:30

Importance of GI/LID Maintenance (20 minutes presentation- Rich Claytor - HW Representative and 25 minute audience participation)

Perceptions/realities about GI maintenance requirements, special equipment and training. Routine and non-routine maintenance. Aesthetics and economics of well maintained practices. Questions and answers.

3:30 – 4:15

Resources/Tools to Get the Job Done (EPA)

What we heard from you in the pre-workshop exercise, where to find tools & resources, the Pioneer Valley Green Infrastructure Plan, next steps to get the job done, and future workshops.



Pioneer Valley
Planning Commission
60 Congress Street – Floor 1
Springfield, MA 01104
www.pvpc.org



**GREEN INFRASTRUCTURE for Developers,
Designers, Contractors & Municipal Officials**
June 13, 2013 8:30-4:15
Kittredge Center
Holyoke Community College

REGISTRATION IS REQUIRED BY JUNE 10th

Email Anne Capra at acapra@pvpc.org

Events to Come:

September 17, 2013 – Green Infrastructure
Supplies, Tools, Resources, and Services Fair for
Western Massachusetts



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, October 26th 11 am – 3 pm
Lilly Library, 19 Meadow Street, Florence, MA

Come learn how you can soak up the rain. This is a hands-on demonstration workshop on how citizens and businesses can capture and treat rain water and snow melt. You'll learn about:

- Rain barrels and cisterns
- Porous pavers
- Rain gutter downspout diversion
- Rain gardens
- Green roofs

Registration is required – deadline October 18th

To register contact Pioneer Valley Planning Commission at acapra@pvpc.org or Anne Capra at (413) 781-6045.

Workshop is FREE. Refreshments provided.

Instructors are from the Pioneer Valley Planning Commission, UCONN Center for Land Use Education and Research, and the U.S. Environmental Protection Agency

Sponsored by Pioneer Valley Planning Commission, Connecticut River Stormwater Committee, and U.S. Environmental Protection Agency





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, October 26th 11 am – 3 pm

Lilly Library, 19 Meadow Street, Florence, MA

AGENDA

- 10:30-11** **Registration, Light Refreshments, Rain Barrel Raffle sign up, Materials Display Table**
- 11-11:15** **Welcome** *Anne Capra, Pioneer Valley Planning Commission*
Josh Secunda, U. S. Environmental Protection Agency, Region 1
- Round Robin w/Attendees – Where are you from and why are you here?**
- 11:15-11:35** **Watershed Dynamics, Stormwater Pollution, and the Residential Landscape in the Connecticut River Watershed – How does it all work?**
Anne Capra, Pioneer Valley Planning Commission
- 11:35-12:45** **Rain Garden Design, Construction and Maintenance – Residential Primer**
Michael Dietz, UCONN NEMO
- 12:45-1:00** **BREAK**
- 1:00-1:30** **Rain Garden App Demonstration Exercise**
Michael Dietz, UCONN NEMO
- 1:30-2:45** **Rain Barrels, Cisterns, Porous Pavers, Green Roofs and Other Systems**
Anne Capra, Pioneer Valley Planning Commission
Hands-on demonstration and discussion:
- *Rain barrels and cisterns*
 - *Roof leader diversion*
 - *Drywells and infiltration devices*
 - *Porous pavers and pavement-*
 - *Green roofs*
- 2:45-2:50** **Resources**
Anne Capra, Pioneer Valley Planning Commission
Web tour of two websites: www.ConnecticutRiver.us and www.PVPC.org/soakuptherain
- 2:50– 3:00** **Next Steps – How will you Soak up the Rain?**
Rain Barrel Raffle
Post-Workshop Evaluation

Sponsored by Pioneer Valley Planning Commission, Connecticut River Stormwater Committee, and U.S. Environmental Protection Agency Region 1

HOME & REAL ESTATE GARDEN

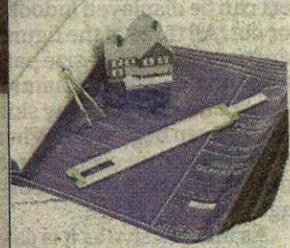
OPEN HOUSES
Inside Real Estate



AUCTIONS, TAG SALES
Inside Real Estate



WESTERN MASS. DEEDS
Page F6



MORTGAGE RATES
Page F7



Soak it up!

Control storm water, snow melt to help curb pollution ■ Page **F4**

For the Best Local Real Estate listings, log onto masslive.com

Soak it up!

Control rain, snow melt to help curb pollution

By CORI URBAN

Concerns are rising over more frequent large storm events that push municipal sewer systems past their limits, causing not only flooding but increased water pollution.

