

Waller 3 Benchmarking Study

Stormwater Residential Incentive Program: Lessons Learned

Friday, August 25, 2017



This report contains the Watershed Protection Department's Education Team 2017 summer intern's research on stormwater incentives for residential properties. Within this document is a comprehensive look at eight municipal stormwater incentive programs across the nation. The information contained in this report is general and conceptual. The views expressed in this report are interpretations of the summer intern and do not reflect the municipalities mentioned and/or the City of Austin's Watershed Protection Division (WPD).

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Term	Abbreviation
Stormwater	SW
Stormwater Control Measure	SCM

Known Incentive Programs Currently Being Offered

The following list is a list of residential green stormwater infrastructure incentive programs.

Contacted and Full Interview	Contacted
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| <ol style="list-style-type: none"> 1. Alachua County, Florida 2. Alliance for the Chesapeake Bay: Chesapeake Riverwise Communities 3. Anacostia Watershed Society: Stewards Academy 4. Arlington, VA: StormwaterWise 5. Bellingham, WH: Lake Whatcom Homeowner Incentive Program 6. Blue Water Baltimore: Water Audit Program 7. Charlottesville, VA: Green Infrastructure Center 8. Chesapeake Stormwater Network (Several Programs) 9. Chicago, Illinois 10. City of Elmhurst, IL: Residential Stormwater Management Incentives or Clear Creeks Project 11. Conewago Creek Initiative: Stormwater Incentives Program 12. Cumberland and River Compact – Nashville, TN: Rain Barrel and Rain Garden Program 13. District of Columbia: River Smart Homes 14. Elizabeth River Project - Portsmouth, VA: River Stars 15. Emeryville, California: Fact Sheets 16. Federal Green Infrastructure Funding 17. Frederick County Maryland: Green Homes Challenge 18. Friends of the Rappahannock: Rainscape Retrofits 19. Gunpowder Valley Conservancy: Rain Barrel Program 20. Howard County: Clean Howard Stormwater solutions program 21. James City County: Clean Water Heritage Grant Program | <ol style="list-style-type: none"> 22. James River Association: River Hero Program 23. Kansas City: KC Water & KC Green 24. Los Angeles, California LA: Broadway Neighborhood Greenway Project 25. Lynchburg, VA: Stormwater Credit Program 26. Lynnhaven River Now: Pearl Homes 27. Melbourne, Australia: Living Rivers 28. Montgomery County, MD: Rainscapes 29. New Hampshire: S.O.A.K. Up The Rain 30. North Carolina State University: Stormwater BMP Inspection and Maintenance Certification Workshop 31. Northeast Ohio Regional Sewer District – Cleveland, OH: Community Stormwater Resources 32. Olympia, Oregon: Rain Garden Incentive Program 33. Philadelphia Water Department – Rain Check 34. Portland, Oregon: Private Property Retrofit Program 35. Prince George's County, MD: Rain Checks 36. Richmond, VA: Residential credit program 37. Santa Monica, California: Urban Runoff Rainwater Harvesting 38. Sea Grant Maryland: Watershed Restoration Assistance Directory 39. Seattle, Washington: RainWise 40. St. Louis Park Minnesota: Rainwater Rewards Program 41. Stafford County, VA: Purchase of Development Rights (PDR) Program 42. University of Maryland: Program Certification 43. Water Environment Federation – Program recommendations |
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Existing Programs Overview

Baltimore, Maryland: Water Audit Program; One Water Partnership

Administrators: Blue Water Baltimore (BWB) | Baltimore City Department of Public Works

Contact(s):

Jessie Hillman 410-254-1577 ext 114 jhillman@bluewaterbaltimore.org
Mark Cameron 410-396-0732 Mark.Cameron@baltimorecity.gov

*Non Profit Partner
Main Municipal Representative*

Data Tracking Method(s): Sales Force and iPads

City Setting: Dense Urban, mostly row home neighborhoods, not a lot of yard space for SCMs, very few renters in the city overall for homes. Most people own them.

Outreach Effort: Community Meetings, newsletter, online and social media

Main Driver for Stormwater Management: MDE and MS4 permit requirements, BWB also pushed for this.

Program Overview: Baltimore's Water Audit Program was a four year partnership effort between the City and BWB. Rebates were offered to homeowners who installed approved SCMs on their property. BWB was the main point of contact. Program staff helped residents with paperwork, pre/post inspections and tracking maintenance conditions. Each lot could receive up to 2K in rebates. Since the housing program's end, the effort has shifted to focus on houses of worship. One water Partnership, asks these landowners to take on 6 action revolving around stormwater. This includes but is not limited to making a SW management plan, maintenance plan, getting a 1K grant for a project, opportunity to apply for larger grant, and/or apply for a SW fee credit.

