



GREEN CITY, CLEAN WATERS

Year in Review | 2011 - 2012



Dear Valued Water Department Partner:

I am pleased to share the first edition of the *Green City, Clean Waters* Year in Review with you!

The *Green City, Clean Waters* Year in Review celebrates the accomplishments of the Philadelphia Water Department and its partners, working in collaboration with Philadelphia's communities, since the signing of the *Green City, Clean Waters* plan. On June 1st, 2011 the environmentally forward-thinking *Green City, Clean Waters* plan was publicly endorsed by the Pennsylvania Department of Environmental Protection (PA DEP) and the U.S. Environmental Protection Agency (EPA) for its innovative approach to cleaning up our City's streams and rivers. In the months since the plan was approved, great progress has been made. Philadelphians should feel proud as we work together to demonstrate to the rest of the region, country and world how green stormwater management leads to clean, enjoyable waterways that support vibrant neighborhoods and sustainable cities.

Green City, Clean Waters details how we can improve the health of Philadelphia's creeks and rivers over the next 25 years and beyond, primarily through green investments, on an incremental block-by-block scale. Green stormwater management projects, such as rain gardens, stormwater planters and tree trenches, can reduce water pollution while enhancing our parks, streets and business corridors. These green infrastructure projects will soak up considerable amounts of stormwater runoff - rainwater and melting snow - that falls on hard, impenetrable surfaces. By capturing runoff close to where it lands, green infrastructure works to keep excess water out of our underground sewer pipes thereby helping to ensure that polluted water does not end up in our creeks and rivers; improving our essential natural resources and making our neighborhoods more desirable places to live, work and play.



What can **Green City, Clean Waters** mean for Philadelphia?

If we continue to forge partnerships across our watersheds, it will mean:

- Improved water quality
- Beautification of neighborhoods
- Improved quality of life
- Enhanced recreation
- Reduction of excess heat
- Better air quality
- Restored ecosystems
- Increased energy savings
- Climate change offsets
- More green jobs



I am proud of the enormous amount of work accomplished by Philadelphia Water Department staff and thankful for the great contributions made by PWD's partners in this first year (June, 2011 – June, 2012). These combined efforts have resulted in the design of 184 green stormwater infrastructure projects and 17 fully constructed green projects in addition to over 9,300 Philadelphians of all ages experiencing a *Green City, Clean Waters* educational activity, lesson, or event.

I hope you enjoy the pictorial lens provided by the *Green City, Clean Waters* Year in Review and that you find inspiration in these pages. We want to continue building our relationships with all communities throughout Philadelphia, while aligning new partners, harnessing resources and making Philadelphia a more sustainable city.

Thank you for your support!

Howard M. Neukrug, P.E., BCEE
Water Commissioner, City of Philadelphia

For more information, please visit:
www.phillywatersheds.org

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Soak It Up Philly! is a community outreach campaign led by the Philadelphia Water Department that helps build excitement around green stormwater infrastructure. See page 30 for more.

Stormwater Runoff

Stormwater runoff is rain or melting snow that flows over our yards, streets, buildings, parking lots and other hard surfaces. In cities, where buildings and other impervious surfaces cover much of the urban landscape, stormwater cannot soak into the ground and instead runs off, creating a rush of fast-moving water that picks up pollutants, such as trash and motor oil as it travels. Too much stormwater can overwhelm our combined sewer pipes. This impact floods our creeks and rivers, degrading the health of our waterways.

Green Stormwater Infrastructure (GSI)

Green Stormwater Infrastructure (GSI) tools are designed to capture runoff close to where it lands on the City's hard surfaces to help it soak into the ground or slowly enter the sewer system, ensuring that polluted water does not end up in our creeks and rivers - the source of our drinking water. Check out examples of green stormwater tools on the following pages.

downspout planters

A downspout planter is a planter box connected to a roof downspout to allow stormwater runoff from a roof to flow into the planter box. The downspout planter is filled with gravel, soil and vegetation and is specially designed to not only irrigate the plants, but to also delay the stormwater runoff from re-entering the sewer system. Downspout planters come in a variety of sizes and can be constructed with various materials.

green roofs

A green roof is a roof that has specially selected plants on it and is comprised of multiple layers, including a waterproofing layer, a drainage layer and an engineered planting media, which slows down and reduces stormwater runoff from the roof.

infiltration trenches

An infiltration trench is an underground channel filled with rock, which is designed to either help stormwater runoff soak into the ground or to slow it down. As stormwater runoff enters the trench, usually through an inlet or a porous surface, such as natural landscape materials or porous paving, it fills the voids between the rocks, seeps to the bottom of the trench, and slowly soaks into the soil beneath it.

