



Stormwater Stars

Mary Logalbo, Urban Conservationist
West Multnomah Soil & Water Conservation District



Urban Stormwater

(Portland Avg. 37 inches/year)

- Increased stage height
- Increased temperature
- Increased runoff speed/decreased filtration of pollutants
- Sewer overflows

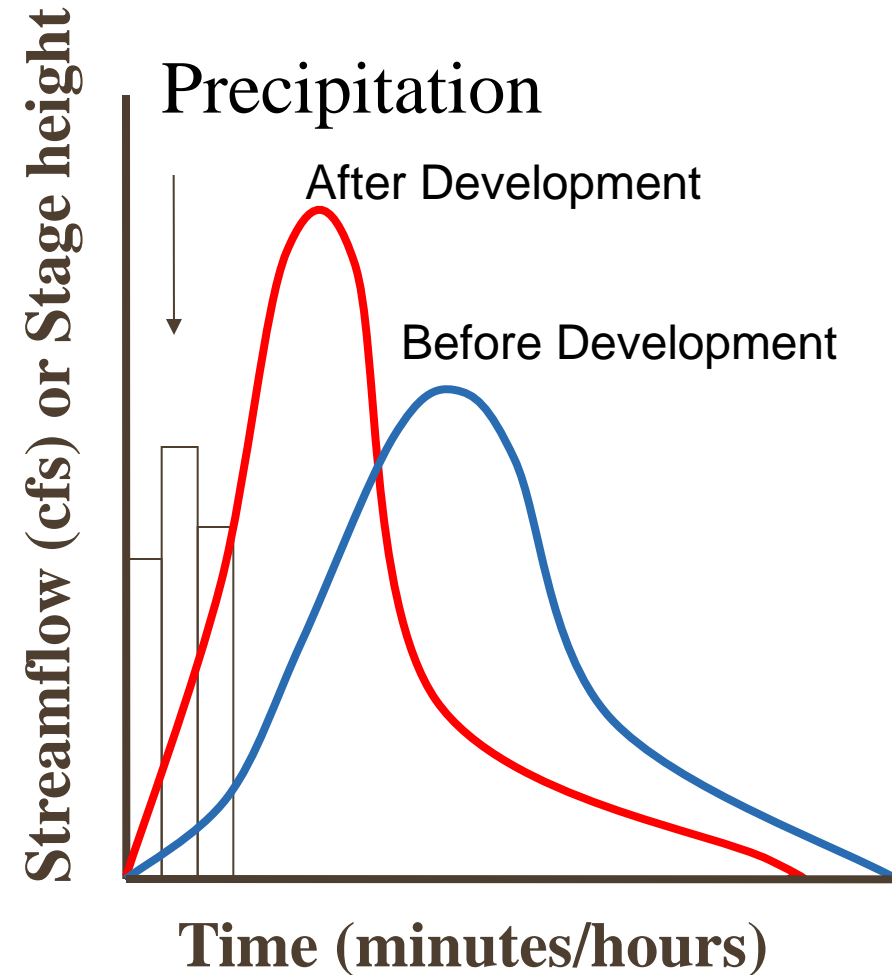


Image Source: East Multnomah SWCD



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[introduction](#)

Basemap

Map Contents

Layer Visibility

- ☐ Oregon Counties
- ☒ Historic Landslide Data Inventory
- ☒ Mapped Landslide Data Inventory
- ☐ Source Map Details
- ☐ Landslide Hazard