Contractors: This program provided a list of recommended contracts for green infrastructure projects. The contractors have to participate in the BWB training to be included on this list. However, a homeowner does not have to get a contractor from this BWB list in order to participate in the program.

www.bluewaterbaltimore.org/ | <https://publicworks.baltimorecity.gov/pw-bureaus/water-wastewater/stormwater>

District of Columbia: RiverSmart Homes; RiverSmart Schools; RiverSmart Communities; RiverSmart Washington

Administrators: District Department of Energy and Environment (DOEE) | Alliance for the Chesapeake Bay (ACB) | Casey Trees

Contact(s):

Steve Saari 202-535-2961 steve.saari@dc.gov
Lauren Linville 202-535-2252 lauren.linville@dc.gov
Sarah Davidson 202-905-4945 sdavidson@allianceforthebay.org
Erin O'Grady 202-817-9672 eogrady@allianceforthebay.org

*Main Municipal Representative
Main Municipal Representative
Non Profit Partner
Non Profit Partner*

Data Tracking Method(s): ArcGIS, Arc Collector, iPads and online database for signup applications

City Setting: Dense Urban, 1/2 single family 1/2 row house lots, 1/3 of lot occupants are renters. Larger elderly homeowner pop.

Outreach Effort: Community Meetings, WOM, Targeted watersheds, water bill statement, real estate, special events (earth fair, bio blitz, Hickey Run Heroes.),

Main Driver for Stormwater Management: Initially part of Recovery Act dollars, and some large scale modeling of SW mitigation. Presently driven by established brand and target areas of SW controls.

Program Overview: RS Homes allows single family, duplexes, and row houses up to receive SCMs valued at least \$5,700 at for homeowner copay of \$450. Landscape contractors are called upon to install SCMs on these properties. SCMs are paid for by a copay method between homeowner and city. Rebate are offered as an alternate or additional choice for homeowners. Gov. Auditors review each site with property owner prescribing a personal SW plan before proceeding. Installs are organized and administrated by a nonprofit partner grantee that doles of the funds of the program as well as receive homeowner's copay. There are at least 7 staffers (5 gov. 7 nonprofit) working on the RiverSmart Homes Program alone with 3 more devoted to other RiverSmart programs. The program is funded a 1/3 by EPA CBig funding and 2/3 from MS4 funding.

Contractors: Program keeps about 7+ contractors as approved for the program a year for landscaping and 3+ for rain barrel installing. Installers have to participate in RSH Contractor training for RG and RBs as well as ICPI training in order to install SCMs through RSH. DC host a portion of the training at their office. DC has a series of training opportunities throughout the year. Two for landscaping practices and two for rain barrel installing. Trainings are a day long.

<https://doee.dc.gov/service/get-riversmart>

Richmond, Virginia: River Hero Home Program

Administrators: James River Association | City of Richmond Public Utilities Department

Contact(s):

Amber Ellis	(804)788.8811 ext.205	ellis@jrava.org	<i>Non Profit Partner</i>
Gay Stokes	804 646-0177	gay.stokes@richmondgov.com	<i>Main Municipal Representative</i>

Data Tracking Method(s): Excel & ArcGIS for commercial projects

City Setting: Mixed. Dense row homes downtown. Single family detached homes surrounding that. Rural mixed in as well as a historic urban mixed into city layout. Approximately a population of 210K

Outreach Effort: Community Meetings, HOAs, pet events, demo garden parties, WOM, SCM Maintenance photo contest, social media and community RB install event.

Main Driver for Stormwater Management: There was an internal employee cheerleading the project and moving it forward as a way of a managing stormwater.

Program Overview: RHH program revolves around four central SCMs. Pervious pavement, rain barrels, vegetative strips, and rain gardens. JRA administers the program for the city and greater watershed. JRA has homeowner pledge to take a certain amount of actions to control stormwater. They get to pick which ones they are comfortable with. Must pledge to do 3-5 of the actions listed. The program changes slightly every couple of years. Target homeowners (single and multifamily). After presenting at community meetings they pass around RB install list free barrels. Make an event out of installing barrels with neighbors & volunteers and program reps. There is a dedicated staff of 3 JRA staff and two Richmond staff working on this with a larger pool of volunteers. One inspector, social media person, community communicator. Public facilities have a one year warranty on SCM installs. Inspect other projects after 3 years. If project requires a permit then it also requires a maintenance report. The City has a pretreatment stormwater staff that spend some time.