3 Completed 14 Designed

porous paving

Porous paving is a hard surface made of either paving stones, bricks, pavers, a particular concrete mix or a particular asphalt mix that allows water to soak through the surface. Porous streets are designed to allow stormwater to soak through the paved surface into a stone drainage layer beneath before soaking into the ground.

1 Completed 1 Designed

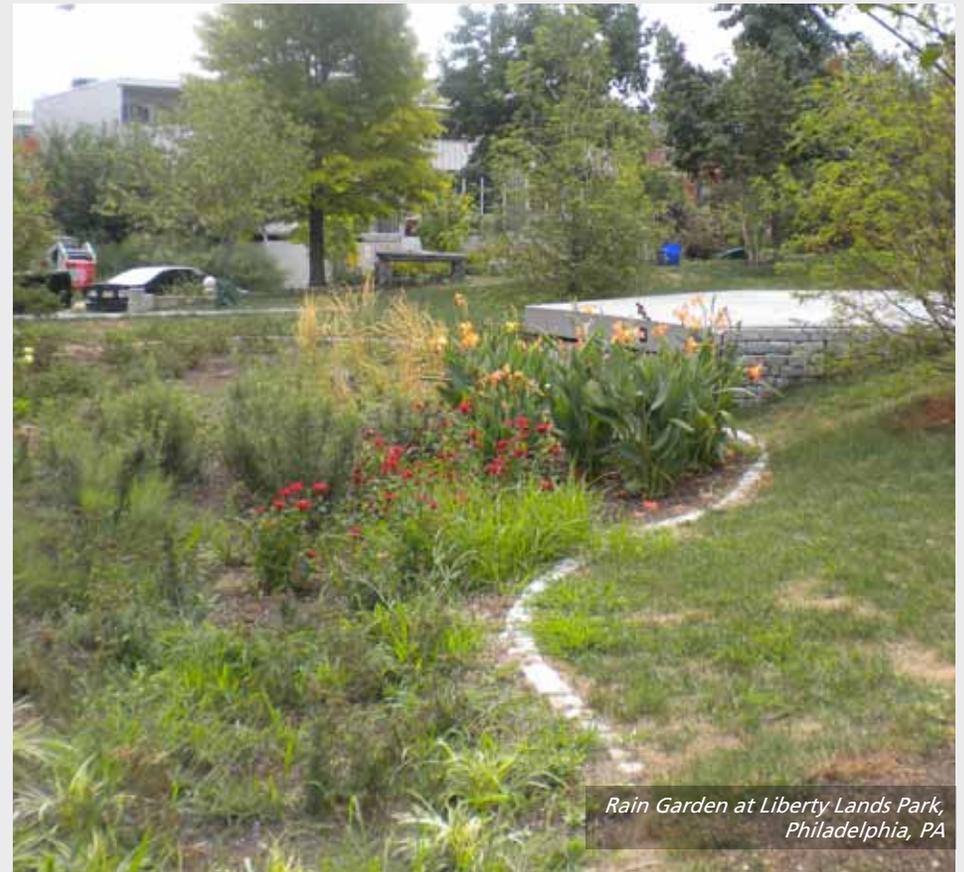
rain barrels

A rain barrel is a storage container connected to a roof downspout that captures stormwater runoff from the roof. The water collected in the barrel can then be used to irrigate gardens and lawns.

rain gardens

A rain garden is a garden that is planted in a shallow landscaped depression to collect stormwater runoff flowing from nearby surfaces such as a yard, patio or a nearby downspout connected to a roof. Rain gardens filter pollutants, replenish groundwater and help irrigate the landscape while also storing stormwater runoff.

6 Completed 10 Designed



Rain Garden at Liberty Lands Park,
Philadelphia, PA

stormwater basins

A stormwater basin is a large underground basin designed to hold stormwater during heavy rainstorms.

1 Designed

stormwater bumpouts

A stormwater bumpout is a vegetated street-level curb extension. Stormwater runoff flows off of the street and enters the bumpout through an inlet at street level. Additional stormwater runoff is captured from the sidewalk. Stormwater bumpouts manage stormwater by providing storage, allowing the runoff to soak into the ground, evaporate, and transpire through the plants. Stormwater bumpouts can also help with traffic-calming and aid pedestrian safety by reducing street crossing distance.

