

DPW-Water Pollution Control Chicopee, Massachusetts



2013 Annual Report Phase II Storm Water Management

Submitted:2014

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Section 8

Activities of the Connecticut River Stormwater Committee for the 2013 Annual Report

Section 1 Public Education and Outreach

1A Educational Displays

The City posted educational displays on the City's website during the 2013. The City of Chicopee is a member of the Pioneer Valley Planning Commission's Connecticut River Stormwater Subcommittee. A summary of the committee's activities is attached to this report. The City as part of the committee has hosted educational seminars and has used newspaper articles in the local paper to reach out.

The City of Chicopee has public service announcements on two of its vehicles. One of the vehicles is a pump station box truck with a PSA about stormwater pollution and lawn fertilizers. The second vehicle is the City's vac truck. The vac truck has a PSA about stormwater pollution and the importance of picking up pet waste.

The City of Chicopee has posted signs at all active CSOs in order to inform residents of the location and possibility of overflows. Signs are posted to be seen from land and the adjacent water body. Structures were installed at the Medina Street boat ramp, Chicopee River near the Davitt Bridge on Granby Rd. and the Stanley Berchulski Fisherman Access in 2007. The purpose of these structures is to inform users of water quality, such as the results of the Fecal Coliform testing, at that location. In 2013 the posting was updated weekly from early spring to early autumn Fecal Coliform tests were performed and results were posted.

1B Classroom Education

The City supported Chicopee High School with some laboratory supplies and equipment and continues to encourage storm water educational topics to be included. Staff works with a Chicopee High School Chemistry class on storm water related topics.

The testing of some local water bodies was started in the autumn of 2013 and continues throughout the school year. Laurie Catarino & Meagan St. Pierre of the Chicopee WPCF met with a Chicopee High School teacher and her students until they became proficient with the testing. The City of Chicopee did the sampling and delivered them to the students for analysis. Water samples from Bemis Pond, the Chicopee River, Mt. Lake, and the Connecticut River were analyzed for a number of parameters.

The City of Chicopee WPCF provided four tours for students from two local community college Biology classes. This gives students an opportunity to ask questions and to see first hand what steps are being taken to mitigate the water pollution problems the City of Chicopee faces.

1C Local Cable Access

The annual Hazardous Waste drop off was advertised on Chicopee local cable access channel 5.

1D Informational Door Hangers and Mailings

Door hangers are placed on homes in neighborhoods where catch basins were cleaned and maintenance with the City's Vactor truck was done. A mailing was sent to let city residents know the 2013 trash pick up schedule and bulk drop off procedures.

1E Hazardous Waste Collection Day

The City conducted an annual household hazardous waste collection for residents in 2013.

The event was publicized in a local newspaper the local cable access channel, four public postings, the City's website, newspapers and a large sign at the front gate.

Information and signups were available to residents at the City's website: www.Chicopeema.gov, at City Hall and at the DPW office.

There is an additional waste collection available to residents by appointment during the months of May - October. Monthly oil based paint collection held May – October.

1F Newspaper Press Releases

The City of Chicopee advertised its Hazardous Waste Collection Day in a local newspaper.

An article advertising a "Soak Up the Rain" seminar including an article appeared in the Home & Garden section of the local paper.

1G CSO Notification E-mail

The City of Chicopee sends emails to surrounding communities so they can be informed about the possible negative effect of the CSOs during rain storms. The City has a CSO facility which is activated when flow at the treatment plant is greater than 25 MGD. During 2012 the e-mail list included Health Department representatives from Holyoke, Chicopee, Springfield and West Springfield. The program was started in mid-summer of 2006.

Section 2 Public Involvement/Participation

2A Community Hotline

The City publicizes the community hotline through the distribution of door-hangers with the catch basin cleaning program and with other mailings. In 2013, 268 catch basins were cleaned and two to four hangers are distributed per basin. The phone number for the City's water pollution control facility is included to facilitate reporting of dumping, illicit discharges, and spill emergencies..

2B Attitude Surveys

The City continued its Customer Survey Program, which involves providing a questionnaire to customers following receipt of service. Two storm water related questions are on the survey form. The survey will be conducted to measure the success of the Public Education and Public Involvement components of the Storm water Management Plan. The two Stormwater questions on the survey in 2013 were: 1) Do you support higher sewer/storm fees for cleaner Chicopee & Conn. Rivers? And 2) Do you support a higher sewer/storm fee to separate sewer pipes to stop sewer backups?

2C Storm Drain Marking

The DPW-WPC stencils catch basins or marks them by installing placards. Messages may include such phrases as “Do Not Dump” or “No Dumping, Drains to River”. The DPW-WPCF’s collection system department marked approximately 70 catch basins in 2013.

2D Watershed Committee

The DPW-WPC encourages and supports the activities of the Chicopee River Watershed Council (CRWC).

2E Conservation Commission

The Conservation Commission reviews building permit applications under both the Massachusetts Wetlands Protection Act and the Chicopee Wetlands Protection Ordinance. Zoning regulations require stormwater management for all new construction. A report of the Conservation Commission’s activities is attached.

SECTION 3 ILLICIT DISCHARGE DETECTION AND ELIMINATION

3A Mapping Storm Water Outfalls

The City of Chicopee’s Engineering Department has located all existing stormwater outfalls using GPS. A condition log of each location has been established to monitor and identify problem areas. This data and a copy of this map is on file with the City Engineer.

3B Develop Illicit Discharge Plan

Chapter 231 of the Chicopee Storm Water Management Ordinance outlines this activity. Additionally, the drainage network plan will serve as a tool to track illicit discharge sources.

Illicit discharges to the storm drain were corrected as they were discovered in 2013. In 2013 as part of expanded illicit discharge detection plan, the DPW-WPC hired two seasonal employees to inspect & sample outfalls. Outfalls were photographed and

examined for signs of sewage contamination. If flowing, the outfall was tested using field kits to find possible contamination. The flow was sampled for surfactants, Chlorine, ammonia, temperature and E. coli. Any signs of contamination required further testing up stream to find the source. The illicit discharge detection program continues in 2014.

3C Storm Water Discharge Ordinance

The City adopted a Storm Water Management Ordinance (October 28, 2003) to prohibit non-storm water discharges into the MS4 system. A copy was previously sent.

3D Illegal Dumping

The DPW performs regular patrols of areas known for illegal dumping. The DPW has post signage to deter illegal dumping at common dumping areas. The City picks up dumping daily as it occurs to prevent the trash breeding trash phenomenon.