Contractors: Require contractors to have business license of Richmond, engineering licenses if doing a big project. At a minimum require contractors follow VA Tech BMP clearing house. Don't train contractors directly. Send them through a statewide certification program.

www.richmondgov.com/PublicUtilities/StormwaterOutreach.aspx | <https://jrava.org/what-you-can-do/river-hero-homes/>

Montgomery County, Maryland: RainScapes Program, Sacred Grounds Program

Administrators: Montgomery County Department of Environmental Protection

Contact(s):

Anne English	240-777-7759	Ann.English@montgomerycountymd.gov	<i>Main Municipal Representative</i>
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Data Tracking Method(s): No response

Setting: Smart Growth County near International hub (DC) a lot DYL environmentalist live here. Lot of forested land.

Outreach Effort: Host workshops, 4-part training session, Facebook ads, strategic email blast, Radio add, tabled at county fair, and hosted a watershed summit, coordinated with landscaping association and home associations and work with community colleges.

Main Driver for Stormwater Management: Stormwater permit requirements/ residents were calling for it to the city council and advocacy groups.

Program Overview: Home owners can apply for rebates on installing SCMs on their property. Up to \$2,500 available in rebates for rain gardens, conservation landscaping, hardscape replacement/removal, rain barrels/cisterns as well as green roofs

Contractors: It is up to the homeowner to find the contractors to do the work dealing with this program. There is a contractor list of business who have participated in the RainScape professional training series.

<https://www.montgomerycountymd.gov/water/rainscapes/>

Philadelphia, Pennsylvania: Rain Check Program, Green City Clean Water Program

Administrators: Philadelphia Water Department; Philadelphia Sustainable Business Network, Pennsylvania Horticultural Society

Contact(s):

Jeanne Waldowski	215-685-4945	jeanne.waldowski@phila.gov	<i>Main Municipal Representative</i>
Zach Popkin	215-988-8849	zpopkin@pennhort.org	<i>Non Profit Partner</i>
Rosemary Howard	215-988-8767	rhoward@pennhort.org	<i>Non Profit Partner</i>

Data Tracking Method(s): Microsoft Office, ArcGIS and Sales Force

City Setting: Very Dense Urban, 1.5 million row homes. Have ms4 and CSO areas

Outreach Effort: Community Meetings, printed media, WOM, Workshops, social media, community RB install event, Blog, photo contest,

Main Driver for Stormwater Management: Inspired by DC's RiverSmart Homes, fee for commercial changed to per the amount of hardscape present. Resident's fee unchanged. So wanted offer them something too in terms of deal. Wanted to teach them and garner support for larger endeavors.

Program Overview: Home owners can sign up for a free rain barrel that is optionally wrapped in design. And up to \$2,000 per property in copays on SCMs. They also offer rain gardens, pervious pavement, and impervious surface removal. The process typically goes as follows: register online or at an event followed by a mandatory educational workshop. The city holds 5-6 of these workshops throughout the city a month. After workshop ends participants have a chance to sign up for a barrel right then and there. If homeowner wants a landscaping feature, they have a consultation by contractor and work with them to fill out paperwork. They sign a waiver of participation. After PWD reviews and approves plans and designs, contractor installs the SCM. Participant then fills out an "after service" survey. QA inspections happen after install. Homeowner have option to get a full house inspection for stormwater management recommendations. There is about 4 staffers who manage the program. The workshop for residents is mandatory in order to participate. It is an hour long and they learn about the program and stormwater management in general.

Contractors: Philadelphia Sustainable Business Network helps coordinate contractors and provides some funding for training and networking opportunities. They pay contractor \$200 per assessment. Pervious pavement, follows ICPI regulations. Contractors are also targeted in the hopes of creating green jobs. Contractors must have ICPI training if doing pavements, proof of SCMs specific installs, business license. Contractors can be removed from participating in the program for poor communication or poor install quality. Contractors are trained every year for RB installing

www.phillywatersheds.org/whats_in_it_for_you/residents/raincheck

Portland, Oregon: Private Property Retrofit Program

Administrators: City of Portland Bureau of Environmental Services

Contact(s):

Josh Robben	503-823-7778	joshua.robben@portlandoregon.gov	<i>Main Municipal Representative</i>
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Data Tracking Method(s): ArcGIS and SQL Server Database

City Setting: Dense Urban, there is a river through the city as well, mostly single family detached homes

Outreach Effort: Is initiated but not main driver of program. Want to just capture stormwater wherever possible. Have Online section on agency website. Write target properties a request letter to participate.