7 Designed

stormwater planters

A stormwater planter is an in-ground planter within the sidewalk designed to manage stormwater runoff that flows off of the street and enters the sidewalk planter through a connected street inlet. The stormwater planter is typically set on a gravel or stone layer and topped off with soil and plants. These planters manage stormwater by providing storage space that allows the runoff to soak into the ground, evaporate, and transpire through the plants.

12 Designed

stormwater tree trenches

A stormwater tree trench is a stone trench that includes one or more trees. Above ground they may look like typical street trees. A stormwater tree trench, however, manages stormwater that flows off of the street and enters the trench through a street inlet. The trench manages stormwater by providing storage space that allows the runoff to soak into the ground, evaporate, and transpire through the tree leaves.

7 Completed 138 Designed



A Downspout Planter

stormwater treatment wetlands

A stormwater treatment wetland is a man-made, vegetated system that mimics a natural wetland. They are designed to manage stormwater runoff and filter pollutants through natural landscaping.

swales

A swale is a shallow open channel in the ground, designed to transport stormwater runoff, which can be planted with a combination of grasses, shrubs or trees. Swales can also be built to slow stormwater runoff down so it can soak into the ground.

1 Designed

DEP and PWD Sign *Green City, Clean Waters* Agreement

June 1st 2011 welcomed the historic signing of a consent agreement between the Pennsylvania Department of Environmental Protection (PA DEP) and the Philadelphia Water Department (PWD), officially approving the *Green City, Clean Waters* plan. This approval validates the 25-year, \$2 billion plan to manage Philadelphia’s stormwater largely through green infrastructure. Officials from PWD and PA DEP met in Norristown to raise a tap-water toast and sign the agreement.



PWD and PA DEP officials meet to sign the Green City, Clean Waters Agreement, PA DEP Southeast Regional Office, Norristown

“We are thrilled and grateful that the DEP has recognized the incredible environmental and public value of this plan and has worked with the City to embrace its vision. As a sustainable approach to stormwater issues, Green City, Clean Waters upholds the tenets of GreenWorks Philadelphia and makes significant progress towards Philadelphia becoming the greenest city in the country.”

- Philadelphia Mayor Michael Nutter

partnerships



(L-R): Adam Bram and Jenifer Fields from PA DEP, Philadelphia Water Commissioner Howard Neukrug, Deputy Commissioner David Katz, and Deputy City Solicitor Gerald Leatherman of PWD, PA DEP Southeast Regional Office, Norristown



Philadelphia and EPA Sign Partnership Agreement

On April 10th, 2012, the U.S. Environmental Protection Agency (EPA) gave *Green City, Clean Waters* national backing when it agreed to partner with the City of Philadelphia on the 25-year plan to use primarily green infrastructure to manage stormwater runoff. EPA Administrator Lisa Jackson joined Mayor Michael Nutter, City of Philadelphia Water Commissioner Howard Neukrug, EPA's Mid-Atlantic Regional Administrator Shawn Garvin and other officials to confirm EPA's support for the program at an official signing ceremony at the Fairmount Water Works Interpretive Center in Philadelphia.

"We want to see the benefits of green infrastructure taking hold in other large metropolitan areas, not just Philadelphia."

- EPA Administrator Lisa Jackson,
WHYY Newsworks

(L-R): Philadelphia Water Commissioner Howard Neukrug, Mayor Michael Nutter, EPA Administrator Lisa Jackson and EPA's Mid-Atlantic Regional Administrator Shawn Garvin sign the Green City, Clean Waters Partnership Agreement, Fairmount Water Works Interpretive Center, Philadelphia

Newsworthy!

Philadelphia's innovative approach to stormwater management has garnered a lot of media attention, both locally and nationally. Check out a handful of articles highlighting *Green City, Clean Waters*.

- ["Street Smarts"](#) Time Magazine
- ["Philadelphia Cleans Up Storm Water With Innovative Program"](#) National Geographic
- ["Water Plan for the Century: Philadelphia's Breakthrough"](#) Washington Post
- ["EPA, Philadelphia Sign \\$2 Billion Agreement To Use Green Infrastructure to Manage Flows"](#) Bloomberg BNA
- ["Philadelphia Moves Ahead with 25-year Water-Management Plan"](#) Philadelphia Inquirer
- ["Go With The Flow: PWD's *Green City, Clean Waters* Program Gushes With Possibilities"](#) Grid
- ["EPA Approves Philly's \\$2 Billion Green Stormwater Plan"](#) Newsworks

"After years of working with the Water Department and its regulators on the technical and legal details of Green City, Clean Waters, PennFuture is excited to see what was once just a two-dimensional vision becoming a three-dimensional reality as green infrastructure projects are springing to life, changing the landscape of Philadelphia and making the city a better place to live, work and play."

