

Tom Puttman | TSSI | Transformative Sustainable Services Inc
Dan Vizzini | Portland, Oregon | Bureau of Environmental Services



5th National Conference for Nonpoint Source and Stormwater Outreach | Portland, Oregon | May 12, 2009



The river lives by tributaries,
but also by innumerable little careful springs.
The river always finds the right way

William Stafford



The principles of Sustainability,
immutable as the law of gravity...
are only observable over long periods of time.

Eric Wentland

Welcome to Portland, Oregon

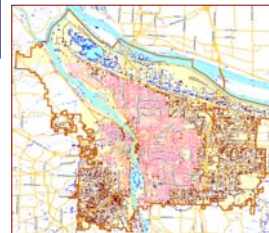
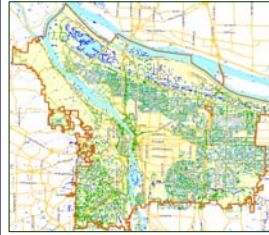
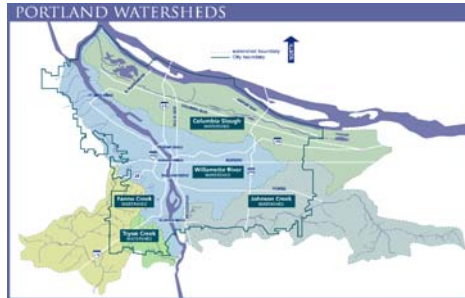
Ecotopia at the confluence of the Willamette and Columbia Rivers



- City residents: 568,380
- Land Area: 145 square miles
- Developed Areas: 22 square miles
- Street System: 13 square miles
- Annual Rainfall: 37 inches

One Utility... Three Drainage Systems... Five Distinct Watersheds

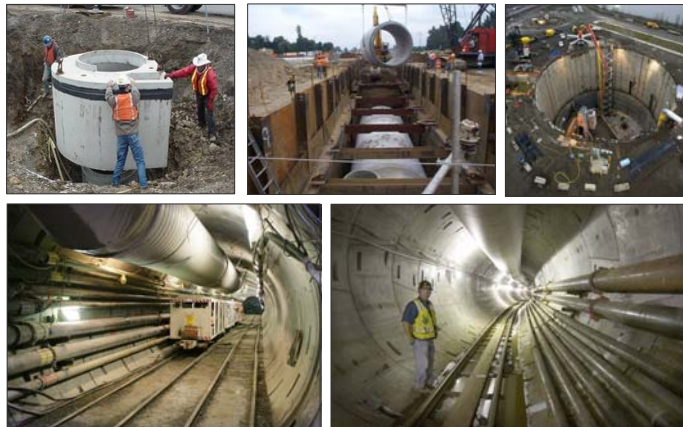
Knitting together watershed-based solutions that evolve beyond a legacy of grey infrastructure



- 3,880 lane miles of streets
- 2,300 miles of sanitary, storm & combined sewers
- 123 miles of drainage ditches
- 8,600 stormwater sumps
- 750 detention and pollution reduction facilities
- Increasing urban densities that will add 20% more annual urban runoff by 2040