Main Driver for Stormwater Management: Volume reduction in CSO areas, tied to stormwater permit. CSO is $\frac{1}{2}$ of city, $\frac{1}{2}$ MS4 730k population

Program Overview: Have two parallel programs, pull from a list of contractors, target commercial properties too. Fully staffed they use 4 employees. Work on targeting low hanging fruit and based on water quality/ capture needs. Came up with a cost benefit analysis to identified working areas. GI designed to a 10 year design flood capacity (3.6 inch storm). Have each SCM receive an inspection plan and keep in records with city and property owner. This plan is signed by gov. and property owner. 14k records. Inspections are not random but prioritized by land use, and condition. Usually inspect a couple years after install. Portland has dedicated employees who spend a large amount of time. Track all data internally. 200 retrofits to date but seeing water quality benefits from it. Track success from the amount of gray infrastructure getting implemented reduction. Reduced loads to CSOs and CSO events. Conditions of facilities is tracked on what they generally are year to year. They don't focus on barrels because they are hard to install and maintained. Do allow turf RGs but most people want plants in them. City sends them a letter inviting a property owner to the program. Then someone (gov) comes out and meets with them and walk the land. Then walk with a contractor for greater details and plant selection. Install and maintain for next year to establish vegetation. This work is only done in CSO areas and hard to justify in MS4 areas.

Contractors: Use a list of government approved contractors. Have a dedicated gutter contractor for this if house needs gutter work. Design work is done in house both commercially and residential projects.

www.portlandoregon.gov/bes/61504



Prince George's County, Maryland: Rain Check Program

Administrators: Chesapeake Bay Trust | Prince George's Department of the Environment

Contact(s):

Deborah Weller	301-883-7161	dmweller1@co.pg.md.us	<i>Main Municipal Representative</i>
Hannah Martin	410-974-2941 x114	hmartin@cbtrust.org	<i>Non Profit Partner</i>

Data Tracking Method(s): Micro Edge

Setting: Mainly residential single family detached homes.

Outreach Effort: Homeowner events, printed material, website, word of mouth and demonstration project at a local nursery

Main Driver for Stormwater Management: Person within agency pre 2014 really pushed for this program internally. Followed after Montgomery County

Program Overview: CBT is a grant making nonprofit in Maryland that has been helping municipalities fulfill their stormwater permits through these grants. Rain Check program mainly targets single family homes and landscape contractors. Residents get up to 4k in rebates, commercial 20k for cisterns, gardens, and/or pavers. City employees pay the homeowners, CBT fills out the paperwork and perform pre and post inspections. Most people just get a rain barrel. They do offer a preconstruction grant for property owners who don't have the funds if cosponsored by community nonprofit. This can pay for up to 80% of the cost. There is a pre install visit to make sure everything is in order. The homeowner and CBT gather Landscape contractor information and a perc test is performed. Most of the time homeowners perform this test. Gather more design details then CBT submits app to County for approval. There is a final post inspection before check is issued once paperwork is approved. Depending on homeowner the entire process can take 16+ weeks to complete from start to finish. Currently three people work on this program. Two with the county and one CBT administrator

Contractors: There is not a list of certified contractors, but there is a list of preferred one's on the county website. They undergo a general level of vetting by CBT and county. They need to have their business license in county and are encouraged to do more in-depth training. County is not responsible for the quality of the projects. Up to homeowner and landscaper. Homeowner is responsible for maintenance. The area has a Chesapeake Bay regional training course to learn about multiple county and program requirements at one time. Don't do too much training through the program just generally check contractor's work. Working with community college to develop a one day training for interested contractors.

<https://cbtrust.org/prince-georges-county-rain-check-rebate/> | <http://www.princegeorgescountymd.gov/310/Rain-Check-Program>

Santa Monica, California: Rain Harvesting Rebate, Downspout Redirect Rebate, Landscape Rebate Program

Administrators: Office of Sustainability and the Environment | Prince George's Department of the Environment

Contact(s):

Neal Shapiro	(310) 458-8223	neal.shapiro@smgov.net	<i>Main Municipal Representative</i>
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Data Tracking Method(s): Microsoft Access and ArcGIS connected together

Setting: Dense Urban, very thin, lots 50ft wide lots, next to ocean. Also has very larger lots for private residents.