Layers Currently Shown

Historic Landslide Data Inventory

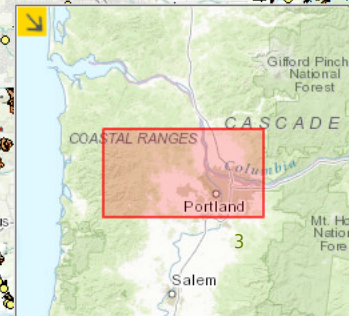
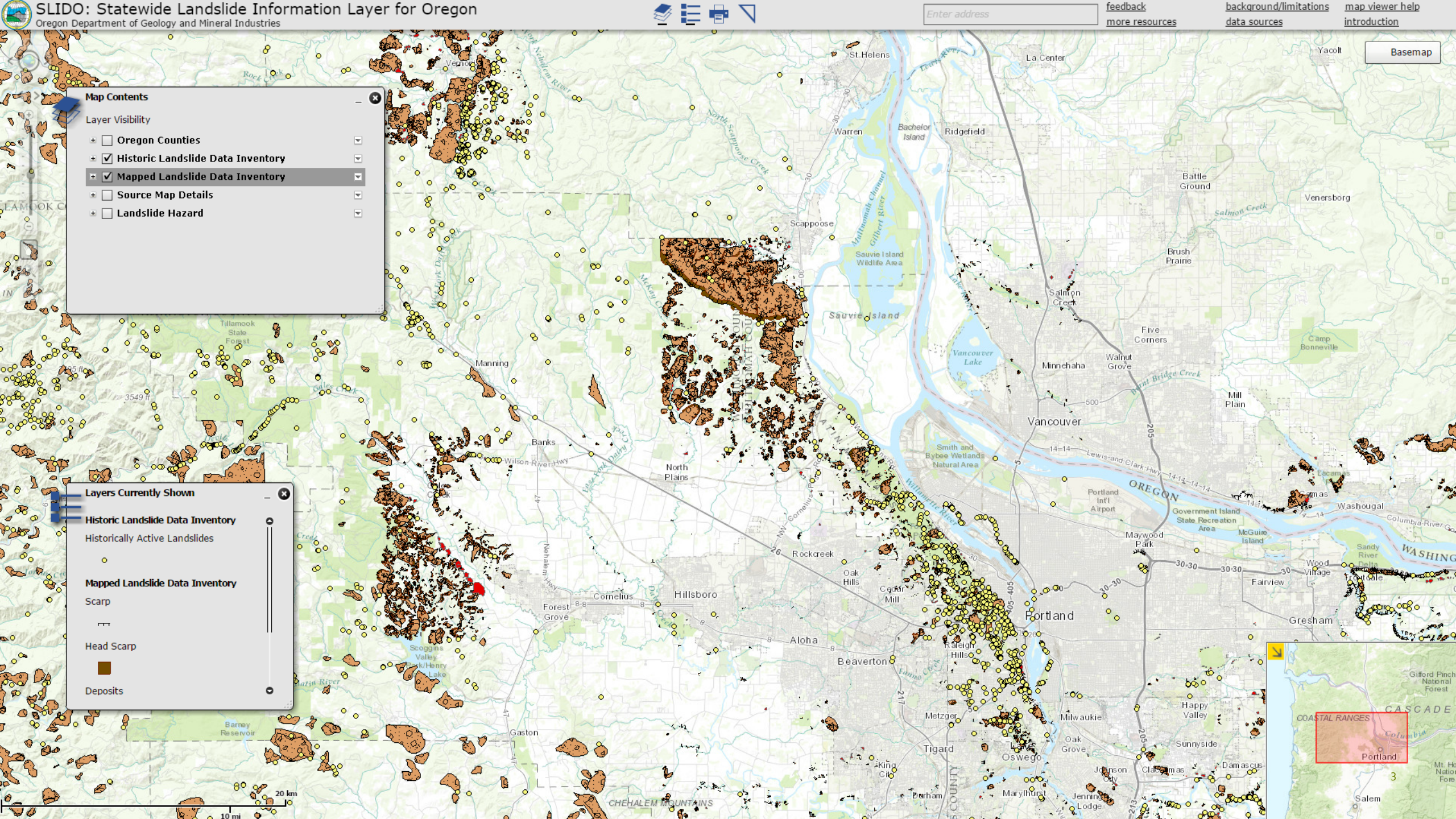
Historically Active Landslides