3E Recreational Septage

The Sewer Commission currently allows Chicopee residents with Recreational Vehicles to dump their septage at the WPCF. The program is designed to deter illegal dumping and is provided at no cost to the resident.

3F Failing Septic Systems

The Health Department inspects septic system failures that are used to identify problem areas.

3G Industrial / Business Connections

The Industrial Pretreatment Program's effectiveness is evaluated as required annually each March 1st. This includes the demonstration that EPA requirements for Industrial User monitoring, inspecting, enforcement, and permitting has been satisfied; the City has implemented local discharge limitations that are sufficiently protective to the POTW and its workers, its receiving stream, and sludge disposal options; the City's IPP is appropriately funded and staffed. The IPP report submitted during 2013 will be provided to you upon request.

3H Video Inspection

The DPW – WPC uses a video camera to inspect storm drain pipes and sewer mains as needed to follow up on illicit discharges discovered. Over 60,000 feet at different locations throughout the City were TV inspected in 2013.

Section 4 Construction Site Runoff Control

4A Construction Runoff Ordinance

The City adopted a Storm Water Management Ordinance that requires sediment and erosion control at construction projects with over one acre in total disturbance.

4B Construction Plan Review

Under the Storm Water Management Ordinance, applicants with projects with disturbance over one acre will be required to submit sediment and erosion control plans for City review and approval. The Planning Departments reviewed projects for storm water management compliance in 2013. The Conservation Commission reviews projects for storm water management and compliance with the Chicopee Wetlands Protection Ordinance. The Engineering Department reviews commercial, and subdivision sites along with infrastructure improvements.

4C Inspection / Reporting

Under the Storm Water Management Ordinance, projects with disturbance over one acre will be required to have regular inspection of sediment and erosion controls and reporting of construction activities.

SECTION 5 POST CONSTRUCTION STORMWATER MANAGEMENT

5A Post Construction Runoff Ordinance

The City adopted a Storm Water Management ordinance to address post construction runoff from projects with over one acre in total disturbance.

5B Site Plan Review

Under the Storm Water Management Ordinance applicants with projects with disturbance over one acre are required to submit storm water control plans for City review and approval.

5C Storm Water System Maintenance Plan

Under the Storm Water Management Ordinance projects with disturbance over one acre are required to include a program outlining procedures for long term operation and maintenance of storm water facilities.

SECTION 6 GOOD HOUSEKEEPING / POLLUTION PREVENTION

6A Municipal Maintenance Activity Program

The City is continuing to work to develop a program to outline procedures associated with maintenance of open spaces and parks, vehicular fleets, City-related construction activities, streets and the storm sewer system. The City is evaluating existing municipal procedures; modifying any procedures as needed, and implementation of the program plans.

6B Training of Municipal Employees

Municipal employees performing activities under the new Municipal Maintenance Activity Program (BMP #6A) are informed of new policies and procedures. This will occur pending adoption of the Program. DPW employees will also be informed of the Storm Water Pollution Prevention Plan requirements for the DPW, as applicable.

6C Storm Water Pollution Prevention Plan / MSGP

The DPW has finalized an Integrated Pollution Prevention Plan (IPPP) which includes Stormwater Pollution Prevention Plan (SWPPP) and a Spill Prevention Countermeasure and Control (SPCC). The plans were reviewed, revised and implemented during calendar year 2008. This is part of the City's Phase II Stormwater Program Multi-Sector General Permit (MSGP), and in accordance with EPA regulations 40 CFR 112. The DPW implemented the best management practices outlined in the plan.

6D Catch Basin Cleaning Program

The City cleaned approximately 268 catch basins in 2013. Informational flyers are distributed to homes in the immediate area around the basins.

6E Street Sweeping

For calendar 2013 the City had three mechanical sweepers. Street sweepers were on the road continuously from March through November 2013. Every street in the City was swept at least once. Most main arteries were swept several times as sweepers moved in and out of secondary streets. While only monthly sweeping is required in the business districts the City set a higher goal. The Central business districts, Chicopee Falls, Fairview, Willimansett, Aldenville and Chicopee Center, were swept once per week.

6F Used Oil Recycling

The City collected of used oil in 2013 at the DPW facility for utilization as a regulated recyclable material in the DPW garage waste oil heater. The City will continue to offer Used Oil Recycling.

6G Hazardous Waste Collection

The City continued its annual Hazardous Waste Collection Day; in 2013 it was held in October. Every year, the City publicizes the collection day through newspaper ads, radio and local cable access. There is also seasonal paint collection at the DPW.

SECTION 7 BMPs for Meeting TMDLs

7A TMDL for Connecticut River

According to the Massachusetts Year 2012 Integrated List of Waters, the Connecticut River is designated as Category 5 “Waters requiring a TMDL”. The targeted pollutants are priority organics, pathogens, and suspended solids. Sources of priority organics may include but are not limited to: road surfaces, inadequate fueling areas or practices, illegal dumping. Sources of pathogens may include but are not limited to: pet waste, winter road maintenance materials, illicit sewer discharges, and failing septic systems. Sources of these suspended solids may include but are not limited to: lawn care products, litter, winter road maintenance materials, erosion from construction activities, and illicit sewer discharges. The Storm water Management Program includes many BMPs to address reduction of contaminants from these sources under all Six Minimum Control categories.

7B TMDL for Chicopee River

According to the Massachusetts Year 2012 Integrated List of Waters, the Chicopee River is designated as Category 5 “Waters requiring a TMDL”. The targeted pollutant is pathogens. Sources of pathogens may include but are not limited to: pet waste, winter road maintenance materials, illicit sewer discharges, and failing septic systems. The Storm water Management Program includes many BMPs to address reduction of contaminants from these sources under all Six Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.

7C TMDL for Bemis Pond

According to the Massachusetts Year 2012 Integrated List of Waters, Bemis Pond, as a portion of Abbey Brook, is designated as Category 5 “Waters requiring a TMDL”. The targeted pollutant is suspended solids. Sources of this pollutant may include but are not limited to: lawn care products, litter, winter road maintenance materials, erosion from construction activities, and illicit sewer discharges. The Storm water Management Program includes many BMPs to address reduction of contaminants from these sources under all Six Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.

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.