Outreach Effort: Community events, social media, printed material, city website, email signatures

Main Driver for Stormwater Management: No response

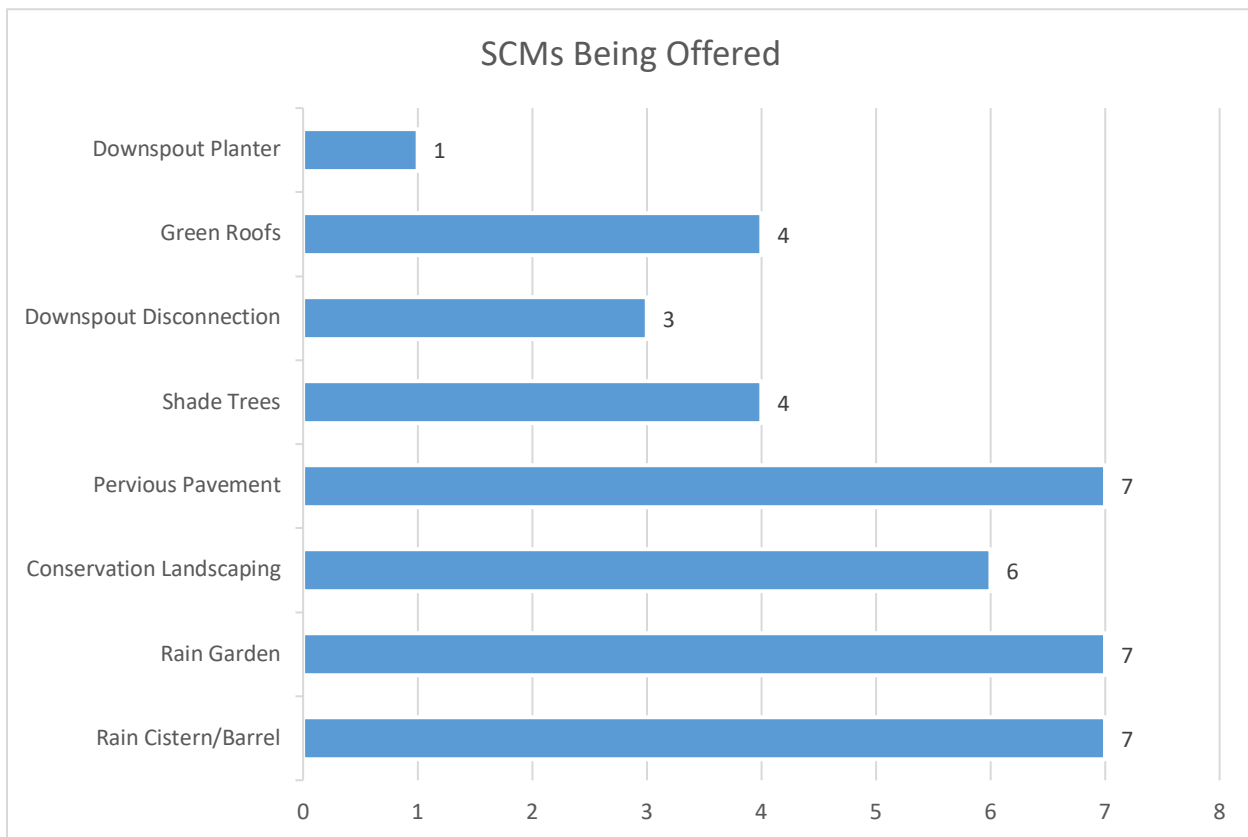
Program Overview: One paid government staffer working on this program. Residential Single family homeowners can get a rebate for a rain garden (\$1,000) or cistern (\$1/gallon - max \$2,000). There are other rebates offered as well. Submit online application. See the city's website for Rebates and go through the pages to see what is involved. City gets the application and opens a folder. I get the folder and contact the applicant if need assistance in evaluating the property and what can be installed; offer onsite consultation. Or owner can install without assistance if he/she knows what to do. Applicant does all the work to procure products, systems either by oneself or with a contractor City not involved. Applicant installs system or his/her contractor; City called for inspection to verify. Provide to city receipts/invoices of all paid expenses. City processes a rebate check.

Contractors: No formal training is provided. Review the literature on the city's website on the system and maintenance, though often comes from product vendor, and contractor installing the system.