Mapped Landslide Data Inventory

Scarp

Head Scarp

Deposits



Stormwater Challenges

- Poorly draining soils
- Steep slopes, landslide hazards, and erosion concerns abound
- Seeps/springs
- High groundwater
- Inconsistent infrastructure



Photo courtesy of Oregon Department of Geology and Mineral Industries

Workshops & Direct Site Visits

- Ensure Landowner Conservation Plan Includes Stormwater BMPs
- Erosion & Stormwater Specific Workshops
- Training volunteer leaders, contractors & land managers



West Hills Innovative Stormwater Demonstration

Project Overview:

- <https://wmswcd.org/projects/west-hills-innovative-stormwater-demonstration/>

Stormwater BMP Fact Sheets

- <https://wmswcd.org/programs/stormwater-programs/>

Final Report:

- <http://greengirlpdx.com/JOBS/FHHOA/FHExecSumm.htm>

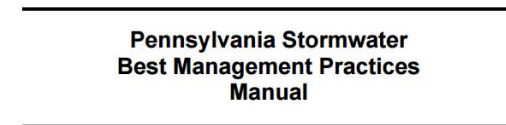
YouTube Videos & Additional Information:

- <http://greengirlpdx.com/FHHOA.htm>



Stormwater BMP References

- Puget Sound Partnership LID Manual
http://www.psp.wa.gov/downloads/LID/20121221_LIDmanual_FINAL_secure.pdf
- Evaluation PA Stormwater Management Best Management Practices Manual, 2006:
<http://www.stormwaterpa.org/pennsylvania.html>
- Center for Watershed Protection:
<https://www.cwp.org/stormwater-management/>
- 5C Program:
<http://www.5counties.org/stormwater.htm>