- Brian G. Glass
Citizens for Pennsylvania's Future (PennFuture)

newsworks

The Washington Post



TIME

NATIONAL
GEOGRAPHIC™

grid

Bloomberg

The Philadelphia Inquirer



WHYY Premieres *Green City, Clean Waters*

In April, WHYY aired the latest GreenTrek documentary showcasing *Green City, Clean Waters*. This 30-minute film clearly explains the challenges of upgrading our aging water infrastructure to prevent pollution in local rivers and streams. Water Department employees, City leaders and local partners describe how the new green infrastructure approach will help address these challenges. This and other PWD videos can be seen on [Vimeo](#).

Digital Media

Successful implementation of *Green City, Clean Waters* requires understanding and participation from everyone in Philadelphia. For up-to-date information about the Water Department's initiatives, [follow PWD on Twitter](#), [like us on Facebook](#) and [check out our Philly Watersheds Blog!](#) (View page 42 for all web addresses.)

Philadelphia's First Green Stormwater Bumpouts at Queen Lane

Last summer PWD installed the City's first stormwater bumpouts on Queen Lane in East Falls. Measuring 8 feet deep and 24 to 80 feet in length, these six bumpouts collect stormwater runoff from the street and sidewalk, directing it to the soil where it soaks into the ground. PWD planted each bumpout with a mix of native grasses, perennial plants, and trees specially selected to manage as much runoff as possible on site.

"In our work, we've already seen how designing with green stormwater infrastructure can transform a park, a block, or even an entire neighborhood. Our partnership with the EPA and PWD on Infill Philadelphia: Soak it Up! is an exciting opportunity to help produce greater awareness, advocacy, and collaboration around green tools—and the next wave of green projects in the city."

- Beth Miller
Community Design Collaborative

7
stormwater bumpouts
designed



East Falls, Philadelphia

Stormwater Tree Trenches

A stormwater tree trench is a stone trench that includes one or more trees. Above ground they may look like typical street trees. A stormwater tree trench, however, manages stormwater that flows off of the street and enters the trench through a street inlet. The trench manages stormwater by providing storage space that allows the runoff to soak into the ground, evaporate, and transpire through the tree leaves.

7
stormwater tree trenches
constructed
and
138
designed

“Green City, Clean Waters means more tree planting in the City! The TreePhilly crew is delighted to be able to partner with the Philadelphia Water Department to support the addition of new green infrastructure in the form of trees, which clean our water and reduce stormwater overflow for a greener, cleaner city.”

- Erica Smith Fichman
Philadelphia Parks and Recreation



*Stormwater tree trenches outside of John F. Hartranft School,
Eastern North Philadelphia*