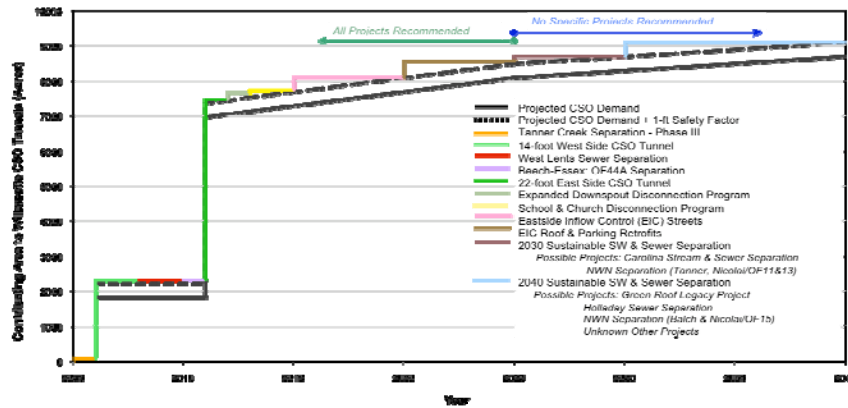
Portland's Analog Legacy

single purpose solutions, centrally controlled, publicly owned



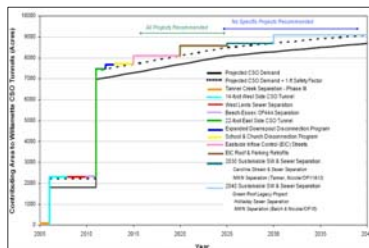
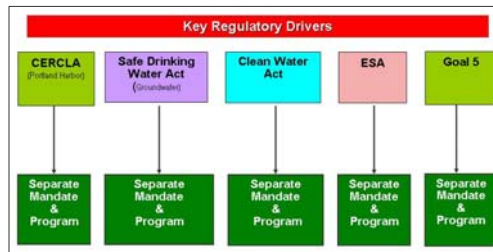
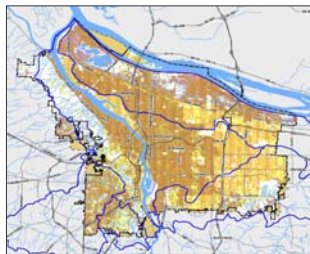
Planning for a Post Big Pipe Reality Moving from grey to green

CSO Demand Versus System Capacity Recommended Plan



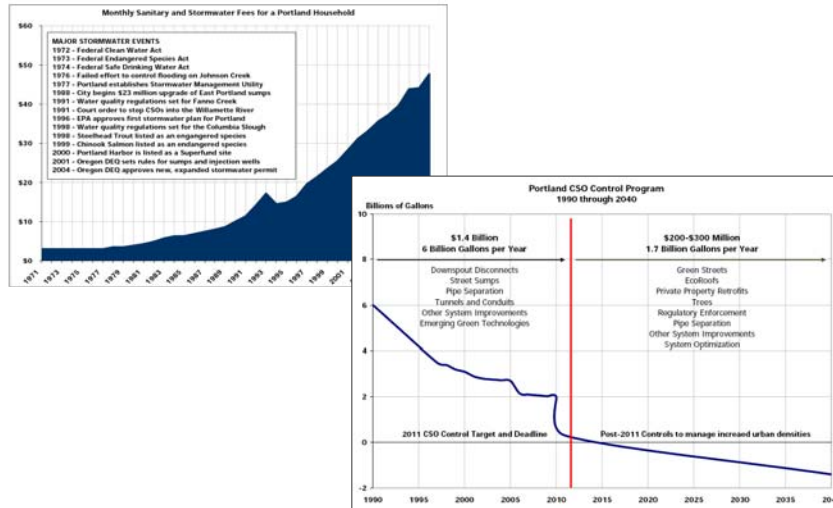
Shaping Forces

Science, regulation, system demands and economics conspire to transform stormwater management



Portland's Convenient Truth

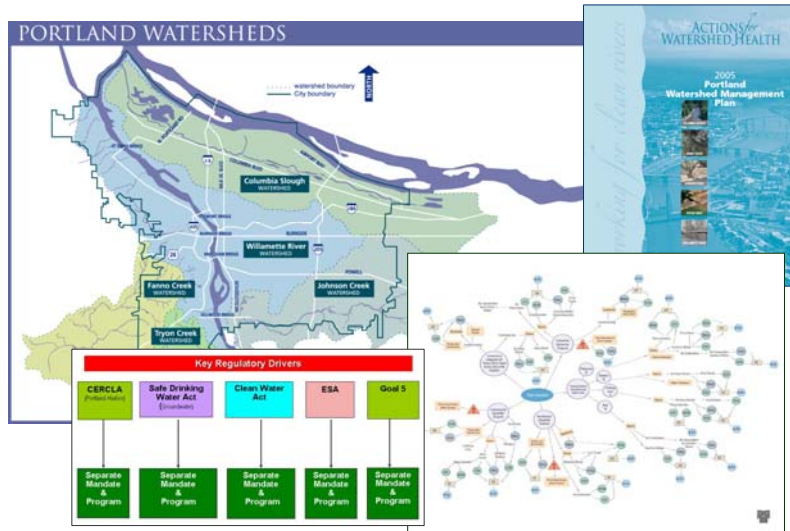
Ratepayers can not sustain the rate increases required by transitional stormwater management systems



projectdx | Animating Local, Private Green Stormwater Action | Portland, Oregon | May 12, 2009

Good science, watershed characterization and systems analysis

inform Portland's integrated approach to restoring and protecting watershed health