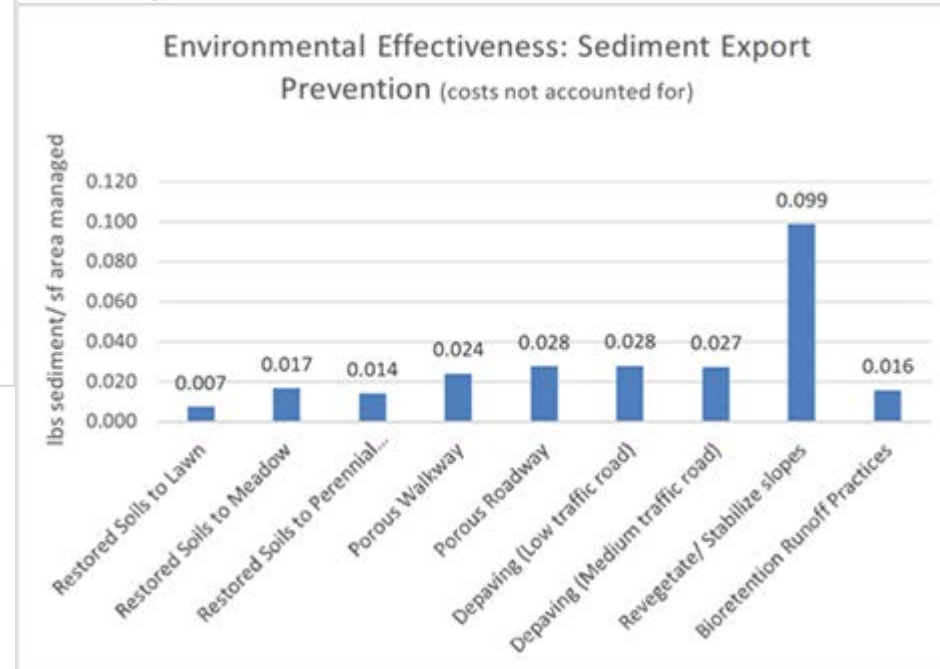
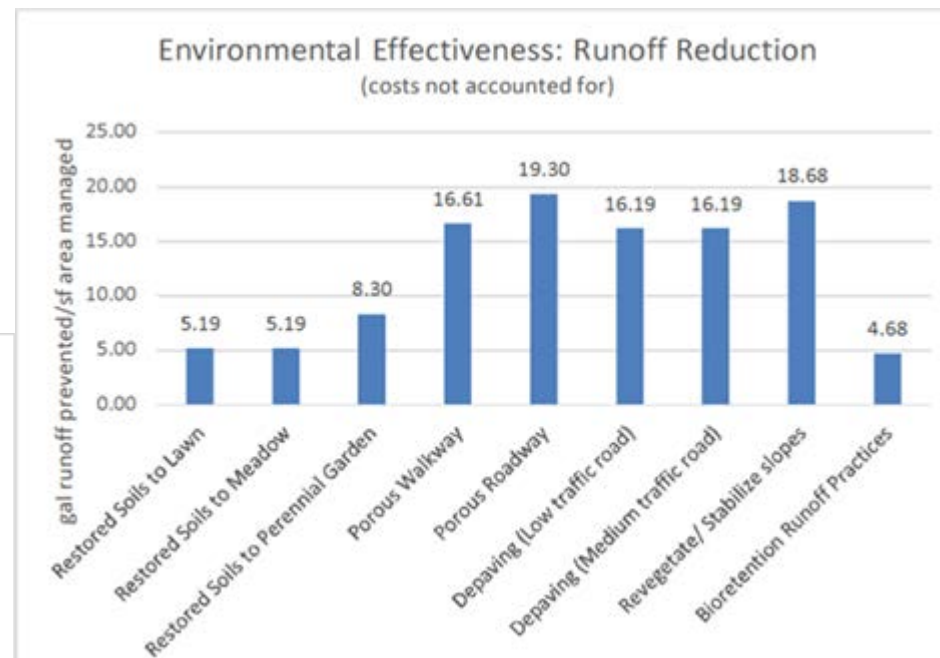
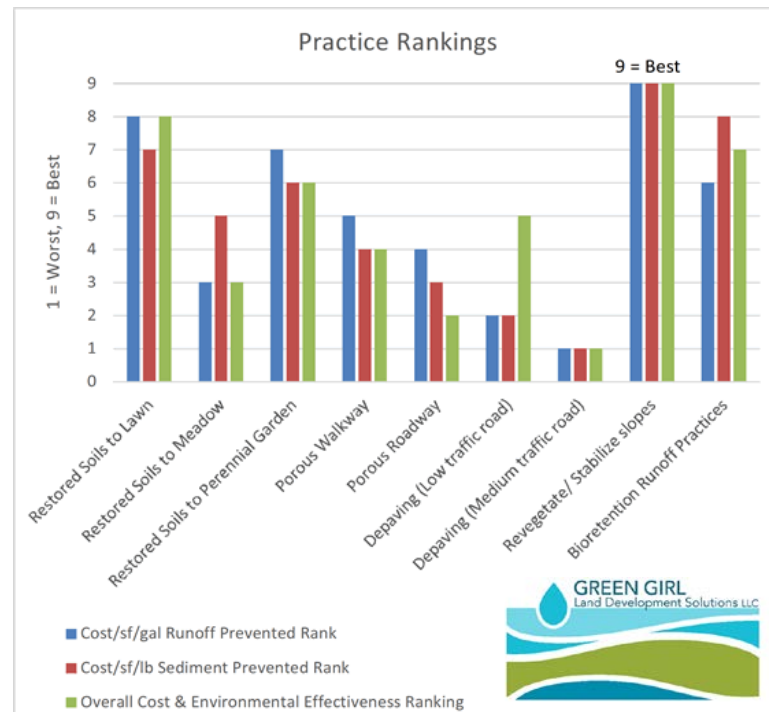


Chapter 1

Introduction and Purpose



West Hills Innovative Stormwater Demonstration



*Note: Very site specific, local costs and conditions will yield very different conclusions...