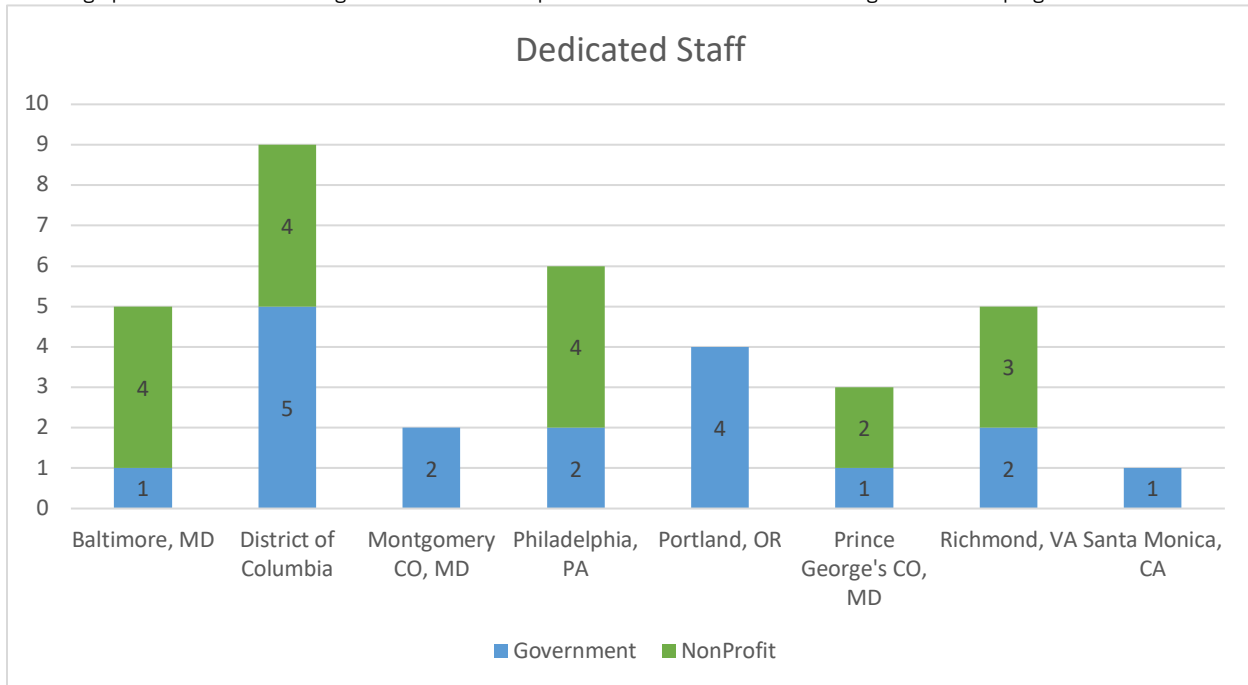
<http://water.smgov.net/rebates>

Program Comparison Charts

This bar graph shows how many of the interviewed programs offer incentives for these types of SCMs.



This bar graph shows the number of governmental and nonprofit staff dedicated to administering the incentive program

