Municipality/Organization: **Town of West Springfield**

EPA NPDES Permit Number: **MA041024**

MassDEP Transmittal Number: **W-035938**

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

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

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

Certification:

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

Signature: Edward Sullivan

Printed Name: Edward C. Sullivan

Title: Mayor

Date: 4-23-14

Part II. Self-Assessment

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

Items that are deficient are as follows:

BMP ID #	**BMP Description**	**Responsible Dept./Person Name**	**Measurable Goal(s)**	**Progress on Goal(s) – Permit Year 11** (Reliance on non-municipal partners indicated, if any)	**Planned Activities – Future Permit**
4A	Construction Site Runoff Ordinance	Planning Dept. Build Inspector	Eval Exist Regs Yr 1 Draft Revisions Yr 2 Propose for adoption in Year 3	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
4B	Erosion and Sediment Control Plan Review	Planning Dept.	Enforcement under existing Regulations Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
4C	Inspection Reporting	Conservation Commission	Enforcement under existing Regulations Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are under review by the Town Attorney.
5A	Post Construction Runoff Ordinance	Planning Dept.	Eval Exist Std – Yr 1 Draft Revision -Yr 2 Propose Adopt – Yr 3	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
5B	Construction Site Plan Review	Planning Dept.	Enforcement under existing Regulations Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.

5C	Stormwater System Maintenance Plan	Planning Dept.	Enforcement under existing Regulations Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.

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

1. Public Education and Outreach (Continued)

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

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Future Permit
2A	Adopt a Road	City Council	Support "Townwide Cleanup" activities – Years 1 to5	Annual "Earth Day Cleanup" activities utilize volunteer groups who help with the cleanup. These groups go along brooks and streams and remove litter and other debris.	The Town will continue to sponsor "Earth Day Cleanup Activities".
Revised					
2B	Adopt a Stream	DPW	Maintain Signage identifying stream names sponsored by volunteer groups – Years 1 to 5	During "Earth Day Cleanup" volunteers check the signs that identify the names of streams. The signs are replaced if they are damaged.	The Town will continue to sponsor "Earth Day Cleanup Activities".
Revised					
2C	Attitude Surveys	DPW	Include Stormwater Survey on Website – Years 2 & 5	West Springfield is working with the Connecticut River Stormwater Committee.	The results of the Attitude Survey are posted on the DPW Website.
Revised					
2D	Community Hotline	DPW	Place DPW phone number on Town Website for reporting of illicit discharges – Years 1 to 5	This BMP has been implemented with the assistance of our Computer Department.	Continue to post the Emergency Phone Numbers on the Town's Website.
Revised					
2E	Storm Drain Stenciling	DPW	Recruit volunteers for stenciling anticipated 100 catchbasins per yr	Fausey School Environmental Awareness. Curb Markers installed in the parking lot at the Middle School.	The town will continue to solicit volunteers to install curb markers at catch basins.
Revised					

2. Public Involvement and Participation (Continued)

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 – Future Permit
2F	Water Quality Monitoring	DPW	Visual Inspection of priority outfalls by volunteers, 10 per yr (Years 2 & 5)	Field inspected 100% of the known 272 mapped outfalls by Tighe & Bond Consulting Engineers	Continue monitoring of water quality in streams and brooks
Revised					
2G	Watershed Committee	WRA	Support Westfield River Association, inform of DPW activities (Year 1 to 5)	The Town of West Springfield supports the activities of the Westfield River Watershed Association in cleaning up of the town's riverbanks.	The Town of West Springfield will continue to support the Westfield Watershed Association.
Revised					
2H	Hazardous Waste Collection	DPW	Publicize annual event collecting Universal Wastes (Year 1 to 5)	Hazardous Waste Collection was conducted on September 28, 2013. 351 Vehicles registered 3.8 tons of hazardous waste collected 82 tons of electronics recycled 1,025 gallons Used motor oil 95 gallons Anti-freeze 25 propane tanks recycled 48 auto batteries recycled 1,248 ft of fluorescent bulbs collected	The Town of West Springfield will continue to conduct Hazardous Waste Collections in the early fall of each year.
Revised					
2I	Wetlands Planting Remove invasives	DPW	Recruit volunteers for wetlands improv-ments (Year 1 to 5)	Local volunteer groups help with Earth Day Cleanup. Debris is typically removed from local wetland habitats. Earth Day Cleanup was organized by DPW and Conservation Commission and picked up tons of litter, bulk waste and tires, some with metal rims	West Springfield will continue to support local conservation groups thru town-sponsored activities.
Revised					

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

3. Illicit Discharge Detection and Elimination (Continued)

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

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Future Permit
4A	Construction Site Runoff Ordinance	Planning Dept. Build Inspector	Eval Exist Regs Yr 1 Draft Revisions Yr 2 Propose for adoption in Year 3	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
Revised					
4B	Erosion and Sediment Control Plan Review	Planning Dept.	Enforcement under existing Regulations Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
Revised					
4C	Inspection Reporting	Conservation Commission	Enforcement under existing Regulations Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
Revised					

5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Future Permit
5A	Post Construction Runoff Ordinance	Planning Dept.	Eval.Exst Stand – Yr 1 Draft Revision – Yr 2 Propose Adopt - Yr 3	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
Revised					
5B	Construction Site Plan Review	Planning Dept.	Enforcement under existing Regs Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
Revised					
5C	Stormwater System Maintenance Plan	Planning Dept.	Enforcement under existing Regs Yr 1-2 Enforcement under adopted ordinance Years 3 to 5	Municipal Oversight Regulations are currently in draft form.	Municipal Oversight Regulations are to be presented to the Town Council for adoption.
Revised					

6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Future Permit
6A	Municipal Maintenance Activity Program	DPW	Evaluate and draft additional policies as necessary, Year 1. Comply, Yrs 2-5	DPW maintains 17 parks and ball fields – trash is picked up on a daily basis. Vehicle fleets inspected monthly and oil changes done on a regular basis Catch basins are cleaned as there is a route established to clean them all.	Continue the effort established in previous years
Revised					
6B	Employee Training	DPW	Initial Good Housekeeping training Year 1. Annual Refresher Yrs 2-5	Employees are trained in the Municipal Maintenance Activity Program.	Continue the effort established in previous years
Revised					
6C	Catch basin Program	DPW	Clean 50% of Catch basins per year	100% of the catch basins were cleaned this year. Collected materials were used as ground cover at the Springfield Yard Waste Composting Facility	Continue the effort established in previous years
Revised					
6D	Street Sweeping	DPW	Sweep Streets once per year and Business Districts monthly, spring thru fall Yrs 1-5	The DPW swept the entire town once this year. Downtown and main arterial routes were swept an additional 4 times. Street sweepings were collected for use as ground cover at the Springfield Yard Waste Composting Facility.	Continue the effort established in previous years
Revised					
6E	Road Salt Program	DPW	Employee Training at Salt-Institute, Yr. 1 Investigate alternative chemicals Yrs 2-5	DPW is continually investigating alternative snow and ice control techniques.	Continue the effort established in previous years
Revised					