Stormwater Stars ★



Stormwater Stars ★

- Classroom, Design & Build
- BMPs (from West Hills Demo)
- Participant Pledge
- Program & Practice Evaluation
- Community Building



Photo Credits: Maria Cahill, <http://www.greengirlpdx.com/SWCPhotos.htm>

Stormwater Stars ★

- Classroom, Design & Build
 - Landowner Identification
 - Logistics
 - Classroom & Design
 - Landscape Contractor Oversight



Stamberger
Outreach Consulting
engaging communities
for a healthier environment



Stormwater BMPs

Runoff Reduction Approach	Estimated Runoff Reduction	Manages	Through	Relative Cost
Restored Soils	50 – 80%	Rainfall on landscapes	Evaporation & infiltration	Very Low
Tree Planting	98%	Rainfall on landscapes	Evaporation & infiltration	Low
Container Gardens over Hardscapes	40 – 50%	Rainfall on hardscapes	Evaporation	Medium
Depaving	50% - 90%	Rainfall on hardscapes	Evaporation & infiltration	Medium
Porous Walkways	90%	Rainfall on hardscapes	Infiltration of rainfall	High



2015 Installed BMP Impacts

Program Totals	Fall 2015	Spring 2015
Annual runoff reduced [gal]:	9,900	14,600
Annual soil erosion prevented [lbs]:	61	21
Area of landscape enhanced [sf]:	1068	2,029
Runoff prevention practices implemented:	6	8



Photo Credits: Maria Cahill, <http://www.greengirlpdx.com/SWCPhotos.htm>

Program & Practice Evaluation

- Tracked Behavioral Changes
 - Online Surveys
 - Pledges
 - Phone Surveys
- Participant Attendance & Testimonials
- Community Building



Participant Surveys & Pledges

- Top Barriers:
 - Financial Burden
 - Not sure about best BMP for site
 - Need more hands-on experience w/ install
- Favorite Part:
 - Hands-on
- 100% likely to use information
 - 77% already implementing practices
- 19 Pledges in fall 2015
 - 44% followed through @ 6 months
 - 25% helped others with install



Program Costs

	2012-14 DEQ Grant	2013-14	2014-15	2015-16	2016-17	TOTALS
DEQ 319 Grant Funds (SWCD Secured)	\$18,000					\$18,000
SWCD Funds (contractors & supplies)	\$1,840	\$7,500	\$7,500	\$12,000	\$12,000	\$40,840
SWCD Funds (partner support)		\$5,000	\$5,000	\$7,000	\$7,000	\$24,000
SWCD In-kind Match (approximate)	\$4,500	\$500	\$500	\$500	\$1,000	\$7,000
TOTALS	\$24,340	\$13,000	\$13,000	\$19,500	\$20,000	\$71,840
Estimated Additional Match (Partners, Landowners & Contractors)	\$14,440	\$3,000	\$3,000	\$2,000	\$2,000	\$24,440
					TOTAL	\$114,280

Program Challenges & Opportunities

- Coordinated Messaging
 - Sharing Materials & Program
- Decreased Participant Interest
 - Branding and/or Delivery
 - Focus on Field Support
- Target New Key Audiences
 - Landscape Contractors (CEUs)
 - Larger Properties
- Communication
- Ongoing Community Group Support
 - Google group
 - Sharing resources
 - Work parties



Thank you Stormwater Star Partners!



Partner Links

- SW Watershed Resource Center (Includes Video of Intro Workshop):
<http://swni.org/stormwater>
- GreenGirl Land Development Solutions LLC:
<http://greengirlpdx.com/SWChallenge.htm>
- Stamberger Outreach Consulting:
<https://stambergeroutreach.com/stormwater-stars-workshop-series-with-maria-cahill-green-girl-land-development-solutions-inc/>
- City of Portland, Bureau of Environmental Services:
<https://www.portlandoregon.gov/bes/>
- Oregon DEQ: <http://www.oregon.gov/deq/WQ/Pages/nps319.aspx>

Thank you!



Mary Logalbo, Urban Conservationist
mary@wmswcd.org
503.238.4775 x103
www.wmswcd.org