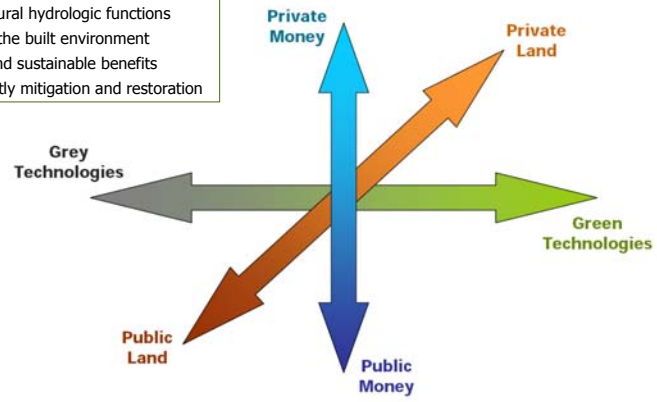


projectdx | Animating Local, Private Green Stormwater Action | Portland, Oregon | May 12, 2009

Grey to Green

Sustainability principles necessitate stormwater management that is local, private and green

- Manage runoff as close as possible to its source
- Mimic simple and natural hydrologic functions
- Integrate runoff into the built environment
- Design for multiple and sustainable benefits
- Act early to avoid costly mitigation and restoration

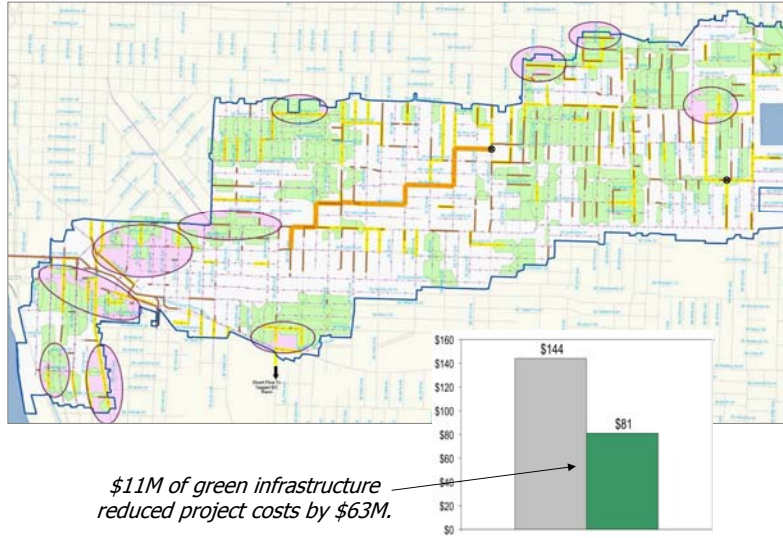


Portland's Digital Future

integrated multi-purpose solutions, place-based, decentralized, privately owned and green



Brooklyn Creek Basin
Economic benefits of green infrastructure



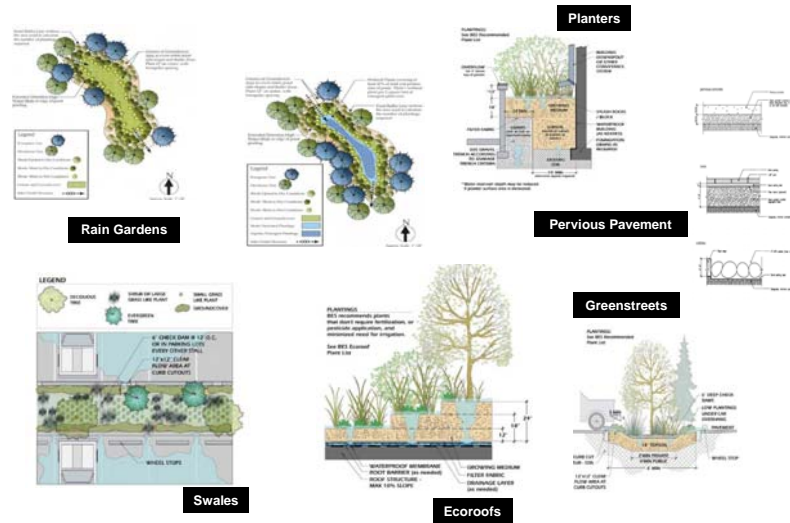
ProjectDX
connecting people to information, ideas and incentives



Goals Matter
goals guide the empowered community








Defining Action
actions the community take to benefit local watersheds and neighborhoods