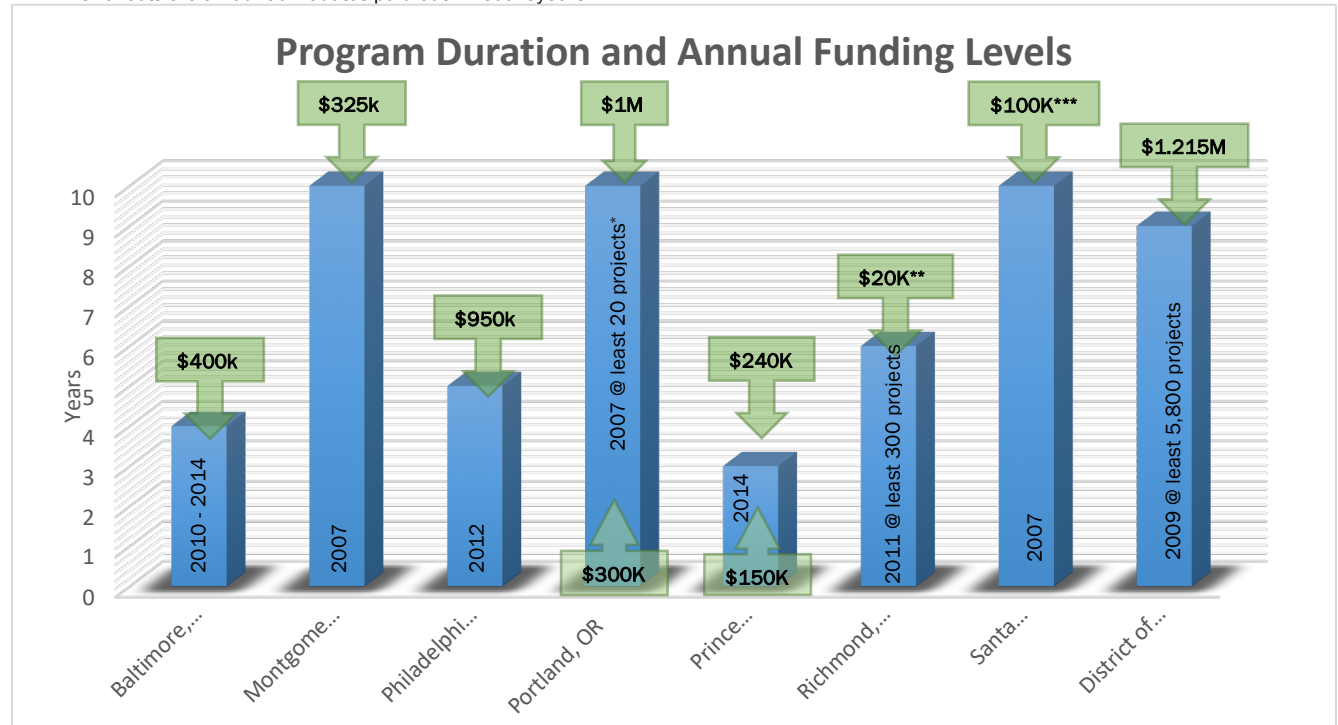


This bar graph shows how long each program has been running/ran, initial/current yearly funding and start date. Excludes staffing costs.

* Portland only offers this program to properties in the CSO areas

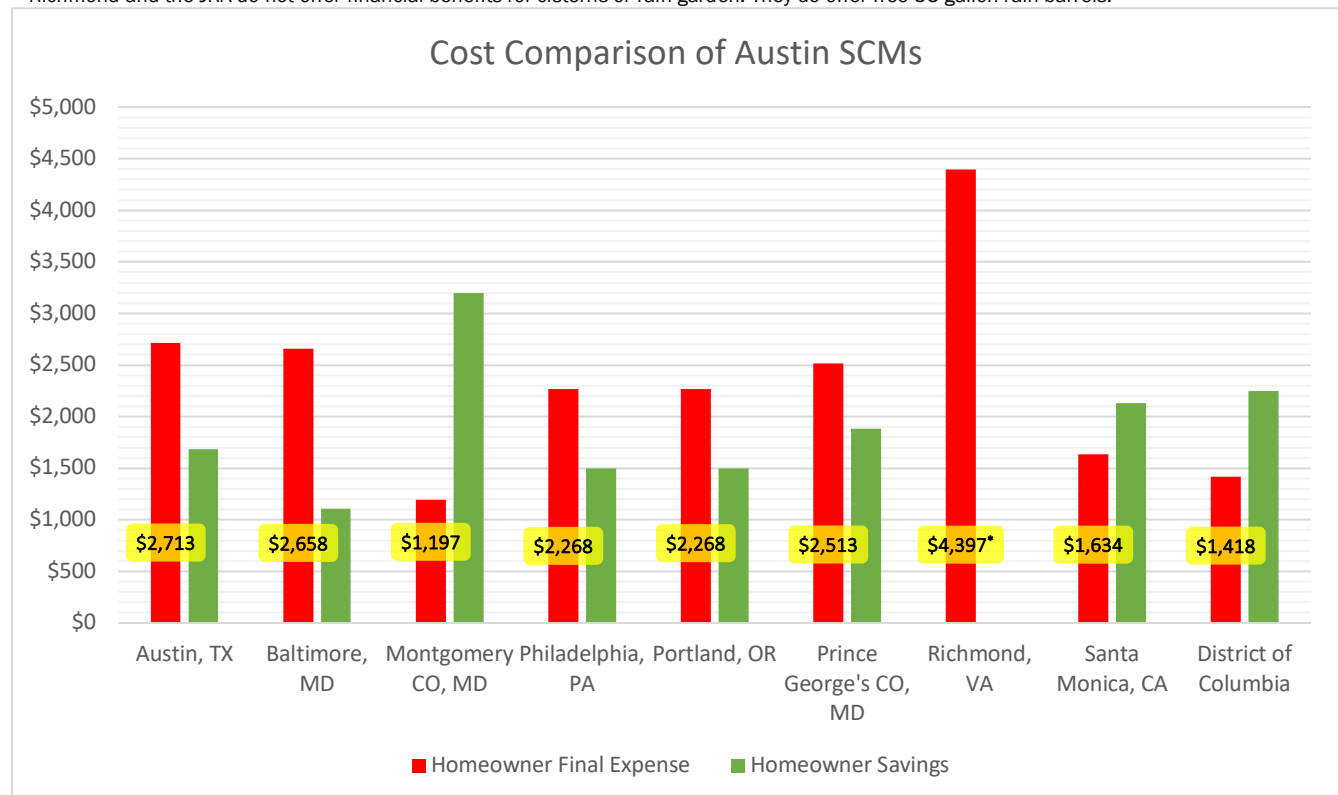
** This reflects only James River Associations estimated Budget

*** This reflects the amount of rebates paid out in recent years.



This bar graph shows the estimated cost for two cisterns and a 100sqft rain garden within the various existing incentive programs. The lower the red bar the better for the homeowner.