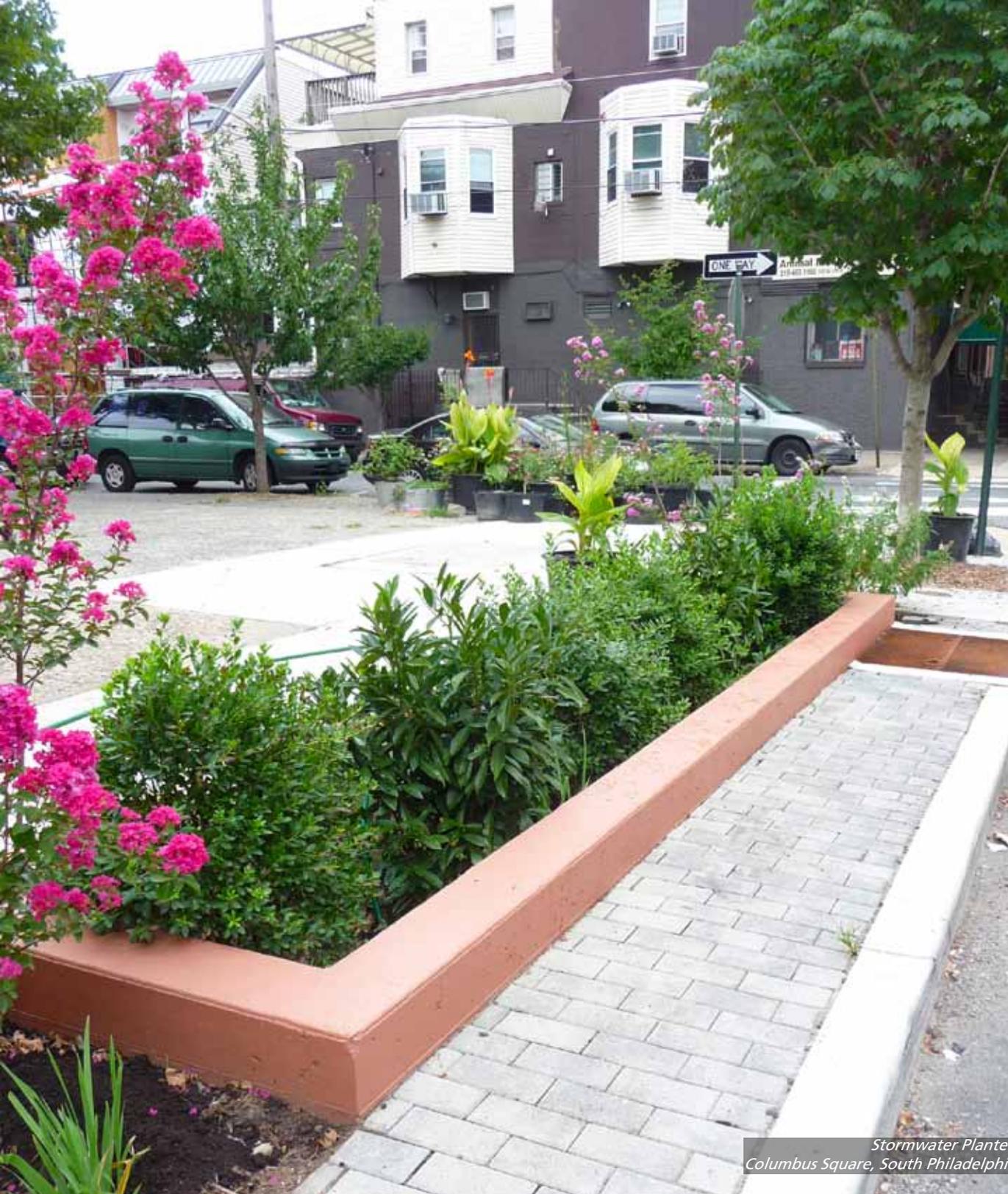
Unveiling of Philadelphia's First Porous Green Street

In May, 2011, the City unveiled its first porous street in South Philadelphia as a result of collaboration between the Philadelphia Water Department, the Philadelphia Streets Department and the Bella Vista neighborhood. Unlike traditional asphalt, the asphalt on the 800 block of Percy Street allows stormwater to soak through the surface where it is stored underground in a stone drainage layer until the soil absorbs the water. Newsworks Published an [article](#) and PWD released a [video](#) made by GreenTreks about the project.



- 1 porous surface designed and an additional
- 10 acres of porous surfaces approved for private development





*Stormwater Planter,
Columbus Square, South Philadelphia*

Stormwater Planters

A stormwater planter is an in-ground planter within the sidewalk designed to manage stormwater runoff that flows off of the street and enters the sidewalk planter through a connected street inlet. The stormwater planter is typically set on a gravel or stone layer and topped off with soil and plants. These planters manage stormwater by providing storage space that allows the runoff to soak into the ground, evaporate, and transpire through the plants. The Columbus Square Planters, completed in 2010, can hold up to 7,100 gallons of stormwater every time it rains, enough to fill 142 bathtubs.

12
stormwater planters
designed

Vernon Park Rain Garden

The Tookany/Tacony-Frankford Watershed Partnership (TTF) led the revitalization of Germantown's Vernon Park with multiple partners, including the Philadelphia Water Department. Along with regularly organizing volunteers to clean the park, TTF and friends planted a rain garden which helps to manage stormwater at the park and improves the local waterways, making them cleaner and safer.

"We are so proud to work with the Philadelphia Water Department on this critical initiative! Green City, Clean Waters provides a model for us to follow as we work to protect and improve our 29 square mile urban watershed spanning both Philadelphia and Montgomery Counties. PWD's leadership and support enables us to inspire and educate residents and stakeholders about the potential for green stormwater management that will make a difference in their watershed communities."