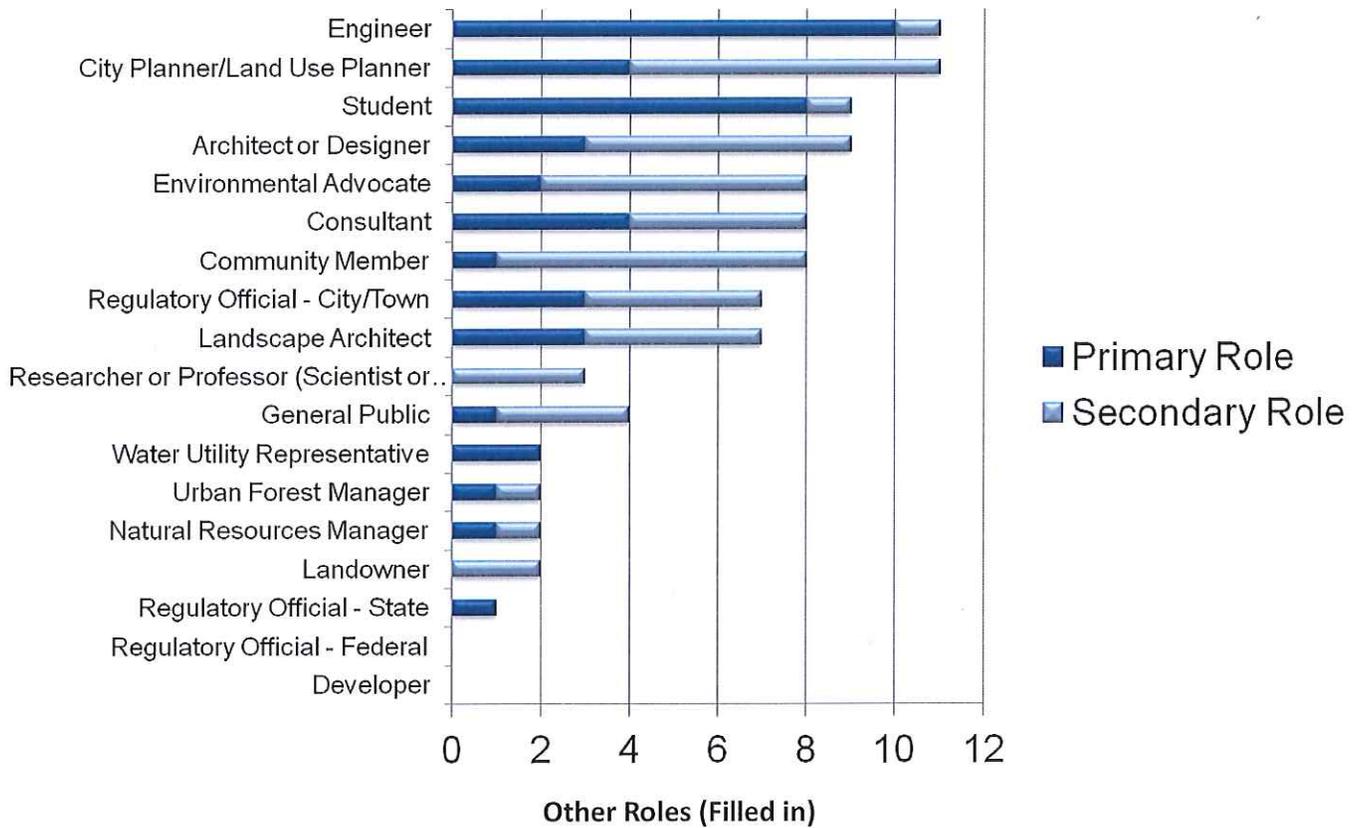
Topics of Interest to Participants

- 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

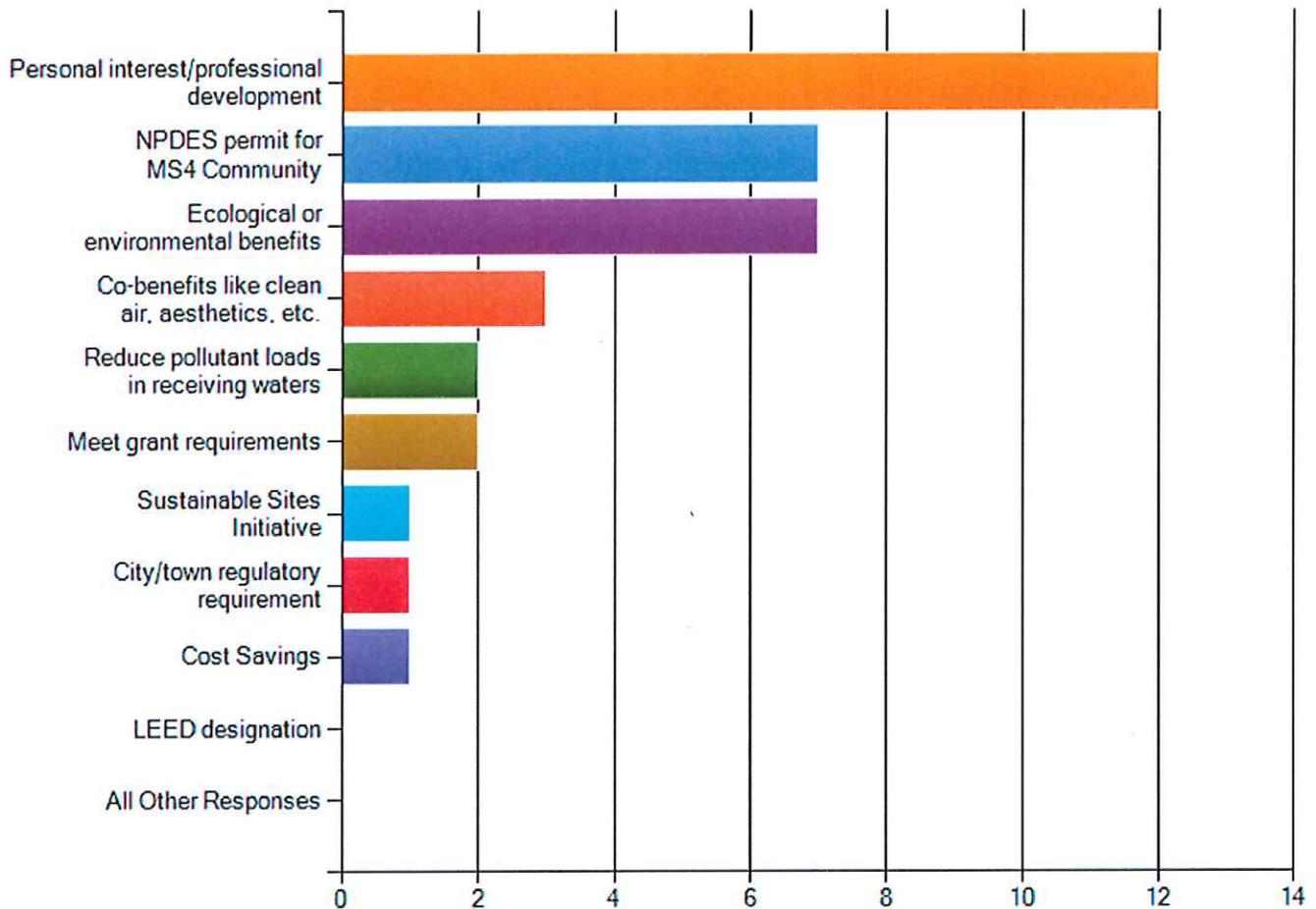
42 Participants (not including speakers)