That's why the Pioneer Valley Planning Commission is sponsoring a demonstration workshop for homeowners and businesses on ways to control storm water and snow melt.

"Soak up the Rain: Benefits for Your Home and Business" will take place on Oct. 26 from 11 a.m. to 3 p.m. at Lilly Library, 19 Meadow St., in the Florence section of Northampton.

"The Connecticut River is probably the most important natural resource in the region, and it is getting polluted at times during wet weather from combined sewer overflows," said Anne M. Capra, principal planner for the Pioneer Valley Planning Commission.

Some cities - like Chicopee, Springfield and Holyoke - have storm sewers that are combined with sanitary sewers, and thus during storms raw sewage can be discharged into the river, causing elevated bacterial levels in the water and making swimming, boating and fishing unsafe.

In addition, heavy runoff can cause erosion.

But if property owners were to use methods to use or to soak storm water into their grounds, it would not have to pass through the sewer system, Capra explained. Overflows and resulting problems would be less likely.

"Our goal is to reduce peak overflows," she said.

The hands-on demonstration workshop will help property owners and businesses learn how they can

IF YOU GO

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

When: Saturday, Oct. 26, from 11 a.m. to 3 p.m.

Where: Lilly Library, 19 Meadow St., in the Florence section of Northampton

Cost: Free

To register by Oct. 21 and for more information:

Email acapra@pvpc.org or call (413) 781-6045

“Our goal is to

reduce peak

overflows.”

Anne M. Capra

capture and treat rainwater and snow melt. Participants will learn about rain barrels and cisterns, porous pavers, rain gutter downspout diversion, rain gardens and green roofs.

Instructors will be from the Pioneer Valley Planning Commission and the University of Connecticut Center for Land Use Education and Research and sponsors include the U.S. Environmental Protection Agency.

The Connecticut River is probably the most important natural resource in the region, and it is getting polluted at times during wet weather.

"Storm water nationwide is the leading cause of water pollution, according to the EPA," Capra said.

In addition to pollutants entering the river through the sewer system, she said, pollutants get into rivers, streams, lakes and other water systems when rain hits the ground and picks up and distributes pollutants including pesticides, fertilizer, oil, manure, trash and road salt.



Submitted photo

A rain garden, designed by Berkshire Design Group, at the Northampton Senior Center. On the cover: An infiltration swale designed and maintained by Tree Frog Landscapes runs down the center of the parking area at River Valley Market Co-operative on King Street in Northampton.

Again, if rainwater is captured on properties to reduce the amount of water washing into bodies of water, the less water will be polluted, Capra emphasized, noting that rain gardens and rain barrels help with this process.

She said there is a greater interest in this process because of the increased frequency of large storm events in New England and because communities are being regulated by the EPA to better manage storm water on all scales, including municipal, business, industrial and resi-

dential.

Some communities - like Chicopee - have storm water utilities; Northampton is considering one, and residents would pay a fee to manage the storm water infrastructure in the community.

Capra said communities are realizing that because of the increase in large storm events and the federal regulations, they cannot "get by" with the storm water work done through the regular municipal budget funds. Thus a storm water utility "needs to be funded as its own infra-

structure," she said.

Sponsored by Pioneer Valley Planning Commission, Connecticut River Stormwater Committee and the U.S. Environmental Protection Agency, the demonstration workshop for homeowners and businesses is free. Refreshments will be provided.

Registration is required; the deadline is Oct. 21.

To register, contact Pioneer Valley Planning Commission at acapra@pvpc.org or Anne Capra at (413) 781-6045.

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Snow Blower

28"

\$999

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f

10-26-13 Soak up the Rain Workshop Evaluation Results

of attendees: 29 # of completed evaluations: 20

For each category below, please **CIRCLE** the number that best reflects your evaluation.

	Poor		Good		Excellent
	1	2	3	4	5
<u>A. Round Robin w/ Attendees</u>					
1. Relevance and usefulness	0	0	5	11	1
<i>one person noted: Nice to see the geographic spread of attendees. Perhaps give a reminder in beginning to be concise.</i>					
<u>B. Rain Garden Design, Construction and Maintenance – Residential Primer</u>					
1. Relevance and usefulness	0	0	0	6	14
2. Quality of presentation	0	0	0	5	15
<u>C. Rain Garden App Demonstration Exercise</u>					
1. Relevance and usefulness	0	0	1	6	13
2. Quality of presentation	0	0	1	6	12
<u>D. Other Systems</u>					
1. Relevance and usefulness	0	0	2	6	12
2. Quality of presentation	0	0	2	8	10
<i>one person noted: Not super relevant for me, also I was tired of sitting and listening at this point.</i>					
<u>E. Resources</u>					
1. Relevance and usefulness	0	0	1	9	10
2. Quality of presentation	0	0	1	9	10
<i>one person noted: Would love resources/phone numbers on rebates, incentives, etc.</i>					