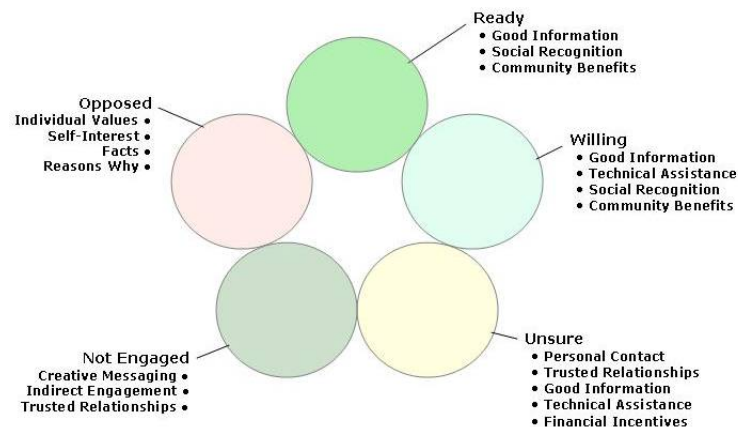
Effective Incentives

Encouraging the "right" actions with the "right" incentives

Downspout Disconnection	Watershed Stewardship Grants	Stormwater Rate Reduction	Ecoroof Grants	"Treebate"
 <ul style="list-style-type: none"> • \$53 per disconnected downspout OR free support • 56,000 participants (since 1994) • 1.2 billion gals removed from CSO 	 <ul style="list-style-type: none"> • \$5,000 per project • 27,000 participants (140,000 hours) • \$450,000 in grants generated more than \$1.9M in matching funds 	 <ul style="list-style-type: none"> • 35% reduction on stormwater bill • 33,000 participants (since 2006) • Reduction benefit being estimated through ProjectDX 	 <ul style="list-style-type: none"> • \$5 per SF of ecoroof • Program just being launched 	 <ul style="list-style-type: none"> • \$50 per tree • Program just being launched

Community Drivers

understand how individuals make decisions and communicate accordingly



Catalyzing the Local Green Economy
organizing and training stormwater service providers



View ([Calendar](#) | [Month](#) | [Week](#) | [RSS](#))

May 2009	
Thursday, May 21 2009	
Stormwater Retrofit Training	
Starts Thursday, May 21 2009 @ 8:00 AM	Ends 12:00 PM
Length 4 hours	Host Amber E Clayton
Professional stormwater retrofit training	
Stormwater Facility Maintenance Training	
Starts Thursday, May 21 2009 @ 1:00 PM	Ends 5:00 PM
Length 4 hours	Host Sherri L Groh
Fee Free	
Maintaining stormwater management facilities on private property	



Portland offers workshop on managing stormwater

by The Oregonian
Tuesday May 05, 2009, 8:41 AM

My Community | My Footprint | My Actions | Marketplace

ENVIRONMENTAL SERVICES
CITY OF PORTLAND
working for clean rivers

Stormwater Management [Log In or Register](#)

Overview | Stormwater Actions | Gray to Green | Map | Quick Links | [Powered by ProjectDX](#)

Welcome to ProjectDX Portland

The City of Portland is committed to becoming a truly sustainable city, but it can't do it without your help. That's why The City has committed to supporting and enabling every Portlander to take action. ProjectDX was created to help all Portlanders learn about the actions they can take on their properties to build a more sustainable city. This site gives you the tools to explore solutions that are specific to your property and then connect you with local service providers to get those projects done. Explore what's happening in Portland and enter your address to get started with your property.

Current Property

(No Property Yet)



Incentives for Sustainable Actions
As part of Portland's commitment to a sustainable future, the City is providing a number of incentives to the community to pay for sustainable actions. [Learn more](#) about these incentives. Better yet, enter your address above to learn how they may apply to you.

Share Your Sustainable Actions
Share your sustainable actions with the rest of the community. Click on the My Footprint tab above, enter a property address, and update your previously implemented projects. You may discover that your actions may qualify you for a reduction on your City utility bill.

Additional City Support
You are not alone on your path for a sustainable future. Portland's Office of Sustainable Development, Bureau of Environmental Services and Portland Development Commission have useful information and services to help you. Go to [Quick Links](#) to learn more.