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

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Future Permit
6F	Lawncare and Pest Control	DPW	Train 2 Employees for application of controls Yr 1 Implement Practices Yrs 2-5	Continue the effort established in previous years.	Continue the effort established in previous years
Revised					
6G	Stormwater Pollution Prevention Plan / MSGP at the City Garage (Town Yard)	DPW	Implementation of SWPPP, Year 1. Comply, yrs 2-5	4 bays of the existing DPW Garage have been reconstructed for use as state of the art repair facility. The town has abandoned plans to build a new facility.	DONE
Revised					
6H	Used Oil Recycling	DPW	Continue collection and recycling, Years 1-5.	In 2013 the town collected 1,025 gallons of used motor oil during it's household hazardous waste collection.	Continue to collect and recycle used motor oil during household hazardous waste collection.
Revised					
6I	Illegal Dumping	DPW	Pickup of dumped waste, Yrs 1-5	The DPW continues to pick up illegally dumped materials in the following areas: Agawam Ave, Bear Hole Reservoir, Circuit Ave, Palmer Ave, Old Westfield Road and 7.2 miles of earthen dike. .	Continue with the effort established in previous years. Installation of a surveillance camera on Agawam Avenue to detect violators. Added additional street lights to discourage dumping.
Revised					

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

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Future Permit
7A	TMDL for the Connecticut River	DPW, Planning, Health, Bldg Departments	Completion of BMP's under all of the Six Minimum Control Categories	Refer to previous BMP's	
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

Part V. Program Outputs & Accomplishments (OPTIONAL)
(Since beginning of permit coverage unless specified otherwise by a **, which indicates response is for period covering April 1, 2013 through March 31, 2014)

Programmatic

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	N
Annual program budget/expenditures **	($)	$ 103,340
Total program expenditures since beginning of permit coverage	($)	$ 901,082
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)		General Fund

Education, Involvement, and Training

Estimated number of property owners reached by education program(s)	(# or %)	95%
Stormwater management committee established ***(Connecticut River Stormwater Committee)***	(y/n)	Y
Stream teams established or supported ***(Westfield River Watershed Association)***	(# or y/n)	Y
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	Y
Shoreline cleaned since beginning of permit coverage	(mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored **	(#)	1
▪ community participation **	(# or %)	351 vehicles
▪ material collected **	(tons or gal)	3.8 tons
School curricula implemented	(y/n)	Y

Legal/Regulatory

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

Mapping and Illicit Discharges

	(Preferred Units)	Response
Outfall mapping complete	(%)	100%
Estimated or actual number of outfalls	(#)	272
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	100%
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	100%
Outfalls inspected/screened **	(# or %)	
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	272
Illicit discharges identified **	(#)	
Illicit discharges identified (Since beginning of permit coverage)	(#)	9 very likely 19 maybe
Illicit connections removed **	(#); and (est. gpd)	
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	

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

Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	3
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	100%
Site inspections completed **	(# or %)	14
Tickets/Stop work orders issued **	(# or %)	0
Fines collected **	(# and $)	0
Complaints/concerns received from public **	(#)	1

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	100%
Site inspections (for proper BMP installation & operation) completed **	(# or %)	100%
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	Y
Low-impact development (LID) practices permitted and encouraged	(y/n)	Y

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr)	1 time/year
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	1 times/year
Qty of structures cleaned **	(#)	Approx 700
Qty. of storm drain cleaned **	(%, LF or mi.)	7.85 miles
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	227 tons
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	landfill

Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	($)	$ 55,932
• Hourly or per basin contract rate **	($/hr or $ per basin)	$39.77/hour
• Disposal cost**	($)	$ 0.00
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	0
• Vacuum truck(s) owned/leased	(#)	1
• Vacuum trucks specified in contracts	(y/n)	None
• % Structures cleaned with clam shells **	(%)	None
• % Structures cleaned with vactor **	(%)	100%

	(Preferred Units)	Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	1
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)	2
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	584 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Compost
Annual Sweeping Costs Repairs to Sweeper		$ 3,500.00
• Annual budget/expenditure (labor & equipment)** Operator & Truck - $41.54/hr	($)	N/A
• Hourly or lane mile contract rate ** No Contractual Services this year. Done in-house	($/hr. or ln mi.)	N/A
• Disposal cost**	($)	$ 0.00
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	1
• Vacuum street sweepers owned/leased	(#)	0
• Vacuum street sweepers specified in contracts	(y/n)	N
• % Roads swept with rotary brush sweepers **	%	100%
• % Roads swept with vacuum sweepers **	%	0

Reduction (since beginning of permit coverage) in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers *4 Ballfields x 4 applications*	(lbs. or %)	4,813 lbs
▪ Herbicides *By Contract 7.2 miles of earthen dike has vegetation control*	(lbs. or %)	2X
▪ Pesticides	(lbs. or %)	N/A
Integrated Pest Management (IPM) Practices Implemented	(y/n)	N

	(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% NaCl % $CaCl_2$ % $MgCl_2$ % CMA % Kac % KCl % Sand	45% 5% 50%
Pre-wetting techniques utilized **	(y/n or %)	N
Manual control spreaders used **	(y/n or %)	N
Zero-velocity spreaders used **	(y/n or %)	N
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	0%
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	0%
% of salt/chemical pile(s) covered in storage shed(s)	(%)	0%
Storage shed(s) in design or under construction	(y/n or #)	N
100% of salt/chemical pile(s) covered in storage shed(s) by May 2011	(y/n)	N

Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	N/A
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	Y
• Treatment units induce infiltration within 500-feet of a wellhead protection area	# or y/n	N

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

The Town of West Springfield has mapped the entire stormwater system and inspected 272 outfalls for the presence of non-storm water discharges. The town has also mapped the remaining stormwater systems and produced a complete GIS map. Information gathered from outfall testing will allow the town to detect, locate, and eliminate illicit discharges from the storm water system. The system-wide stormwater maps will help provide the town the ability to trace pipe connections upstream of the outfall being investigated to help determine the source of pollutants. The town does not have a finalized Illicit Discharge Plan, as we anticipate that there may be some revisions once comprehensive inspections of outfalls is completed.

In addition to mapping, the town has started a program to clean and inspect all of the storm drain pipes. We will be conducting a video inspection of the entire storm system, including pipes, catch basins and manholes. This program will enable the Town to find illicit connections and sources of pollution. Priority will be given to streets that are candidates for paving or reconstruction.