- Julie Slavet
Executive Director, Tookany/Tacony-Frankford Watershed Partnership



TTF volunteers help plant a rain garden, Vernon Park, Germantown, Philadelphia



Ashley Schmid, TTF Education and Outreach Coordinator, educating at the Vernon Park Rain Garden, Germantown, Philadelphia

Urban Transformation: Penn Park



*Early construction at Penn Park,
University City, Philadelphia*

On September 15th, the University of Pennsylvania unveiled Penn Park, a 24-acre green space complete with athletic fields, 2 acres of open space and a canopy of over 500 trees. Open to the public, this new park would be notable anywhere but is a particularly remarkable transformation of an old industrial space. Native plants reduce the need for irrigation and soak up stormwater, and pervious synthetic play fields cover underground cisterns that capture the first inch of rainfall during every storm. These systems divert approximately 2,000,000 gallons of rain water from the Schuylkill River each year, about the same amount of water the average American household uses in 20 years!



*Completed Penn Park,
University City, Philadelphia*

"As the amount of permeable green space grows dramatically in University City, UCD is excited to partner with PWD on Green City, Clean Waters. At the neighborhood level, we look forward to continuing to identify innovative ways of managing stormwater that benefits the entire University City community, from our trailblazing institutions to our local businesses, to our extremely committed residents."

- Seth Budick
University City District (UCD)

Eadom Street Parking Lot De-paved and Adopted

NorthEast Treatment Center staff and patients, PWD's Waterways Restoration Team and other Water Department employees worked as a team to transform a 10,000 sq. ft. parking lot at Eadom and Bridge streets in Frankford into six large rain gardens. The rain gardens manage stormwater from two acres surrounding the site, allowing it to soak into the soil. In addition, the community members at the NorthEast Treatment Center were so engaged in the project that they adopted the site. This means that staff and patients have volunteered to help care for and maintain the rain gardens. Community partnerships like this are crucial to the successful implementation of *Green City, Clean Waters*.



Before construction of rain garden #1 of 6, Southeast end of Eadom Street parking lot, Frankford Valley, Philadelphia



During construction of rain garden #1 of 6, Southeast end of Eadom Street parking lot, Frankford Valley, Philadelphia



Educational demonstrations at Eadom Street Green Parking Lot Celebration, Frankford Valley, Philadelphia



*Finished rain garden #1 of 6,
Southeast end of Eadom Street parking lot,
Frankford Valley, Philadelphia*



*Educational demonstrations at Eadom Street Green Parking Lot Celebration,
Frankford Valley, Philadelphia*



"The forward thinking displayed by the Philadelphia Water Department in Green City, Clean Waters is integral to reaching our Greenworks goal of making Philadelphia the greenest city in America. Congratulations to PWD on your impressive first year of accomplishments. We look forward to many more!"

- Sarah Wu
Mayor's Office of Sustainability

6
rain gardens constructed
10
rain gardens designed

EPA Grant For Nebinger School

On April 26, 2012, George W. Nebinger School received about \$278,000 from the Environmental Protection Agency, Philadelphia Water Department and Partnership for the Delaware Estuary (PDE) to transform the urban schoolyard into a new green space that manages stormwater and serves as an outdoor classroom for the school's students. Additional grant money will be used to construct green stormwater infrastructure projects throughout the Bella Vista neighborhood. The school, located at 6th and Carpenter streets in South Philadelphia, will serve as a model green school in the city.

Check out the [South Philly Review's article](#) for more information.



Students learning about planting on Earth Day, George W. Nebinger School, Bella Vista, Philadelphia



Earth Day volunteers help plant flowers, George W. Nebinger School, Bella Vista, Philadelphia

Kensington CAPA- Top Green Project of 2012

The Kensington High School for Creative and Performing Arts (CAPA) was named one of the top 10 green projects of 2012 by the [American Institute of Architects](#) (AIA). Kensington CAPA, designed by SMP Architects and SRK Architects, is the first public high school in the nation to receive Platinum level LEED (Leadership in Energy and Environmental Design) certification. The high school manages all of its stormwater on site, using green roofs, porous pavement, rain gardens, rain barrels and rainwater harvesting for reuse.