[My Community](#) | [My Footprint](#) | [My Actions](#) | [Marketplace](#)

ENVIRONMENTAL SERVICES
 CITY OF PORTLAND
 WORKING FOR CLEAN RIVERS

[Log In or Register](#)

Stormwater Management

[Overview](#) | [Stormwater Actions](#) | [Grey to Green](#) | [Map](#) | [Quick Links](#)

Powered by [ProjectDX](#)

Welcome to ProjectDX Portland

The City of Portland is committed to becoming a truly sustainable city, but it can't do it without your help. That's why The City has committed to supporting and enabling every Portlander to take action.

ProjectDX was created to help all Portlanders learn about the actions they can take on their properties to build a more sustainable city. This site gives you the tools to explore solutions that are specific to your property and then connect you with local service providers to get those projects done.

Explore what's happening in Portland and enter your address to get started with your property.

Current Property

(No Property Yet)

Enter street address and zip code

Stormwater Management

Goals | Actions | Incentives

Urban stormwater runoff is a major threat to clean rivers. By 2040, city leaders want to manage 84% of runoff from all developed property.

[Learn what others are already doing >>](#)

Incentives for Sustainable Actions

As part of Portland's commitment to a sustainable future, the City is providing a number of incentives to the community to pay for sustainable actions. Learn more about these incentives. Enter yet, enter your address above to learn how they may apply to you.

Share Your Sustainable Actions

Share your sustainable actions with the rest of the community. Click on the My Footprint tab above, enter a property address, and update your previously implemented projects. You may discover that your actions may qualify you for a reduction on your City utility bill.

Additional City Support

You are not alone on your path for a sustainable future. Portland's Office of Sustainable Development, Bureau of Environmental Services and Portland Development Commission have useful information and services to help you. Go to Quick Links to learn more.

| Animating Local, Private Green Stormwater Action | Portland, Oregon | May 12, 2009

[My Community](#) | [My Footprint](#) | [My Actions](#) | [Marketplace](#)

ENVIRONMENTAL SERVICES
 CITY OF PORTLAND
 WORKING FOR CLEAN RIVERS

[Log In or Register](#)

Stormwater Management

[Overview](#) | [Stormwater Actions](#) | [Grey to Green](#) | [Map](#) | [Quick Links](#)

Powered by [ProjectDX](#)

Stormwater Management

When it rains, the stormwater that lands on roofs and paved areas washes pollutants into local streams and rivers. This runoff causes flooding and erosion that destroys habitat. You can help prevent these impacts by managing stormwater before it runs off of your property.

Sustainable stormwater management strategies mimic nature and are integrated into the built environment to provide multiple benefits. For example, with a few minor changes to your landscaping, you can redirect stormwater from your roof to flow into a swale or planter instead of a local street or sewer. The stormwater infiltrates into the ground and slowly recharges local streams and rivers. Some of the stormwater is used by the landscaping and reenters the atmosphere, improving air quality. The landscaping serves as habitat for birds and other wildlife. And of course, the landscaping is an amenity that adds beauty and value to your property.

Learn more about the ways you can manage stormwater on your property by reviewing different approaches to stormwater management, below. Then, enter an address to see what solutions are appropriate for your specific property.

Current Property

(No Property Yet)

Enter street address and zip code

What are Others Doing?

[Roof](#) | [Yard](#) | [Paved](#)

Downspout Disconnect [Learn More](#)


Diywell [Learn More](#)

Ecoroof [Learn More](#)

Current Incentives

- Ecoroof Grant Program
- Tree-Planting Incentives
- Clean River Rewards
- Watershed Stewardship Grants
- Green Investment Fund Grants


| Animating Local, Private Green Stormwater Action | Portland, Oregon | May 12, 2009



ENVIRONMENTAL SERVICES
CITY OF PORTLAND
working for clean rivers

My Community
My Footprint
My Actions
Marketplace

Stormwater Management
Log In or Register


Overview | Stormwater Actions | Grey to Green | Map | Quick Links
Powered by 

Portlanders Take Action!

Many Portland property owners have already taken action to create a more sustainable city. Use the map below to explore what others in our community have already done and get ideas about what you can do to go green and earn green in return.

Don't see your actions on the map? Log in above, and the map will be updated automatically.