72 People registered

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

Drivers

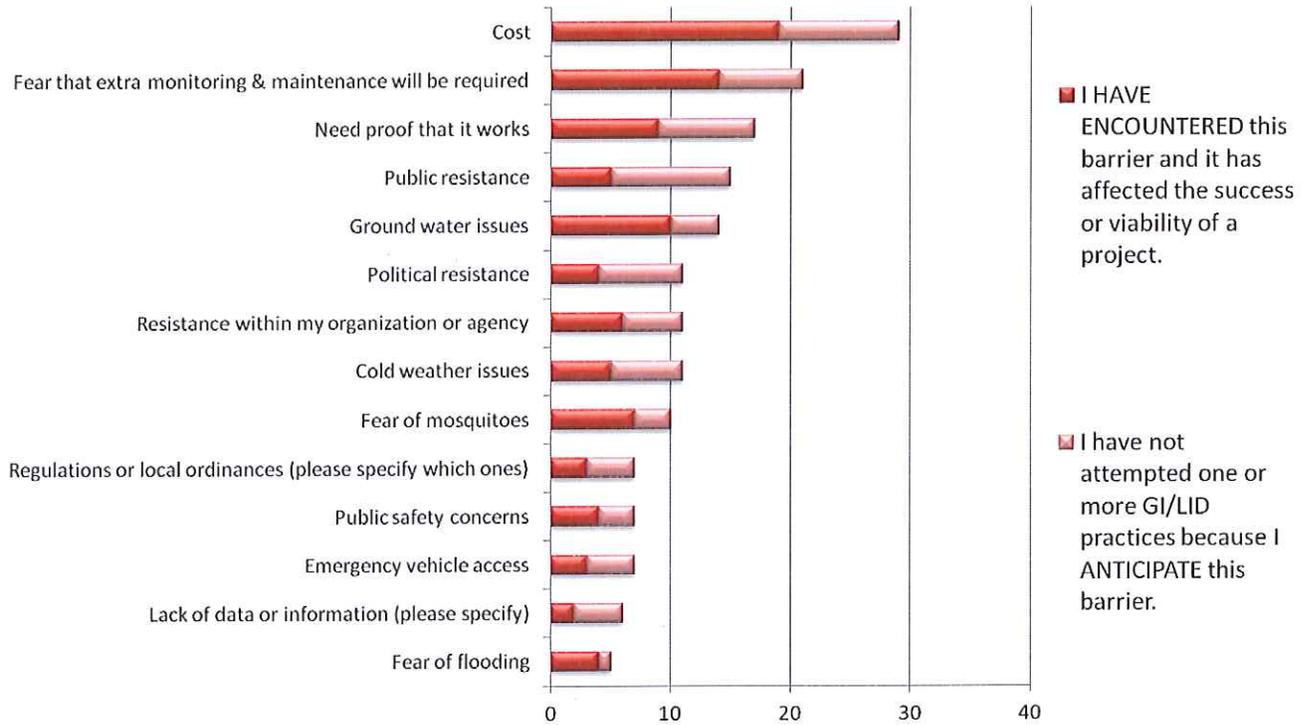
What is the primary reason that participants are interested in GI?LID?



- ◇ "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

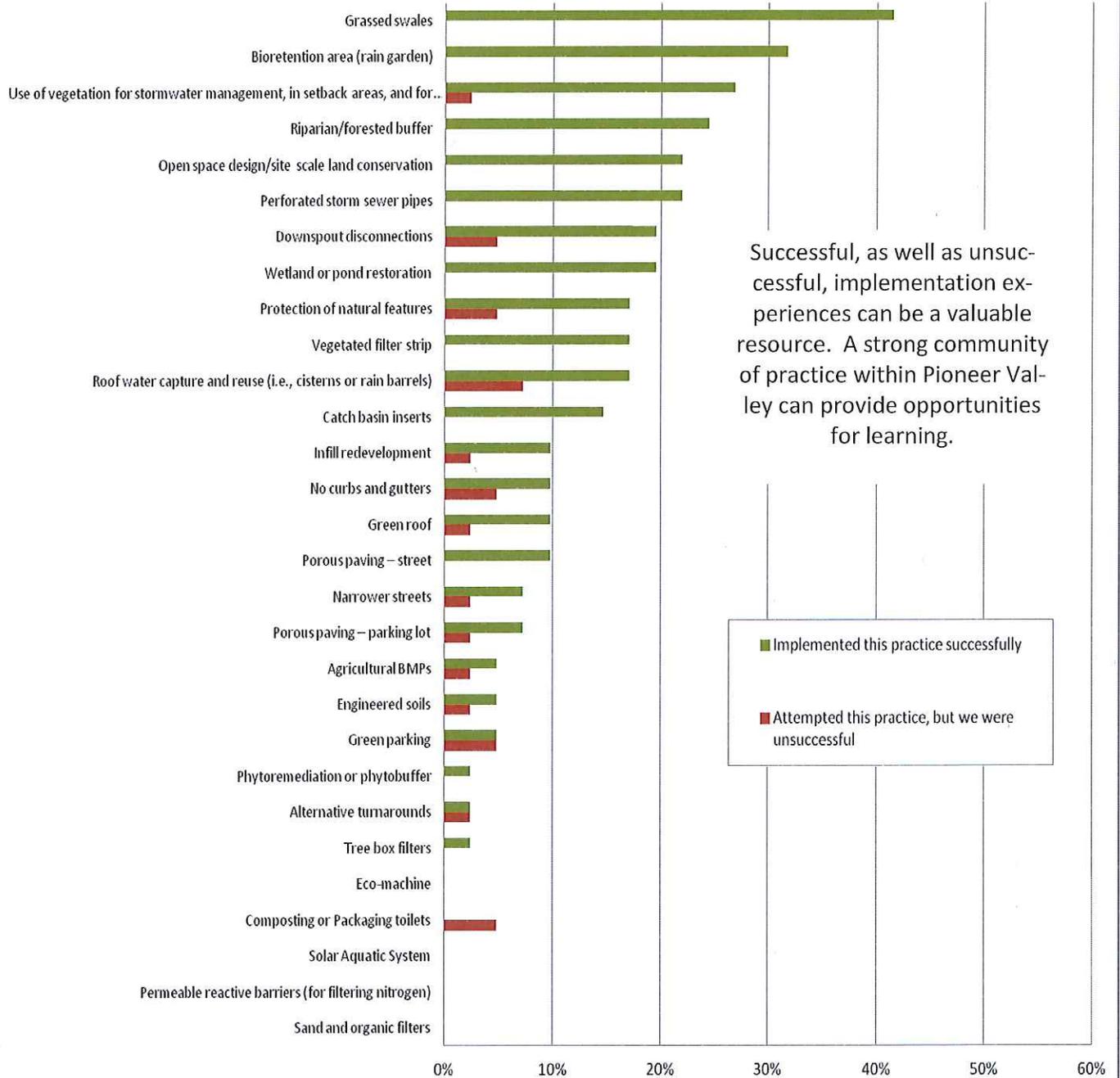
What is in the way?