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

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 Infrastrucutre, 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 males 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

Catalyst for Regional Progress

PVPC

Green Infrastructure/Low Impact Development Workshop

June 13, 2013

Pioneer Valley Planning Commission

US Environmental Protection Agency Region 1

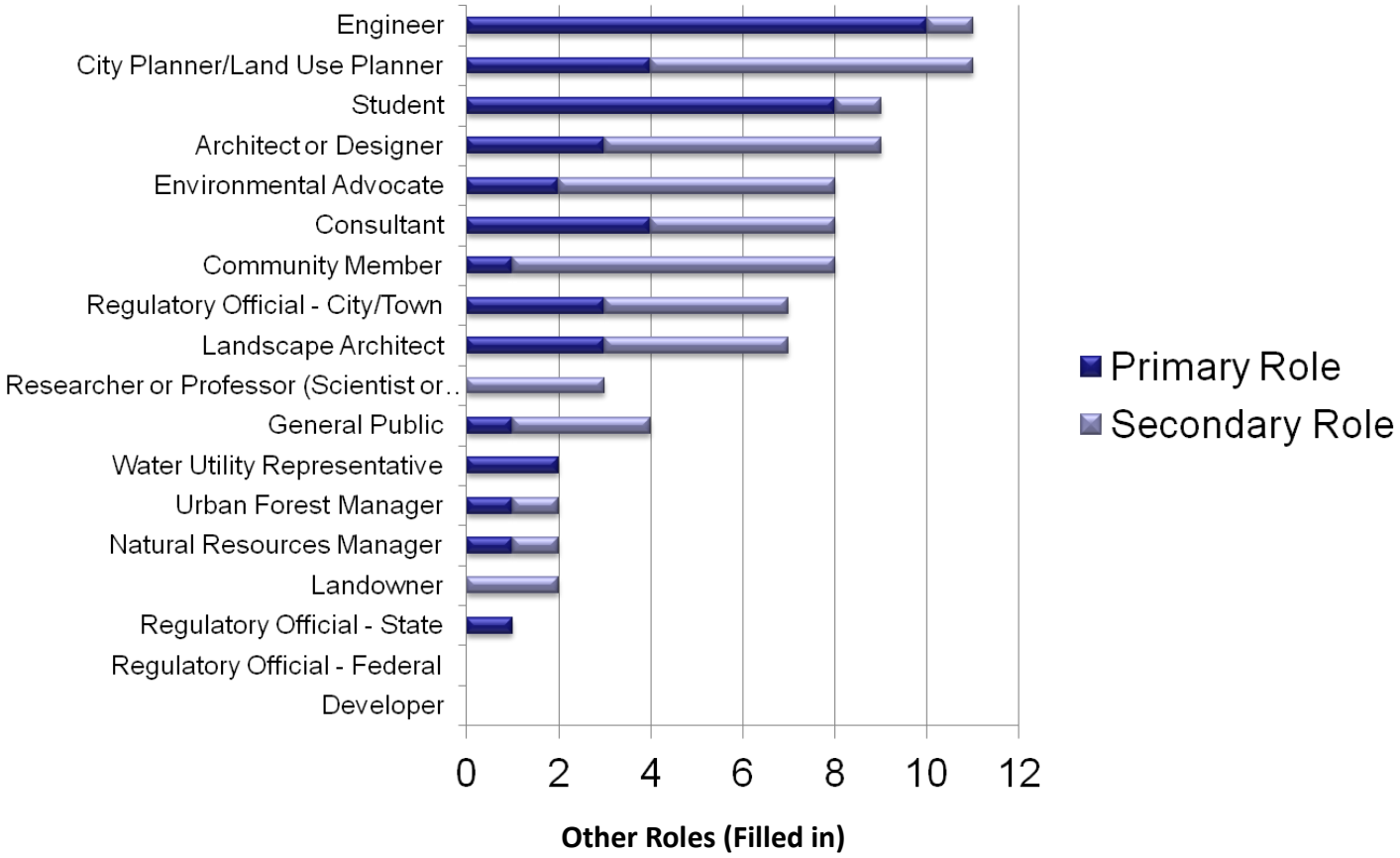
US Environmental Protection Agency, Office of Research & Development

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	Next Steps
• CSO Mitigation	⇒ 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, Hollyoke, and Springfield.
• Meeting MS4/NPDES permit requirements	⇒ Like many communities, PVPC is in a holding pattern in anticipation of the new MS4 regulations.
• Cost	⇒ 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
• Operations & Maintenance	⇒ O&M presentations at the workshop were one example of PVPC's ongoing efforts to supply practitioners with the technical information that they need.
• Removing or navigating state/federal regulations & problematic zoning or local code issues that can be an impediment to GI/LID implementation	⇒ 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.
• Proof that a given BMP works; avoiding costly mistakes	⇒ 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.
• Resource area/library of local projects • Options for residential BMPs	⇒ 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



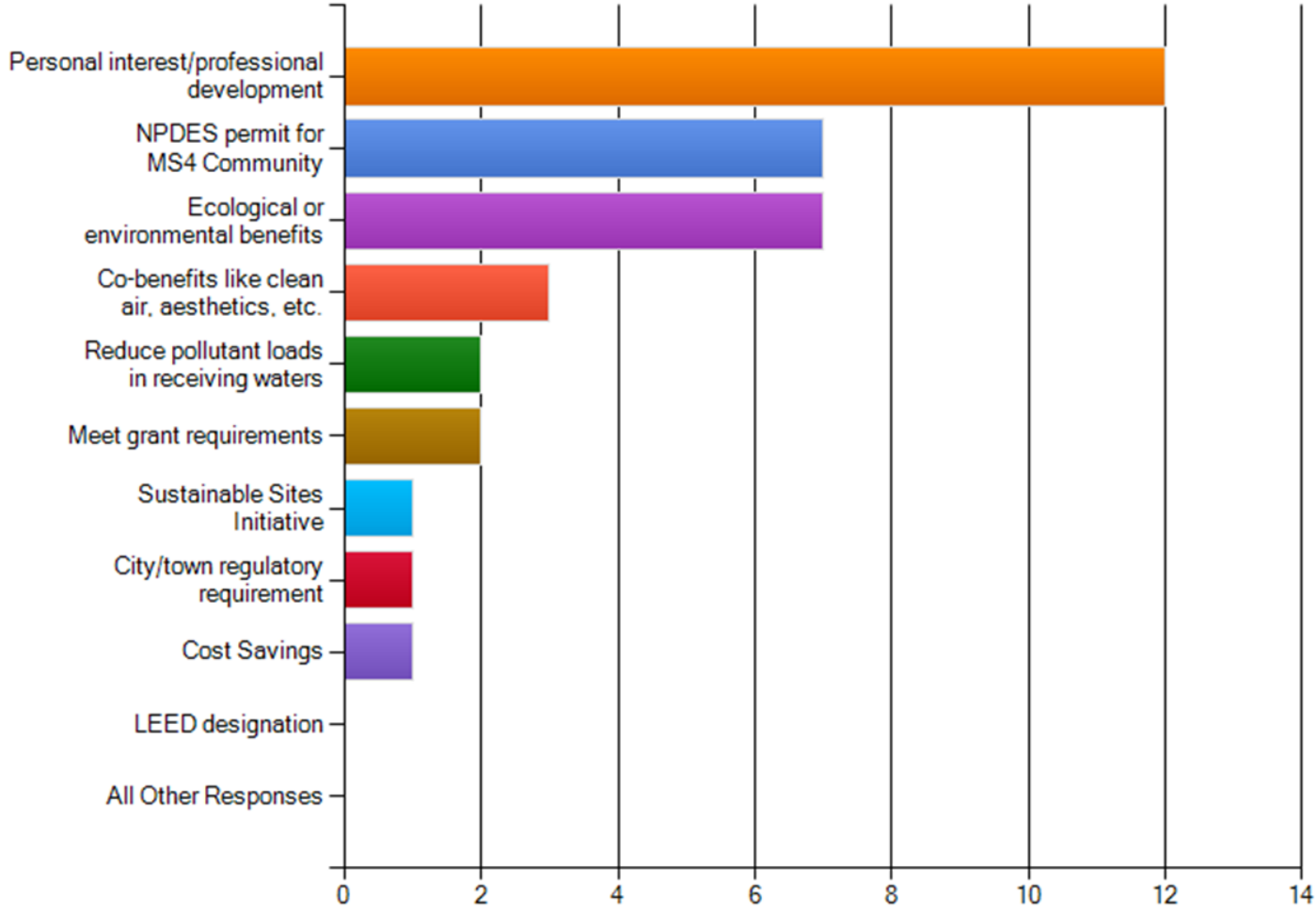
- Tree warden, parks,commons, cemetries, Athletic fields, pools Division Director
- Ecological Landscape Designer (self-employed, Northampton) and part-time Project Designer (Green Infrastructure Planning) for an engineering firm in Boston (Nitsch Engineering, Inc.)
- I am a community volunteer for the 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.