F. Strengths and Weaknesses

1. Which topics of the training did you consider most beneficial?

- Rain gardens
- When/where/why/how of rain gardens. Also thank you for the printouts.
- Calculating runoff
- Rain garden (I was surprised at all the info on paving!)
- Pavers (other systems). Would have liked more.
 - Rain barrels, rain gardens, that paving systems were immensely helpful.
- Rain gardens, rain barrel catchment.
- Rain barrels
- Rain barrel info, rain garden info
- Internet access would have improved demos
- Rain garden designs; porous pavers, and water catchments.
- All
- Local resources, UConn's department was helpful
- Building rain gardens
- Apps, web site resources, actual products to view
- Rain gardens, initial background by Anne.
- Could have had some other hands-on experiential component.

2. Which topics of the training did you consider least beneficial?

- Underground cisterns
- none
- They were all relevant!
- Green roofs, not so practical for homeowners - good that not much time devoted to topic.
- Connecticut specific stuff.
- Some terms were completely new - just beginning with this. Perhaps a terminology sheet would be helpful.
- Math, cannot remember how to do
- None, it was all beneficial, interconnected
- Cisterns, dry wells, commercial scale.

G. Did this training meet your expectations?

<u>Yes</u>	<u>No</u>
18	0

H. How would you rate the facilities?

<u>Poor</u>		<u>Good</u>		<u>Excellent</u>
1	2	3	4	5
0	0	1	8	10

I. Overall rating of the entire workshop

<u>Poor</u>		<u>Good</u>		<u>Excellent</u>
1	2	3	4	5
0	0	0	7	11

J. What will your next steps be for addressing stormwater issues at your home or business?

- Rain garden
- Talking and convincing my husband to do pervious overflow parking
- Redirect roof water, figure out whether rain garden can help
- Expand my collection system
- Rain barrels and rain gardens. Also researching options for replacing my driveway.
- Rain gutters to be installed. Need to calculate collection amounts to decide rain barrels v. cistern. Rain water garden very possible too.
- Adding more rain barrels
- Landscaping around a newly constructed barn, which is causing flooding issues.
- Rain barrels connections and putting them away for winter. I didn't know they should go in. My
- Empty rain barrel, get gutters clean and reevaluate stones around part of foundation
- Removing asphalt and concrete; installing rain barrels; building rain gardens; altering gutters
- Detailed look at alternatives from resources mentioned; check costs of materials, schedule work
- Begin a rain garden design, look into porous pavement options
- Implementing strategies suggested by presenters for slope situation.
- Measuring and assessing space, starting to physically do the work.
- Running water from gutter away from house
- Testing areas in my yard for absorption levels. Making my own water barrel.
- When go to buy land for a home, will have a more educated and creative eye.
- At work there is some kind of a rain garden in the parking lot. I'm interested in transitioning the vegetation from cattail and bittersweet to something more functional.

K. What would be most helpful to you for implementing your next steps? What additional resources, information, incentives do you need?

- Money and list of products and where to buy
- Step by step instructions. Will need the time and \$s, but that will come.
- Local area contacts for future questions.
- Vendors. Where to get rain barrels and paver/asphalt info.
- Establish Soak up the Rain program in Berkshire County too
- Materials, supplies in area and to go look at sites referred to in this workshop.

- A person to come out one time to do a consult on our property to help see what would work best and possible pitfalls to avoid.
- Plan to check out websites
- Wegsites, books, I am curious to look at the phone app.
- Will check resources given
- Referral for materials list - local
- I would like to see this workshop offered in my town of Belchertown. Development is increasing and there seems to be a lack of planning with regard to stormwater planning.
- Availability of a site consultation (West Springfield) even if a fee.
- Wish the Uconn smart phone app was on the web. I don't have a smart phone.
- Resource links look like they have valuable information
- Besides having someone else do the digging for me, the web sites will help me implement my
- Sources, phone numbers to help me create a pitch to my organization that targets economic benefits
- Incentive/programs for new homeowners and young farmers

L. Do you know any groups or organizations that would be interested in this workshop? Please provide contact information.

- Try contacting Stanley Park or Grandmother's Garden both in Westfield
- Pascommuck Trust in Easthampton
- Berkshire Regional Planning Commission
- Sustainable Berkshires
- Center for Eco Technology
- Master Gardeners
- Greening Greenfield
- High schools, colleges with horticultural/landscaping classes such as STCC.