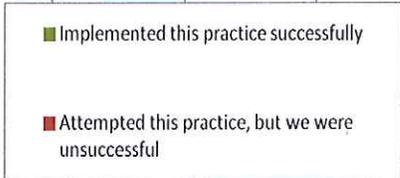
Other Fill-in

- ◇ 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

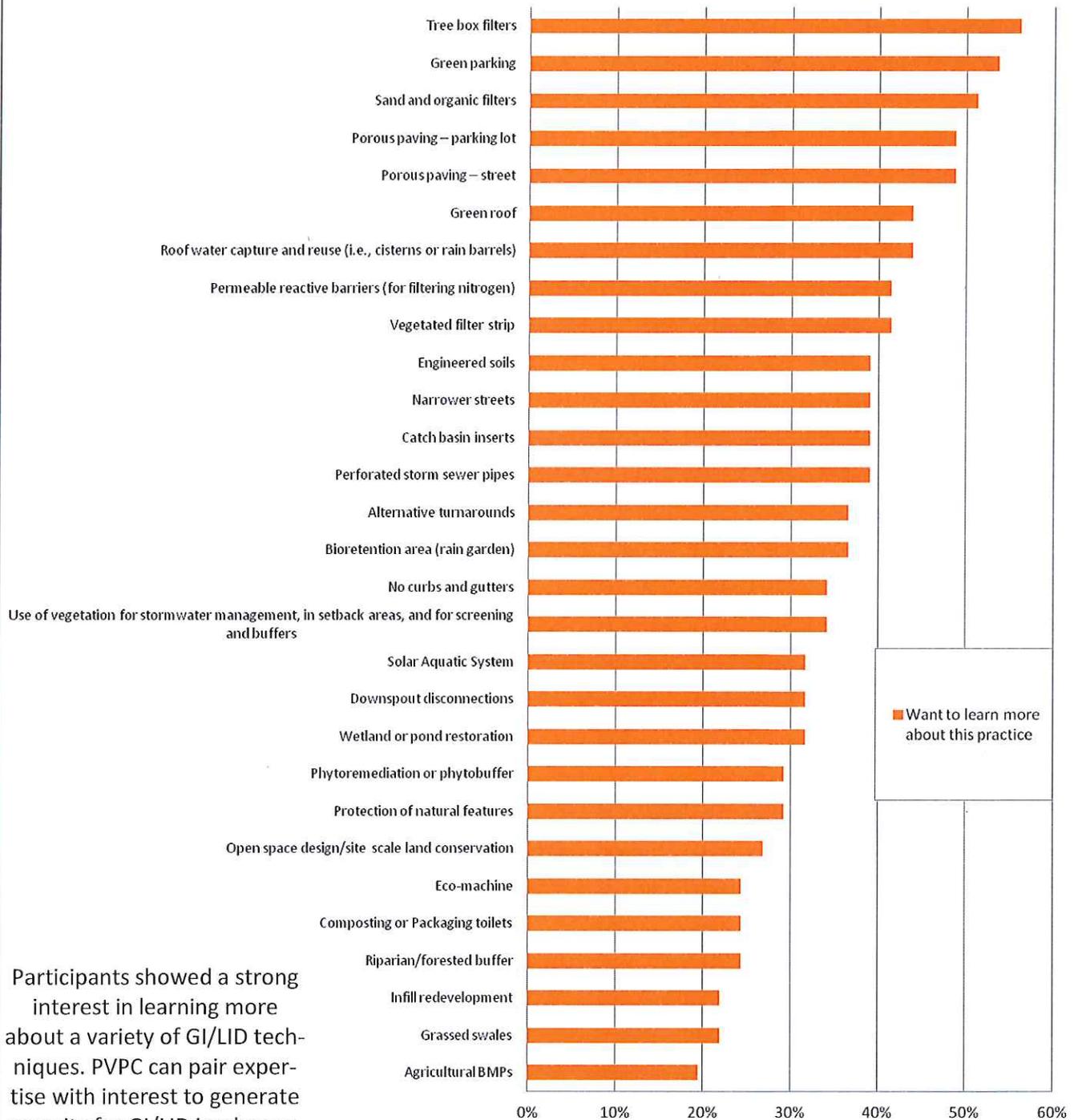
Implementation Success



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.