Choose a Region: Lower Johnson Creek Watershed







Current Property


1700 SE 41st Ave, Portland, Oregon 97214

Find another Property

Enter street address and zip code

Most Popular Solutions in Portland

- 
- 
- 
- 

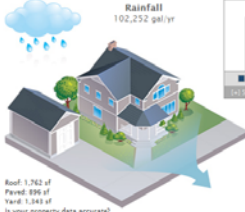

Animating Local, Private Green Stormwater Action | Portland, Oregon | May 12, 2009

Property Stormwater Footprint

Use this page to see your overall property runoff as well as the runoff per roof, paved and yard areas. Check out what solutions are appropriate for your property and configure any one of them to learn about cost, incentives and environmental benefits. As you finish projects, this page lets you monitor your reduced stormwater footprint over time. Finally, use the map to see what actions your neighbors have taken on their properties.

Tell us about existing projects on this property.


Rainfall
102,252 gal/yr



Roof: 1,762 sf
Paved: 896 sf
Yard: 1,548 sf


Is your property data accurate?
[Update Property Profile](#)
[View assumptions](#)

Runoff Distribution




100%
Runoff Remaining
67,957 gal/yr

Roof Yard Paved



Ecoroof



Flow-through Planter

Current Property

1700 SE 41st Ave, Portland, Oregon 97214

Find another Property

Enter street address and zip code

Implemented Solutions

Solutions	Reduced Runoff (Property)
Total	0 gal/yr


Other implemented solutions? Let us know

Other Implemented Projects: 0 gal/yr

Other Solutions: 0 gal/yr

Something not looking right? Send us an email about it.

See projects in the neighborhood




Animating Local, Private Green Stormwater Action | Portland, Oregon | May 12, 2009

Ecoroof 1700 SE 41st Ave, Portland, Oregon 97214 More Roof Area Solutions

Choose how much roof area to manage. Ecoroof Size: 1,057 square feet

1% 100% 100%


Roof Area to Manage: % Save / Cancel

Property information Learn More


Roof Area: 1,762 sf
 Yard Area: 1,343 sf
 Total Downspouts on Roof: 4
 Paved Area: 896 sf
 Utility Plan: Residential Sewer Service (Bureau of Environmental Services)

Learn More

An ecoroof is a lightweight layer of vegetation installed on building rooftops to reduce stormwater runoff. Ecoroofs also provide heating and cooling reductions through increased insulation and minimize urban heat island impacts through roof cooling. Numerous ecoroof designs exist making them a simple yet highly effective stormwater management solution. (more...)




Estimated Benefits Estimated Costs & Incentives



Runoff Reduced (Property)

2.8%


19,231 gal/yr



Runoff Reduced (Roof Area)


4.5%

19,231 gal/yr



350

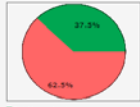
Rain barrels of runoff removed annually by this action



\$78


Yearly Savings from this solution

Total Cost	\$8,458
BES Ecoroof Grant	-\$5,286
Out of Pocket Cost	\$3,172
Net System Cost	\$3,172



37.8% Net Owner Cost
62.2% BES Grant

ProjectDX only provides rough calculations based on assumptions about your property. We strongly recommend you contact a service provider to get an accurate estimate of the benefits and costs of your chosen stormwater solutions.

 | Animating Local, Private Green Stormwater Action | Portland, Oregon | May 12, 2009

My Actions

Use this page to keep track of your projects. Here you can review your selected solutions and see the estimated benefits and costs. For each, you can then see the steps you might take to implement your solutions.


Select a Property: 10001 Old Redwood Hwy, Windsor, California 95492 View Actions

Projects For: 1700 SE 41st Ave, Portland, Oregon 97214

Current Projects	Benefit	Estimated Cost	Last Updated	Status and Next Steps
Stormwater Management				
[Ecoroof - 1.0578IAM]	19,240 gallons/yr	\$8,453	04/25/2009	<ul style="list-style-type: none"> Select a solution <input checked="" type="checkbox"/> Configure Solution (Change Configuration) Find a service provider <ul style="list-style-type: none"> Search our marketplace (No Saved Vendors) Contact service providers Get help with financing <ul style="list-style-type: none"> Apply for BES Ecoroof grant Complete the Project <ul style="list-style-type: none"> Enter final project details
Delete				
Add a Project				

Your property may be eligible for the following incentives:

Clean River Rewards [Apply Now](#)

 | Animating Local, Private Green Stormwater Action | Portland, Oregon | May 12, 2009

Select a Local Service Provider

Use the filters to narrow your search and find service providers by service type and by the solutions they can help you with. Once you find a provider that you like, click "Add to My Solutions" and go back to the My Actions page for next steps, like sending your project file directly to the service provider(s) you've selected.