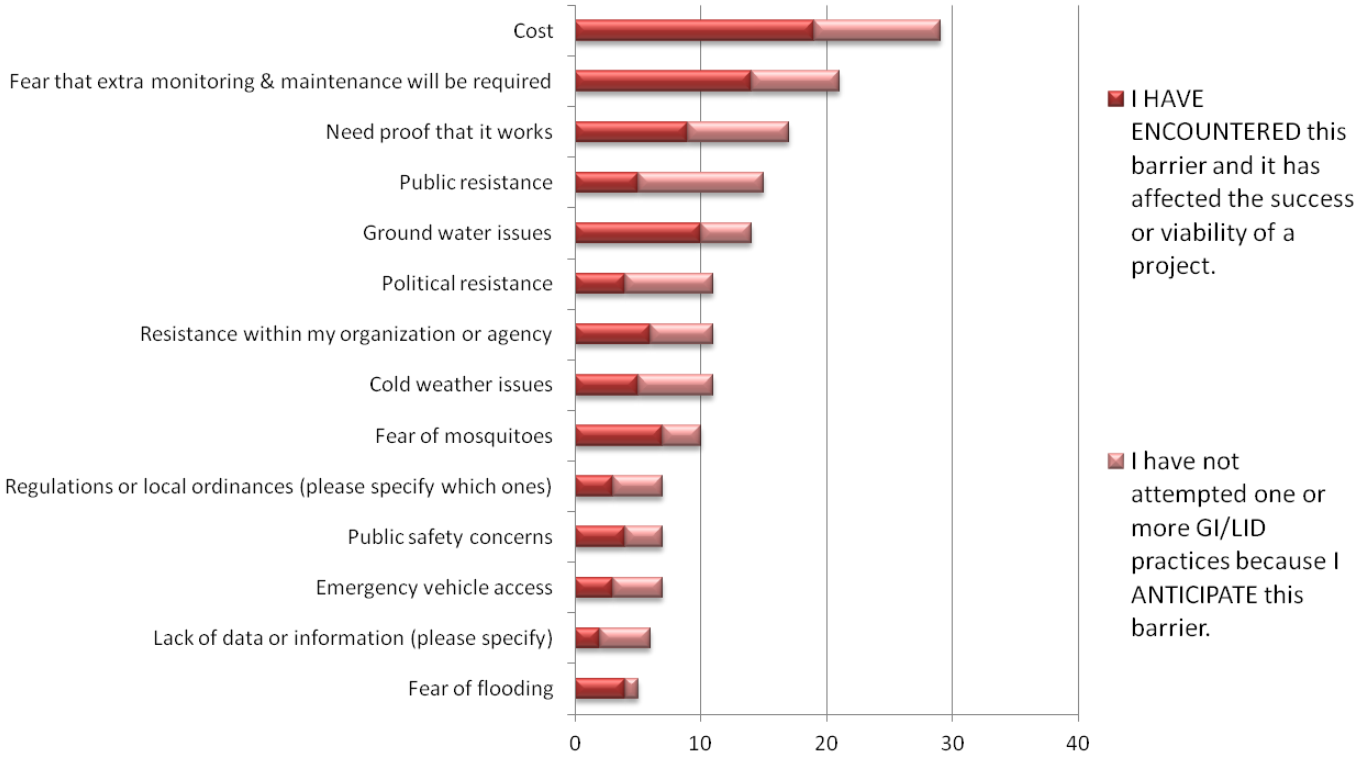
Drivers

What is the primary reason that participant 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.”

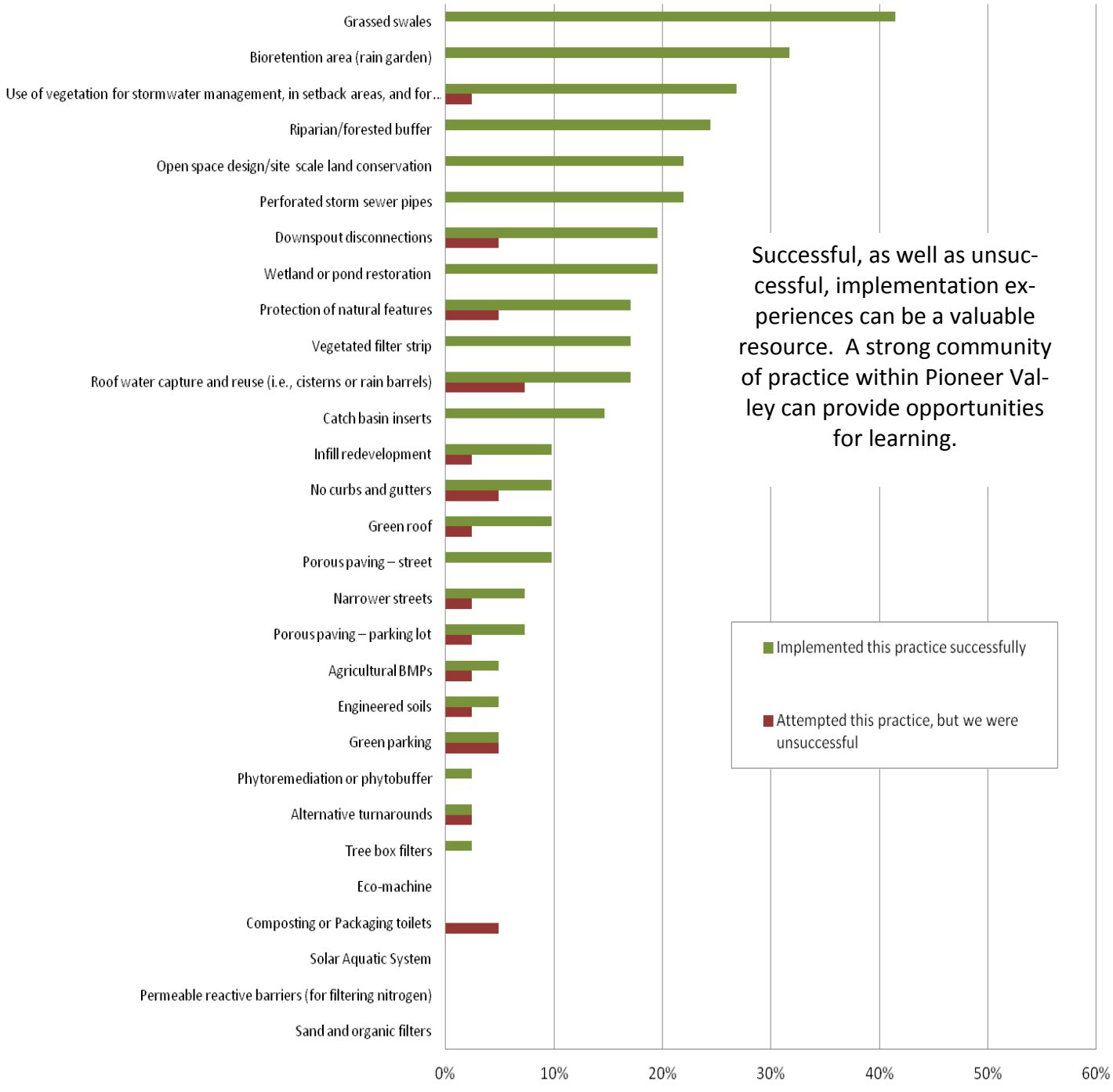
Barriers
What is in the way?