* Richmond and the JRA do not offer financial benefits for cisterns or rain garden. They do offer free 55 gallon rain barrels.



Incentive Program Overview

Program	Stormwater Fee	Stormwater Fee Discount	Resident Incentive Program	Commercial Incentive Program	Rebates	Copays	Nonprofit Partner
Baltimore, MD	Based on Amount of hard space	Up to 20% of Fee	No longer available	Focus on houses of worship	No Longer Available	N/A	Yes, One city wide partner
Montgomery CO, MD	Based on Amount of hard space	Up to 80% of Fee	Yes, Only Rebates	Yes, Only Rebates	Up to \$2,500 Res; 10k Com.	N/A	No
Philadelphia, PA	Flat Fee for Res; relative for Com.	For com. Properties only	Yes, Cost share	Just on fee discount	N/A	Similar to copay; cost hare	Yes, One city wide partner
Portland, OR (only in MS4 areas)	Based on Amount of hard space	Up to 100% of Fee	Yes, covers most, but very prescriptive	N/A	N/A	Yes, covers most, but very prescriptive	Mostly in house, with a trusted set of contractors
Prince George's CO, MD	Based on Amount of hard space	Up to 100% of Fee	Yes, Only Rebates	Yes, Only Rebates	Up to \$4,000 Res; 20k Com.	N/A	Yes, One region wide partner
Richmond, VA	Based on Amount of hard space	Up to 50% of Fee	Yes, free barrel and lots of support	N/A	N/A	N/A	Yes, One region wide partner
Santa Monica, CA	SW User Fee is a yearly flat fee; Clean Beaches & Ocean Parcel Tax tied to Consumer Price Index	No	Yes, Only Rebates	N/A	Up to \$9,000 Res	N/A	No
District of Columbia	Based on Amount of hard space	Yes up to 4% in one agency and 50% of another agency charge	Yes, Copays &/or Rebates	Yes, Only Rebates	\$3,200+ Res. available	Yes, around 10% of actual cost	Yes, One region & one city wide partner

Unique Highlights

- ▶ **Baltimore, Maryland**
 - Successful Because: Extensive research was done beforehand, to determine what it would take for Baltimore residents to participate.
 - They have a really robust stormwater fee discount program, which offers a lot of traditional as well as nontraditional ways to qualify.
 - Public demonstration projects include, a synthetic wetland project as well as a floating trash trap in their harbor.
- ▶ **District of Columbia**
 - Successful Because: The auditors are government employees. The focus is on overall SW management per property and not units per transaction.
 - Their auditor assessment method is free and comprehensive. The program offers copays first with additional rebates.
 - Have target watershed campaigns/incentives.
- ▶ **Richmond, Virginia**
 - Successful Because: The local James River Association provide several ways to help install &/or maintain SCMs as a community as opposed to by individual property owners i.e. photo contest to encourage maintenance.
 - They provide optional rain barrel wraps for homeowners to decorate with.
 - Train all city employees on SW management.
- ▶ **Montgomery County, Maryland**
 - Successful Because: Streamlined process with City staff.
 - They host a watershed summit for potential contractors or homeowners to learn more about the program.
 - They are working with the local community college to help train contractors.
- ▶ **Philadelphia, Pennsylvania**
 - Successful Because: Water related activities like this for the city are housed within one city agency, streamlining process
 - Offer a downspout planter (rain garden in a box) as an option in their program.
 - They have photo contest to encourage residents to take care of the SCMs
- ▶ **Portland, Oregon**
 - Successful Because: Very selective in larger projects to fund and they are flexible in options offered.
 - Maximizing SCMs on property has positively impacted water quality
 - Worked their downspout disconnection program to extinction.
 - Have a gutter professional on call for projects, if needed.
- ▶ **Prince George's County, Maryland**
 - Successful Because: Fill most of the paperwork for the participants for convenience and expediency
 - Have contractor participate in a regional training to cover all types of GI though the Chesapeake Bay
- ▶ **Santa Monica, California**
 - Successful Because: Streamlined process with City staff.
 - Residents voted to fund SW management through their Clean Beaches & Ocean Parcel Tax.
 - Demonstration projects at very public places like the airport.