Click here to learn more about the marketplace and view our disclaimer.

Solution Type: Service Type: Credential:

Sort Alphabetically

Email: mail@schwartzassociates.com
Solutions: Ecoroof, Trees, Infiltration Planter, Rain Garden, Flow-through Planter
Credentials: Sustainable Stormwater Mgt. Training
[Add to My Solutions](#)

Portland Nursery - Division
Address: 9000 SE Division, Portland, Oregon 97266 (Map it)
Phone: (503) 788-9000
Email: tjean@portlandnursery.com
Solutions: Rain Barrel, Ecoroof, Flow-through Planter, Infiltration Planter, Rain Garden, Trees
Credentials: Sustainable Stormwater Mgt. Training
Notes: Plant selection and planting plans for stormwater management projects.
[Add to My Solutions](#)





Fusion Landscape Design
Email: fusiondesign2003@yahoo.com
Solutions: Downspout Disconnect, Rain Barrel, Drywell, Ecoroof, Flow-through Planter, Infiltration Planter, Rain Garden, Trees, Porous Pavement
Notes: Sustainable garden design
[Add to My Solutions](#)

Sakoda Land and Waterscapes, LLC
Address: 4010 SE Clinton St., Portland, Oregon 97214 (Map it)

Current Property
1700 SE 41st Ave., Portland, Oregon 97214
[\[-\] Remove from Favorites](#)
[Find another Property](#)

[\[-\] Favorite Properties](#)
[\[-\] Recent Properties](#)

Most Popular Solutions in Portland

-  [Learn More](#) [Configure](#)
-  [Learn More](#) [Configure](#)
-  [Learn More](#) [Configure](#)
-  [Learn More](#) [Configure](#)

Select a Local Service Provider

Use the filters to narrow your search and find service providers by service type and by the solutions they can help you with. Once you find a provider that you like, click to the My Actions page for next steps, like sending your project file to you've selected.

Click here to learn more about the marketplace and view our disclaimer.

Solution Type: Service Type:

Sort Alphabetically

Email: mail@schwartzassociates.com
Solutions: Ecoroof, Trees, Infiltration Planter, Rain Garden, Flow-through Planter
Credentials: Sustainable Stormwater Mgt. Training
[Add to My Solutions](#)

Portland Nursery - Division
Address: 9000 SE Division, Portland, Oregon 97266 (Map it)
Phone: (503) 788-9000
Email: tjean@portlandnursery.com
Solutions: Rain Barrel, Ecoroof, Flow-through Planter, Infiltration Planter, Rain Garden, Trees
Credentials: Sustainable Stormwater Mgt. Training
Notes: Rain selection and planting plans for stormwater management projects.
[Add to My Solutions](#)

Fusion Landscape Design
Email: fusiondesign2003@yahoo.com
Solutions: Downspout Disconnect, Rain Barrel, Drywell, Ecoroof, Flow-through Planter, Rain Garden, Trees, Porous Pavement
Notes: Sustainable garden design
[Add to My Solutions](#)

Sakoda Land and Waterscapes, LLC
Address: 4010 SE Clinton St., Portland, Oregon 97214 (Map it)

Current Property
1700 SE 41st Ave., Portland, Oregon 97214
[\[-\] Remove from Favorites](#)

Please send my project file to the following service providers:

Sakoda Land and Waterscapes, LLC Never contacted.

Add a personal comment to be included with the message to selected service providers:

Please indicate your contact preferences:

Email
 Phone AM PM Any Time
 Please send me a copy of this email
 I acknowledge and agree to the terms of the ProjectDX Privacy Policy.

Complete Project

Ecoroof

Installed By: Myself Vendor: Sakoda Land and Waterscapes, LLC

Install Date: April 2009

Impervious Area Managed (Sq. Feet): 1057

Cost before incentives (\$): 6500

Primary Motivation: Benefit the environment

Eligible Programs

Clean River Rewards
Portland's stormwater utility discount program. Portland ratepayers can save money (up to a 100% discount on on-site management charges) and work for clean rivers and healthy watersheds at the same time. You can apply now for Clean River Rewards.