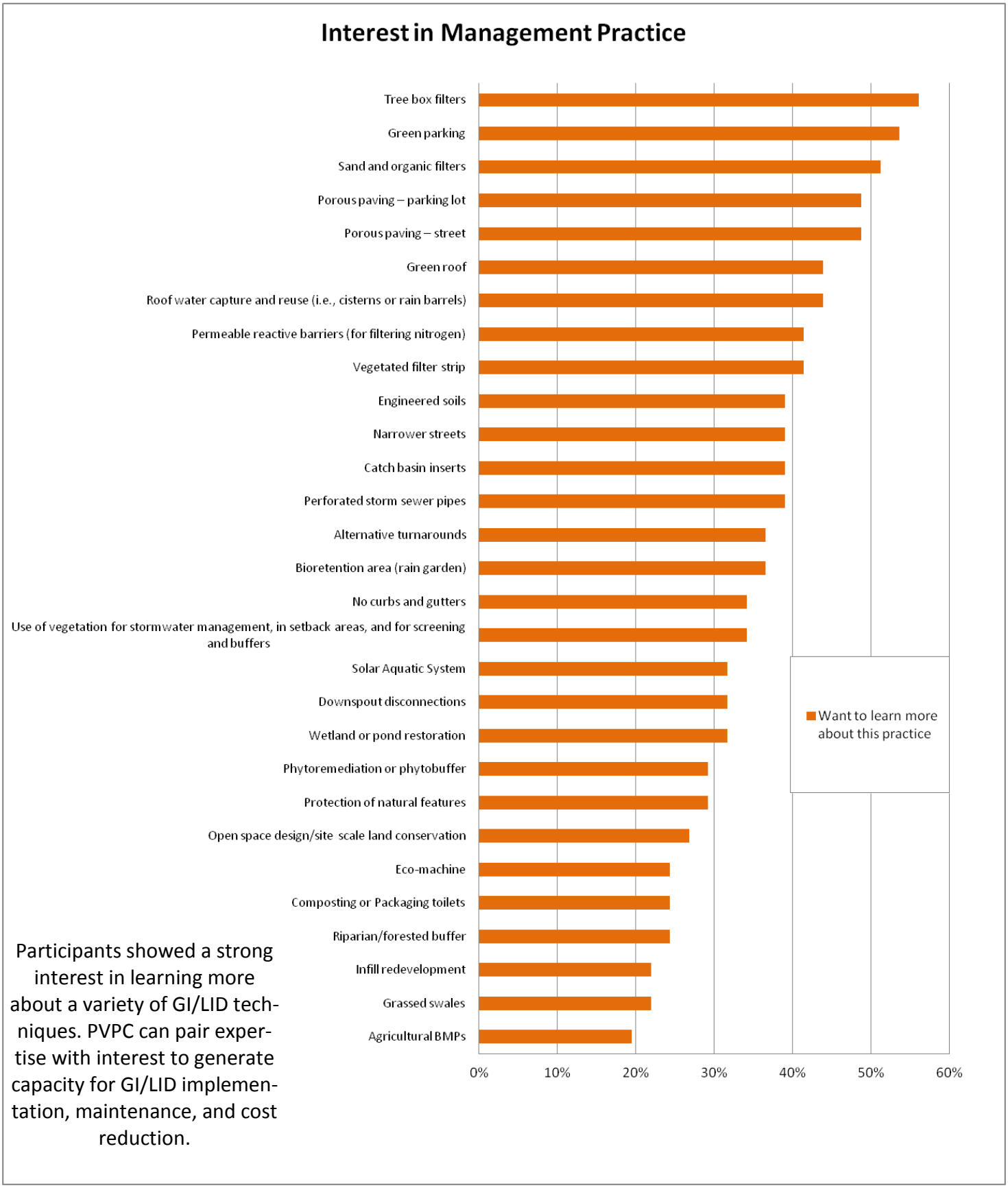
Other Fill-in

- 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

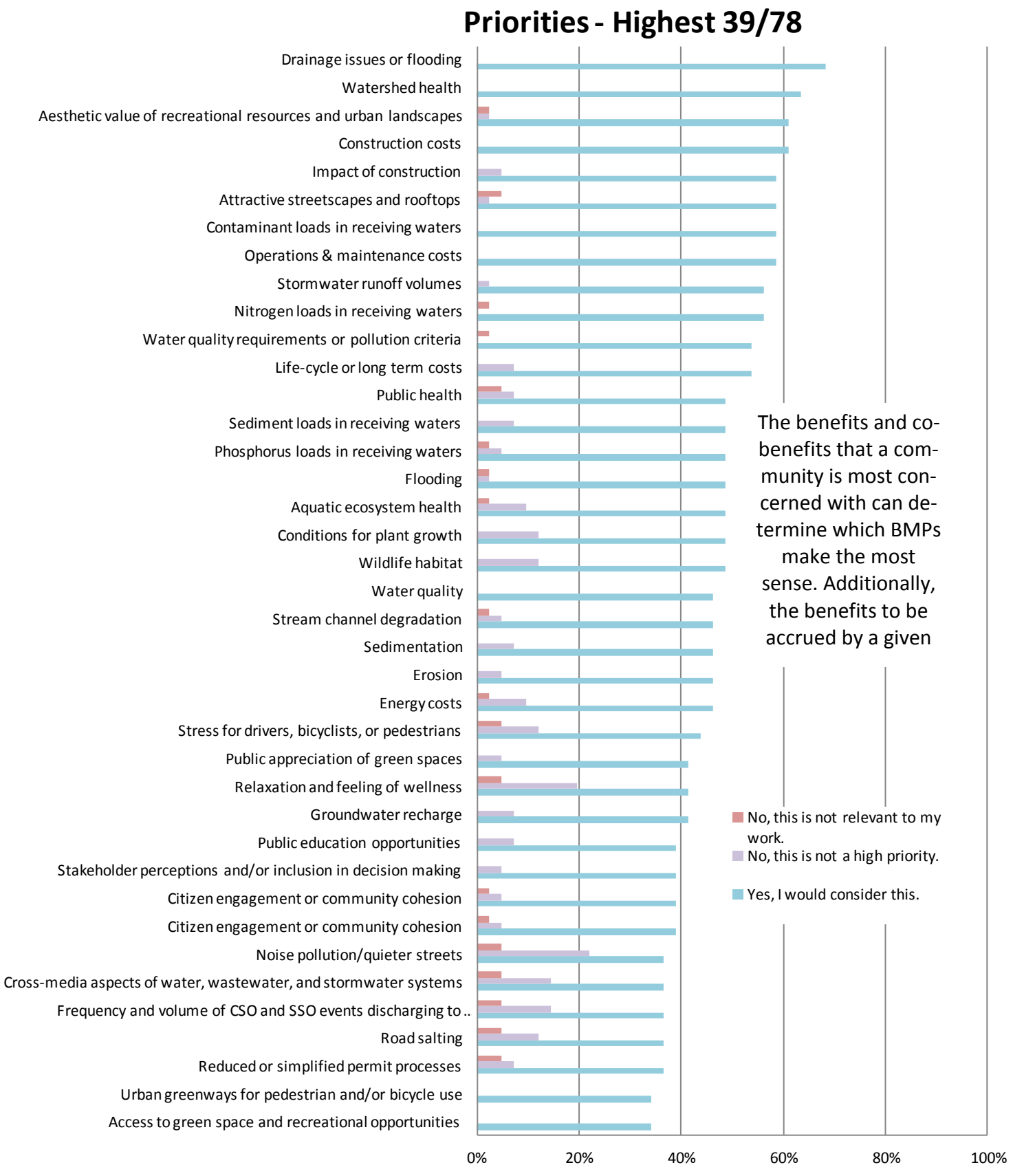
Implementation Success

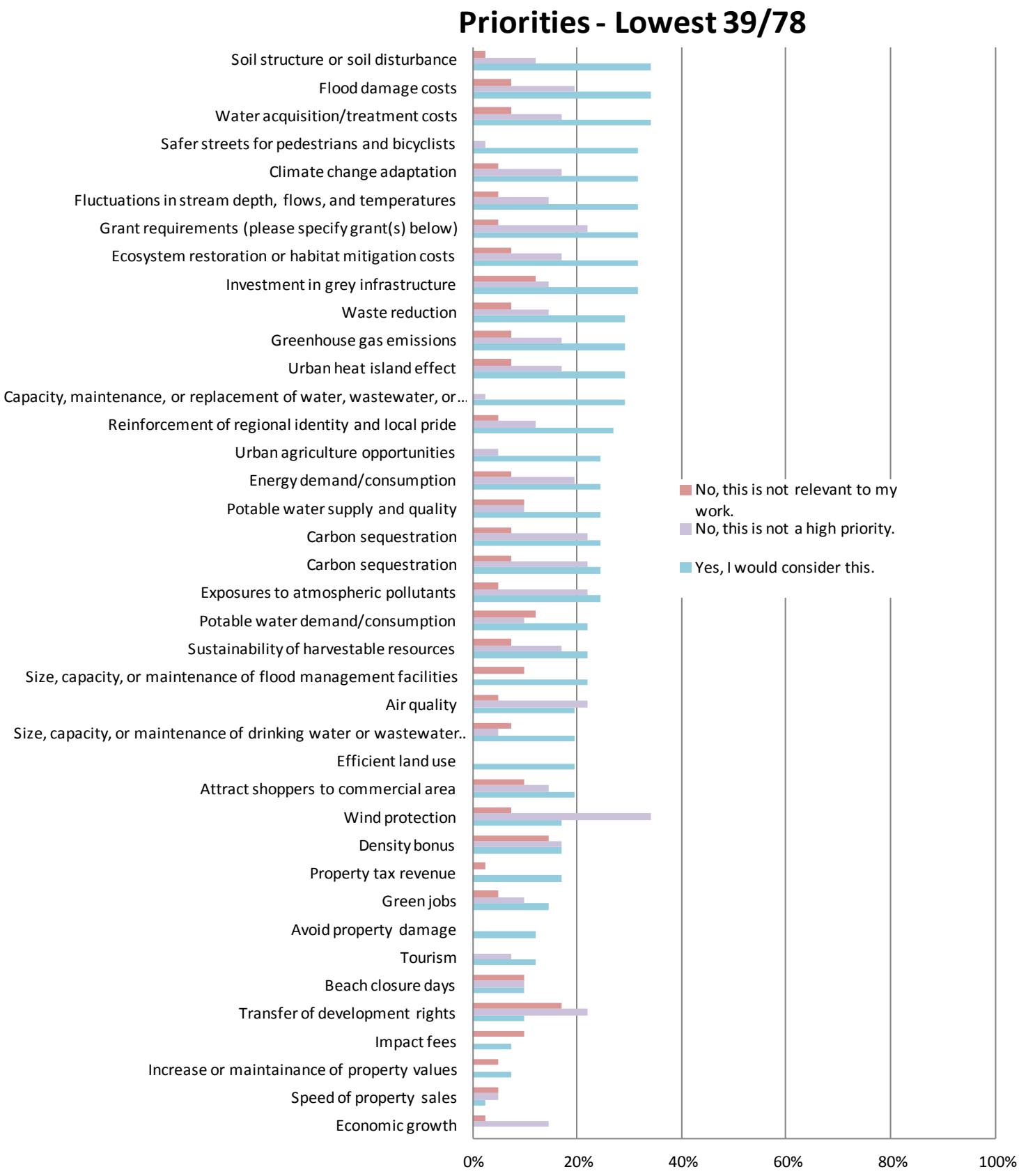


Successful, as well as unsuccessful, implementation experiences can be a valuable resource. A strong community of practice within Pioneer Valley can provide opportunities for learning.



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
Drainage issues or flooding
Watershed health
Aesthetic value of recreational resources and urban landscapes
Construction costs
Impact of construction
Attractive streetscapes and rooftops
Contaminant loads in receiving waters
Operations & maintenance costs
Stormwater runoff volumes
Nitrogen loads in receiving waters
Water quality requirements or pollution criteria
Life-cycle or long term costs
Public health
Sediment loads in receiving waters
Phosphorus loads in receiving waters
Flooding
Aquatic ecosystem health
Conditions for plant growth
Wildlife habitat
Water quality
Stream channel degradation
Sedimentation
Erosion
Energy costs
Stress for drivers, bicyclists, or pedestrians
Public appreciation of green spaces
Relaxation and feeling of wellness
Groundwater recharge
Public education opportunities
Stakeholder perceptions and/or inclusion in decision making
Citizen engagement or community cohesion
Citizen engagement or community cohesion
Noise pollution/quieter streets
Cross-media aspects of water, wastewater, and stormwater systems
Frequency and volume of CSO and SSO events discharging to ..
Road salting
Reduced or simplified permit processes
Urban greenways for pedestrian and/or bicycle use
Access to green space and recreational opportunities
0%
20%
40%
60%
80%
100%
The benefits and co-benefits that a community is most concerned with can determine which BMPs make the most sense. Additionally, the benefits to be accrued by a given
No, this is not relevant to my work.
No, this is not a high priority.
Yes, I would consider this.