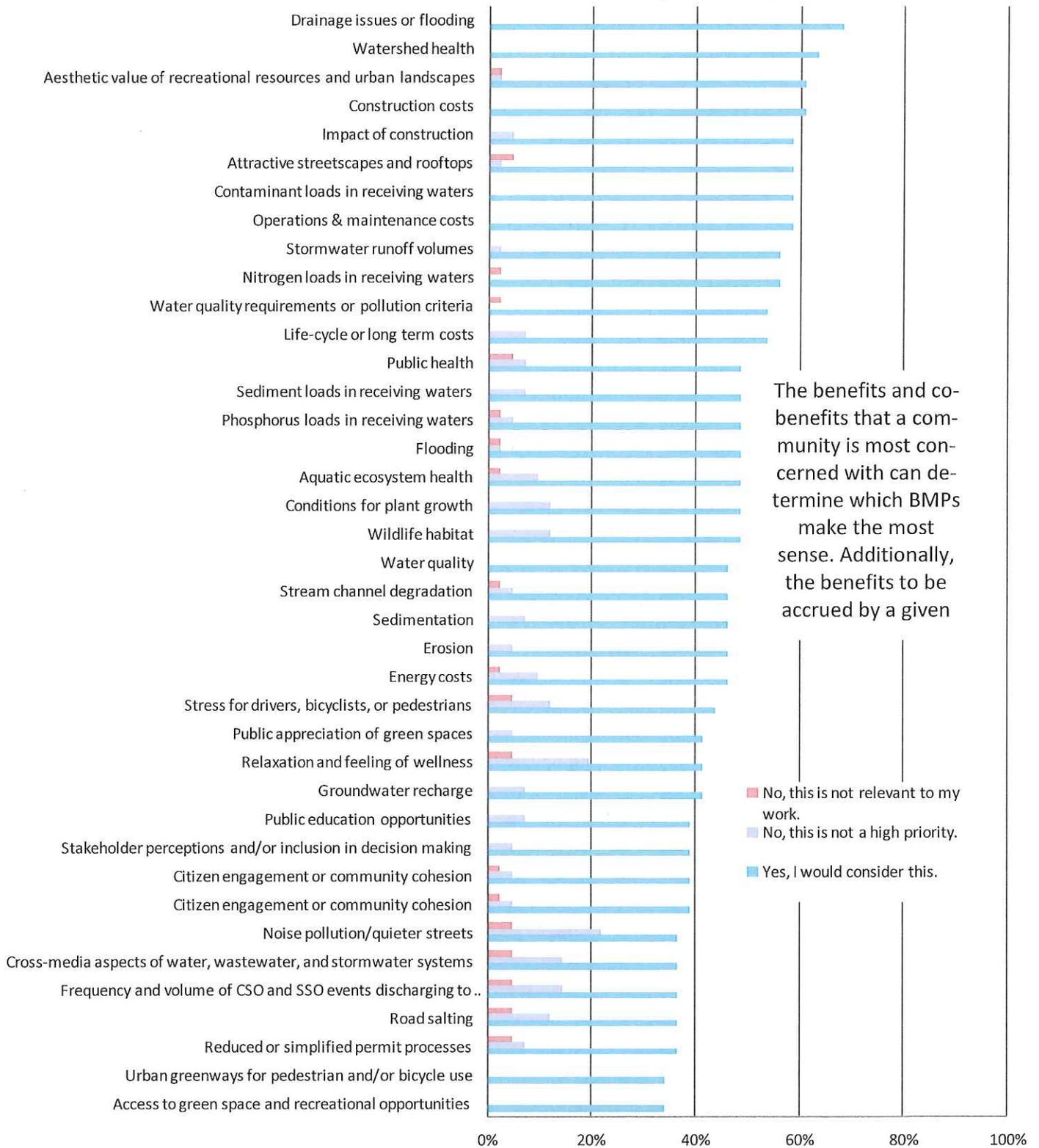


Interest in Management Practice

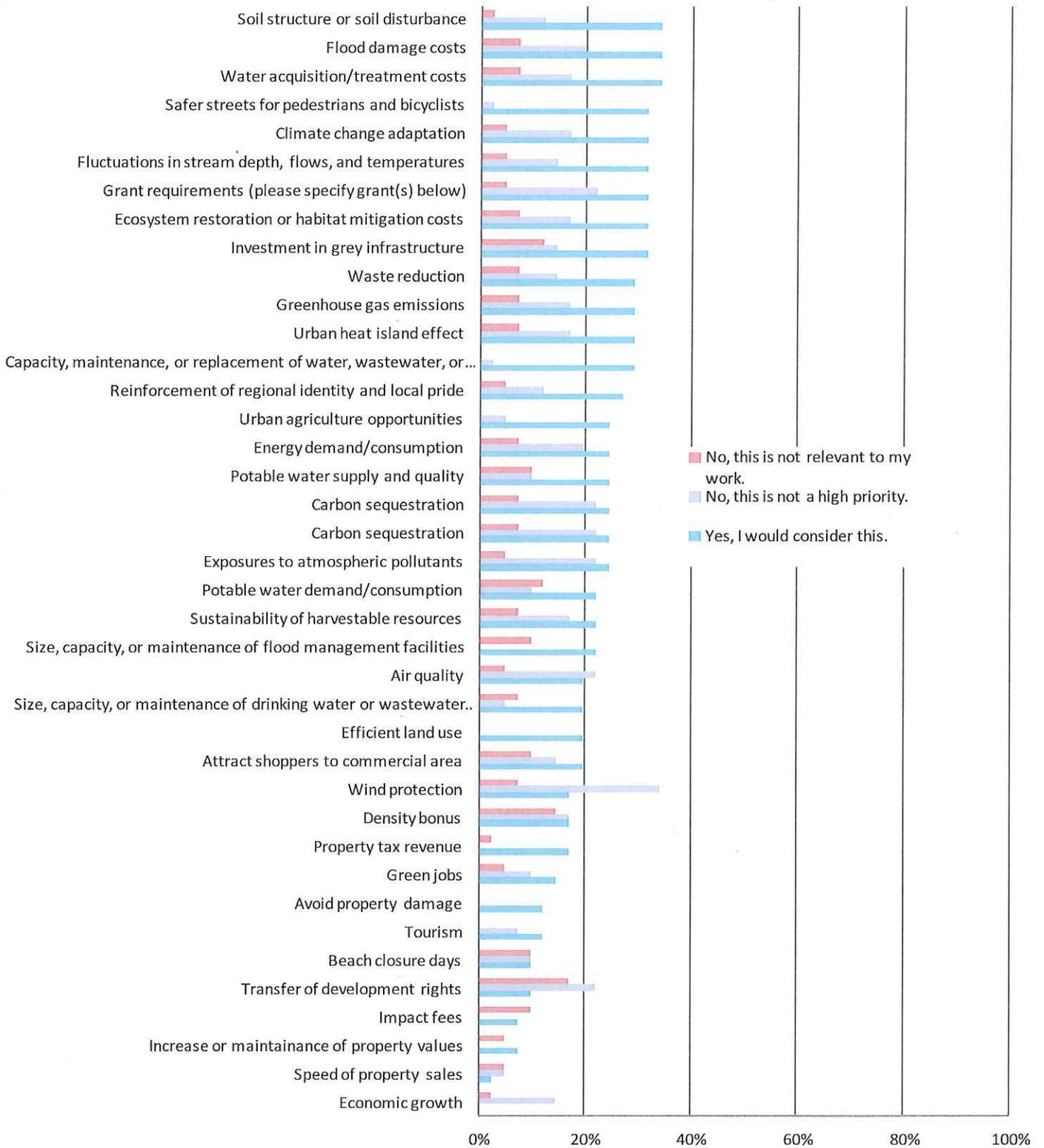


Participants showed a strong interest in learning more about a variety of GI/LID techniques. PVPC can pair expertise with interest to generate capacity for GI/LID implementation, maintenance, and cost reduction.