[Save](#)

REGISTRATION FORM

Utility Account Information

Utility Account Type:
 Single Family Residential (includes Owner and Applicant)
 Commercial, Industrial, Institutional and Multi-Family Residential (Applicant)

Utility Account Number (or tag number of your meter):

Business Name:

Site Address: 1700 SE 41ST AVE

Mailing Address: 1700 SE 41ST AVE

City: Portland

State: Oregon

Zip: 97214

Email Address: beatrix@projectdx.com

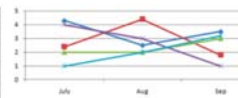
Phone Number:

Portland Reporting Tool

- Program**
- Clean River Rewards
 - Ecoroof
 - Enhanced Disconnected
 - Trees
- Geographic Areas**
- Whole city
 - Watersheds
 - Basins
 - Neighborhoods
- Property Type**
- Single Family
 - Multi-Family
 - Commercial
- System**
- CSD
 - MDA
 - UIC
- Action**
- All
 - Actual
 - Forecast
- BMP(s)**
- All stormwater BMPs
 - Infiltration planter
 - Flow-through planter
 - Rain garden
 - Drywell
 - Permeous pavement
 - Ecoroof
 - Trees
- Time Frame**
- Previous month
 - Previous month

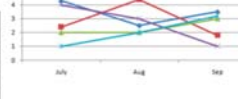
Runoff Removed (Jul-Sep 2008, shown by month)

	Jul 2008	Aug 2008	Sep 2008	Total
Infiltration planter	\$,000	\$,000	\$,000	\$,000
Flow-through planter	\$,000	\$,000	\$,000	\$,000
Rain garden	\$,000	\$,000	\$,000	\$,000
Drywell	\$,000	\$,000	\$,000	\$,000
Permeous pavement	\$,000	\$,000	\$,000	\$,000
Ecoroof	\$,000	\$,000	\$,000	\$,000
Trees	\$,000	\$,000	\$,000	\$,000
Total runoff removed	\$,000	\$,000	\$,000	\$,000



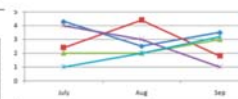
Phosphorus Removed (Jul-Sep 2008, shown by month)

	Jul 2008	Aug 2008	Sep 2008	Total
Infiltration planter	\$,000	\$,000	\$,000	\$,000
Flow-through planter	\$,000	\$,000	\$,000	\$,000
Rain garden	\$,000	\$,000	\$,000	\$,000
Drywell	\$,000	\$,000	\$,000	\$,000
Permeous pavement	\$,000	\$,000	\$,000	\$,000
Ecoroof	\$,000	\$,000	\$,000	\$,000
Trees	\$,000	\$,000	\$,000	\$,000
Total runoff removed	\$,000	\$,000	\$,000	\$,000

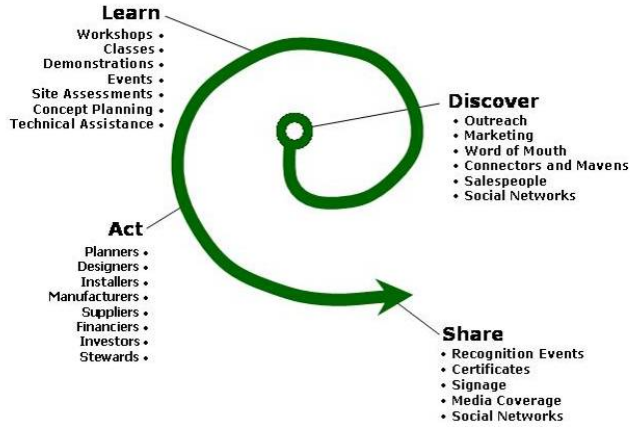


TSS Removed (Jul-Sep 2008, shown by month)

	Jul 2008	Aug 2008	Sep 2008	Total
Infiltration planter	\$,000	\$,000	\$,000	\$,000
Flow-through planter	\$,000	\$,000	\$,000	\$,000
Rain garden	\$,000	\$,000	\$,000	\$,000
Drywell	\$,000	\$,000	\$,000	\$,000
Permeous pavement	\$,000	\$,000	\$,000	\$,000
Ecoroof	\$,000	\$,000	\$,000	\$,000
Trees	\$,000	\$,000	\$,000	\$,000
Total runoff removed	\$,000	\$,000	\$,000	\$,000



The Stormwater Journey
moving property owners from discovery to action



Tom Puttman, PE, AICP, LEED AP
503.953.2079
tom@projectdx.com
www.projectdx.com



Dan Vizzini
503.823.4038
danv@bes.ci.portland.or.us
portlandbes.projectdx.com