*Kensington CAPA High School,
Kensington, Philadelphia*

Transforming Schoolyards Charrette

On May 10th, design professionals collaborated with students, faculty and parents from Henry C. Lea Elementary School in West Philadelphia and John B. Kelly Elementary School in Germantown. The [Community Design Collaborative](#), the [Philadelphia Chapter of the American Institute of Architects](#) and the Philadelphia Water Department co-hosted the event, which encouraged participants to think of creative ways to green the schoolyards. After a day of brainstorming, the teams presented [their designs](#) to a public panel.



*1 of 4 design teams brainstorming how to best green Philly's schoolyards,
Center for Architecture, Center City, Philadelphia*

Green Homes: Rebuilding Together Philadelphia

In an action-packed day in October, 2010, 100 volunteers installed 20 downspout planters, 15 rain barrels and a rain garden on three blocks in the Cobbs Creek neighborhood during a Green Homes Block Build organized by Rebuilding Together Philadelphia, PWD and partners. After this success, the Philadelphia Water Department ramped up its Green Homes program. Over the past year, Rebuilding Together Philadelphia staff and volunteers installed 34 more downspout planters at homes in West Oak Lane, Mantua, Germantown, Overbrook and Nicetown to soak up stormwater with green infrastructure. These Block Build events include critical home repairs, energy efficiency upgrades, tree planting, sidewalk remediation and clean-ups for several homeowners at once. PWD is excited to include green infrastructure in this list of modifications that galvanize neighbors to build their community and continue improvements.

"Wynnefield Residents Association is glad to be a part of PWD's initiative in exploring how going green can play an important role in revitalizing our neighborhood. Thanks for the opportunity."

- Brenda Williams, President
Wynnefield Residents Association



West Philadelphia resident with her new downspout planter

Green Homes: Rain Barrels

The Philadelphia Water Department's [Rain Barrel Program](#) continues to grow! Since 2002, PWD has distributed 2,766 rain barrels free of charge to residents throughout the City. At PWD sponsored rain barrel workshops, participants learn the benefits of managing stormwater runoff, and upon completion, are eligible for a free rain barrel. The total rain barrels installed since 2002 will prevent about 9,559,296 gallons of stormwater from polluting our waterways - enough water to fill almost 15 Olympic pools. This year, 478 barrels were distributed and installed by the Energy Coordinating Agency (ECA) on behalf of PWD.

478
rain barrels
installed this year



PWD's newest recycled rain barrel



*Northern Liberties resident,
Philadelphia*



*Darby Cobbs Watershed Partners,
Philadelphia*

Watershed Restoration Projects

PWD continues to develop its urban stream and wetland restoration program. This year, the Water Department completed two major stream restoration projects and two stormwater treatment wetlands. In addition, PWD continued to monitor the performance of completed projects along Cobbs and Tacony Creeks as well as the Saylor Grove Stormwater Wetland. PWD also moved forward with plans for four major stream restoration projects along Cobbs, Tacony, and Wissahickon creeks.



Wises Wetland, Fairmount Park, Roxborough, Philadelphia

The projects completed in the past year are:

- Wises Mill Run stormwater wetland
- Wises Mill stream restoration
- Bells Mill stream restoration
- Cathedral Run stormwater wetland

2
miles of
streams restored

3
acres of stormwater
wetlands created



Bells Mill Stream, Fairmount Park, Andorra, Philadelphia

Continued Progress of the American Shad



American shad found near Fairmount Water Works Fish Ladder, Philadelphia

Last summer, Pennsylvania Fish and Boat Commission (PFBC) biologists encountered an American shad nearly 37 miles upriver in the Schuylkill, marking the first time that shad has been spotted above Norristown since 1820, the year that the Fairmount Dam was constructed, prohibiting shad from ascending the river during their annual spring spawning run. American shad have continued to travel up the Schuylkill, and this past May, biologists from the PFBC observed several adult American shad passing through the Black Rock Fishway near Phoenixville. This progress is a testament to the success of shad restoration in the Schuylkill and the river's return to being a healthy habitat.

"It's exciting to see all of the innovative new projects coming out of the Green City, Clean Waters Plan. The Philadelphia Water Department continues to be an exemplary water company in the region."