Priorities - Lowest 39/78
Soil structure or soil disturbance
Flood damage costs
Water acquisition/treatment costs
Safer streets for pedestrians and bicyclists
Climate change adaptation
Fluctuations in stream depth, flows, and temperatures
Grant requirements (please specify grant(s) below)
Ecosystem restoration or habitat mitigation costs
Investment in grey infrastructure
Waste reduction
Greenhouse gas emissions
Urban heat island effect
Capacity, maintenance, or replacement of water, wastewater, or...
Reinforcement of regional identity and local pride
Urban agriculture opportunities
Energy demand/consumption
Potable water supply and quality
Carbon sequestration
Carbon sequestration
Exposures to atmospheric pollutants
Potable water demand/consumption
Sustainability of harvestable resources
Size, capacity, or maintenance of flood management facilities
Air quality
Size, capacity, or maintenance of drinking water or wastewater..
Efficient land use
Attract shoppers to commercial area
Wind protection
Density bonus
Property tax revenue
Green jobs
Avoid property damage
Tourism
Beach closure days
Transfer of development rights
Impact fees
Increase or maintainance of property values
Speed of property sales
Economic growth
No, this is not relevant to my work.
No, this is not a high priority.
Yes, I would consider this.
0%
20%
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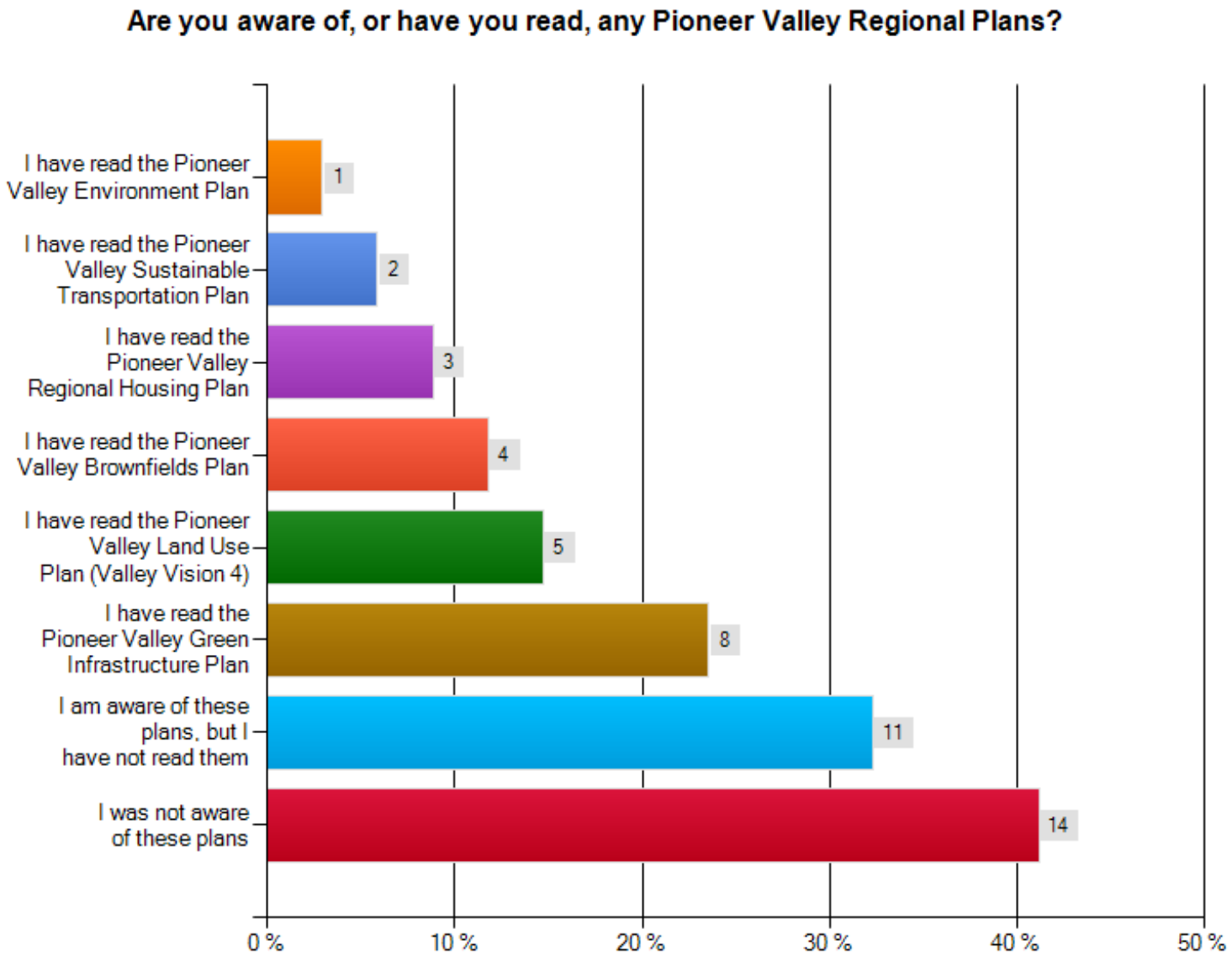
100%

Awareness of PVPC Plans



PVPC Plans are a resource to the region. The Green Infrastructure plan, in particular, provides an assessment of and spatial analysis of communities with in 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.

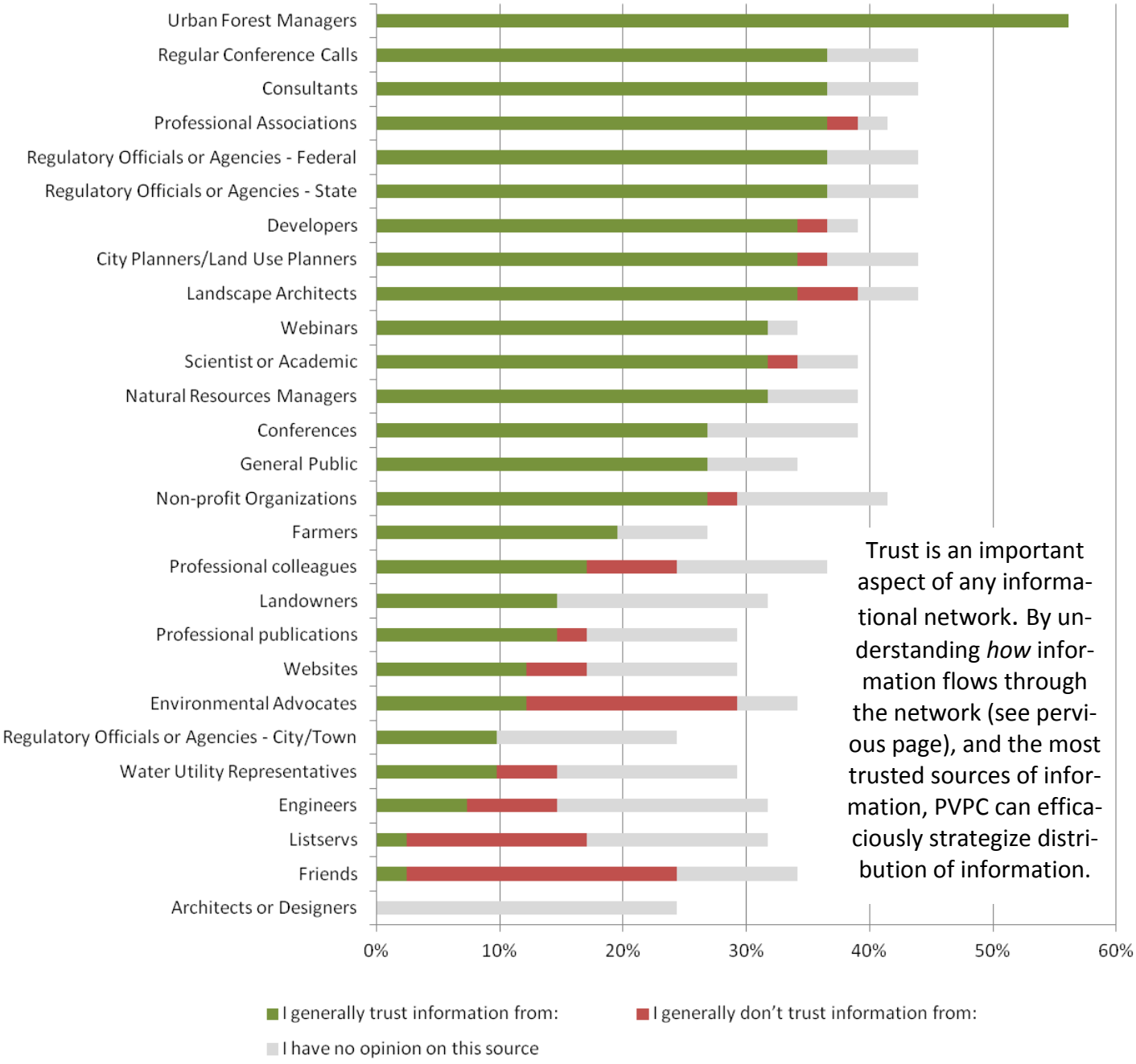
- porous pavement design and cost analysis