Priorities - Highest 39/78

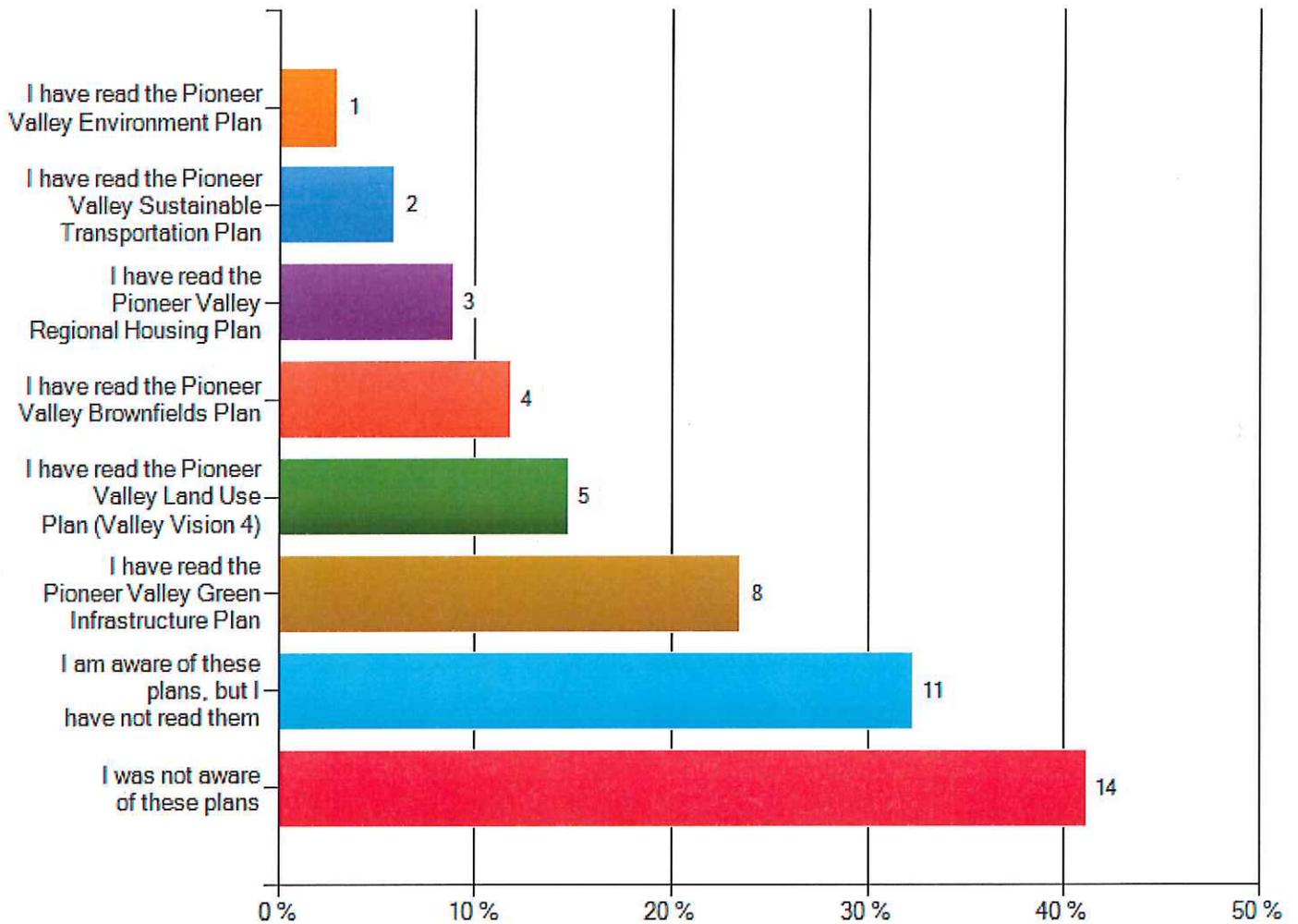


Priorities - Lowest 39/78



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

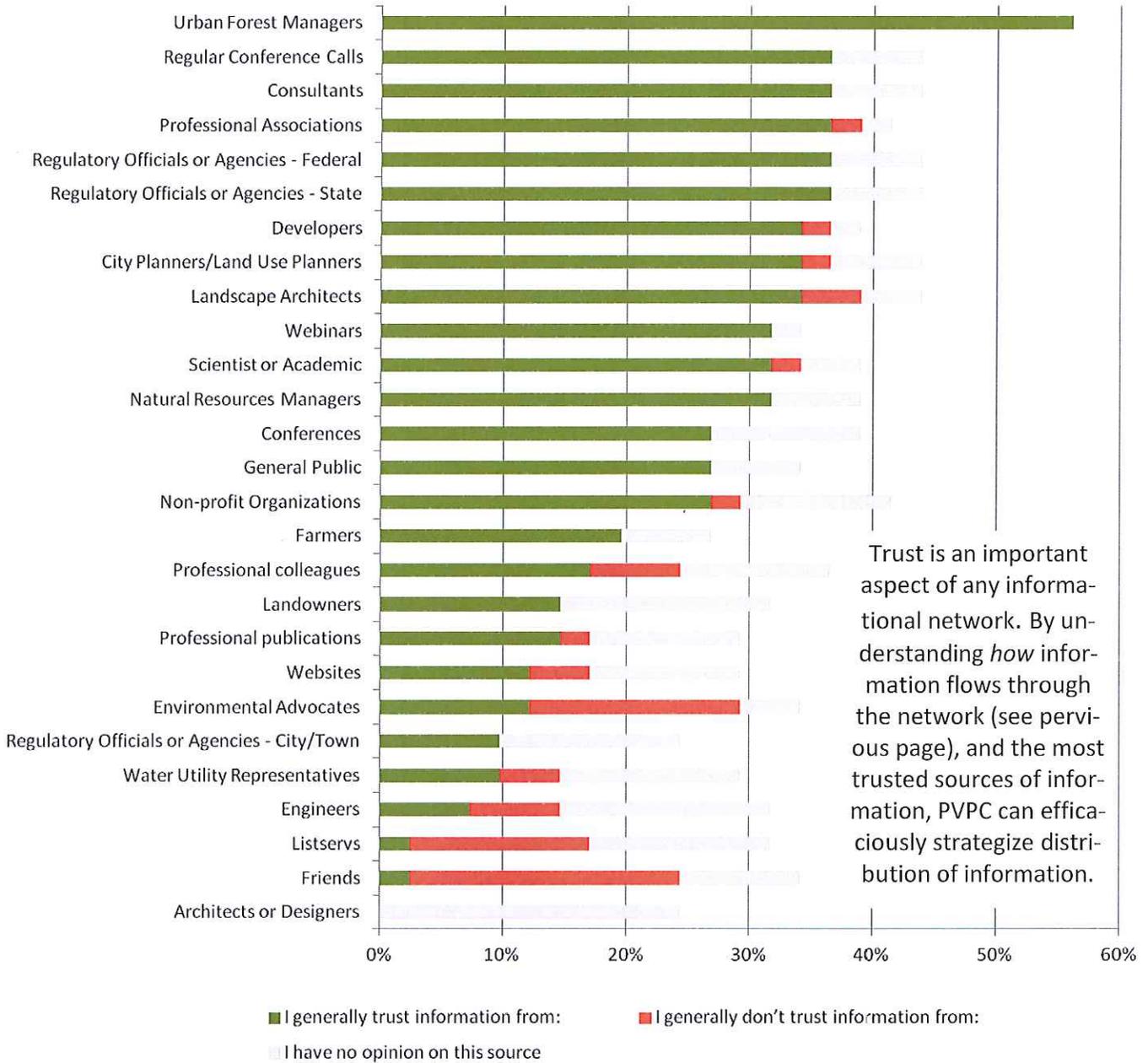
Missing Tools, Resources & Information

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.

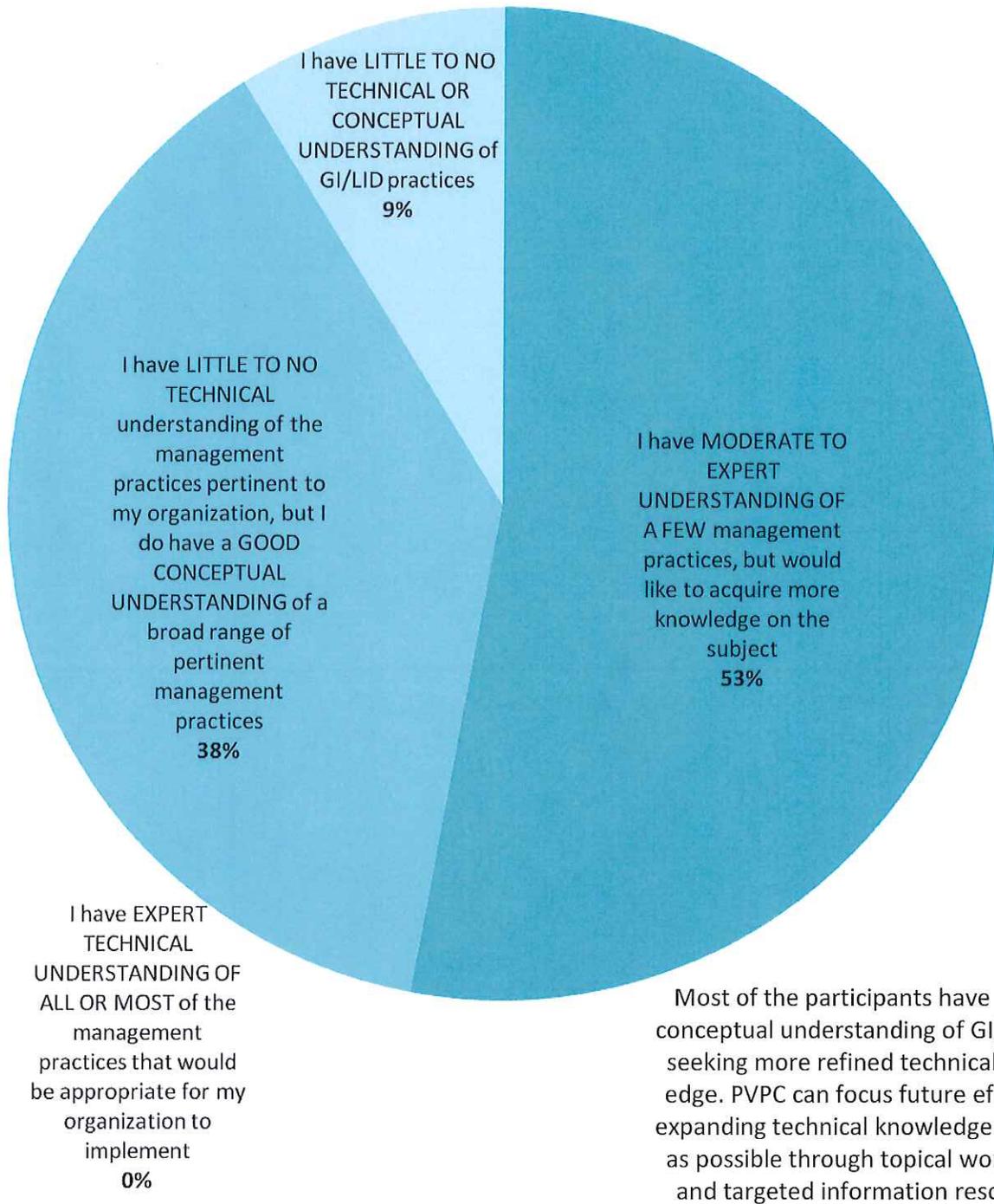
Trust

Participants' trust different sources of information differently



Familiarity

Technical & Conceptual Understanding of GI/LID



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
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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:

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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



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WESTERN MASS. DEEDS
Page F6



MORTGAGE RATES
Page F7



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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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Open Columbus Day 8-5

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.