- 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

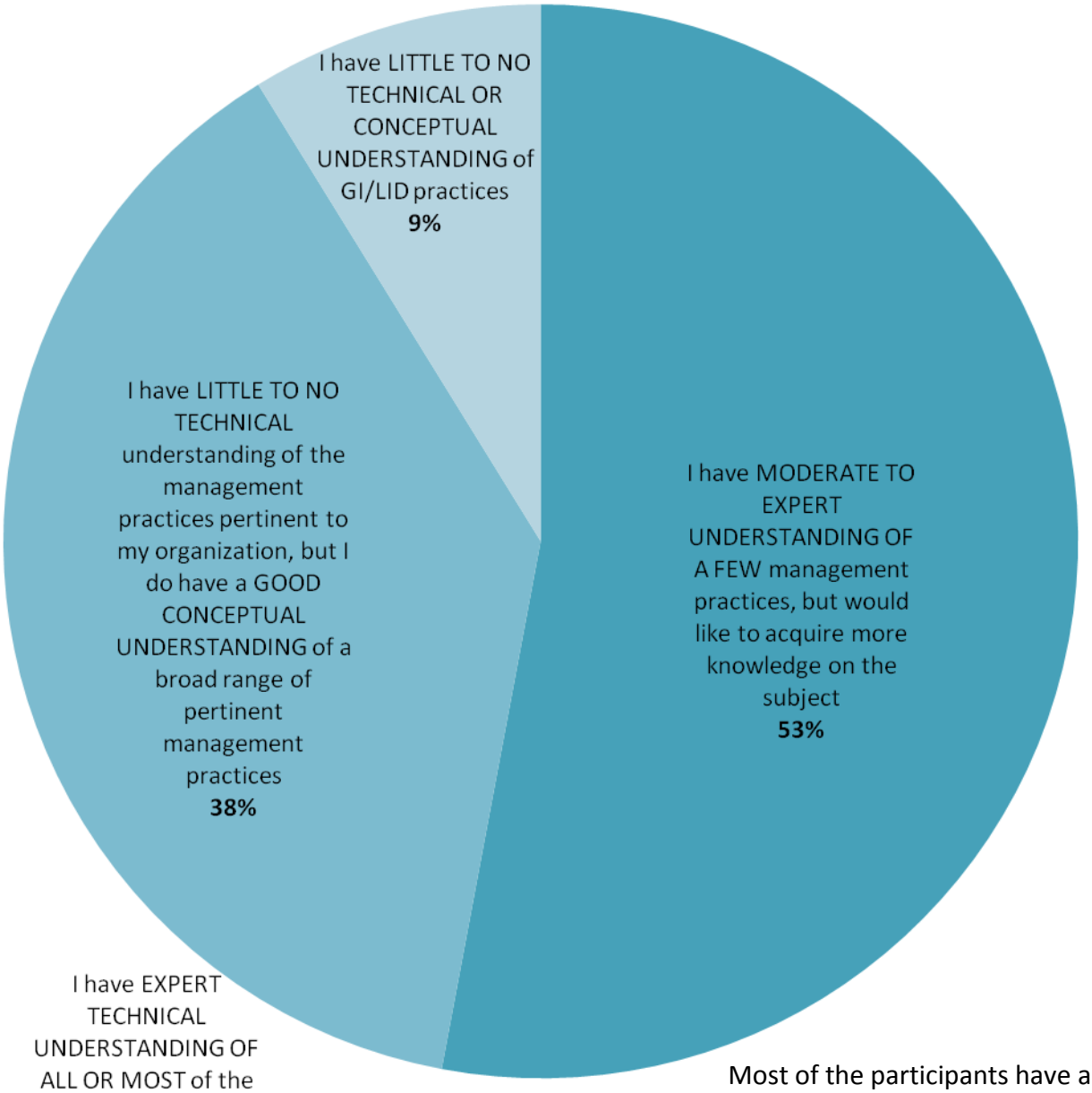
Participants' trust different sources of information differently



Trust is an important aspect of any informational network. By understanding *how* information flows through the network (see pervious page), and the most trusted sources of information, PVPC can efficaciously strategize distribution of information.

Familiarity

Technical & Conceptual Understanding of GI/LID



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


Kathleen Ogden/VHB

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

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**

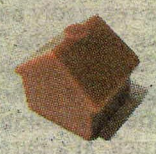
Sponsored by Pioneer Valley Planning Commission, Connecticut River Stormwater Committee, and U.S. Environmental Protection Agency Region 1

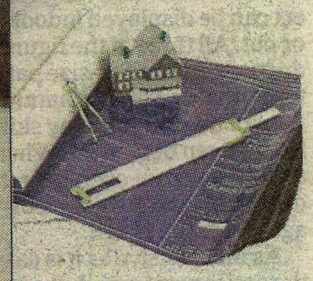
Sunday Republican.

HOME & GARDEN & REAL ESTATE

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 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.

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***

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 residential.

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

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?

Yes	No
18	0

H. How would you rate the facilities?

Poor		Good		Excellent
1	2	3	4	5
0	0	1	8	10

I. Overall rating of the entire workshop

Poor		Good		Excellent
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; instlaling 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 melp me creat 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 Gardners
▪ Greening Greenfield
▪ High schools, colleges with horticultrual/landscaping classes such as STCC.