- Lisa Wool
 Programs Director
 Partnership for the Delaware Estuary



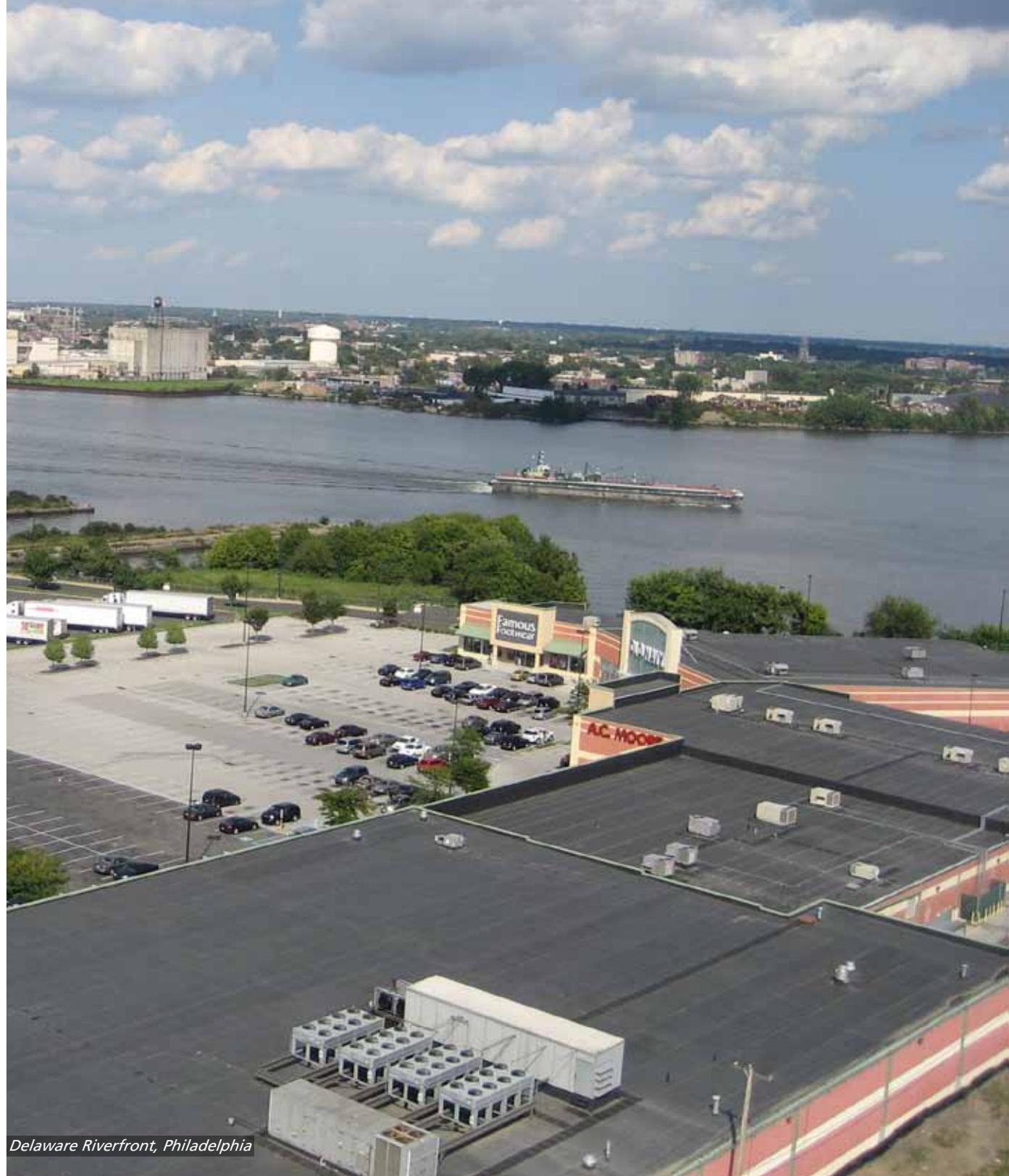
PWD debris skimming vessel collecting floating trash in Schuylkill River, near the Fairmount Dam, Philadelphia

Stormwater Management Incentives Program (SMIP) Created

Many commercial properties in Philadelphia have large impervious surfaces such as parking lots or warehouse roofs that present significant opportunities for stormwater management. This year, the City of Philadelphia, through the Philadelphia Water Department and the Philadelphia Industrial Development Corporation, established a new program that provides non-residential customers with financial incentives to manage stormwater runoff. In the first year of the program, the City awarded eight winners approximately \$3.2 million to create 65.5 greened acres. In addition to these grants and loans, non-residential customers in Special Services Districts can work collectively to get loans through the Stormwater Management Incentives Program - Business Improvement District Grants.

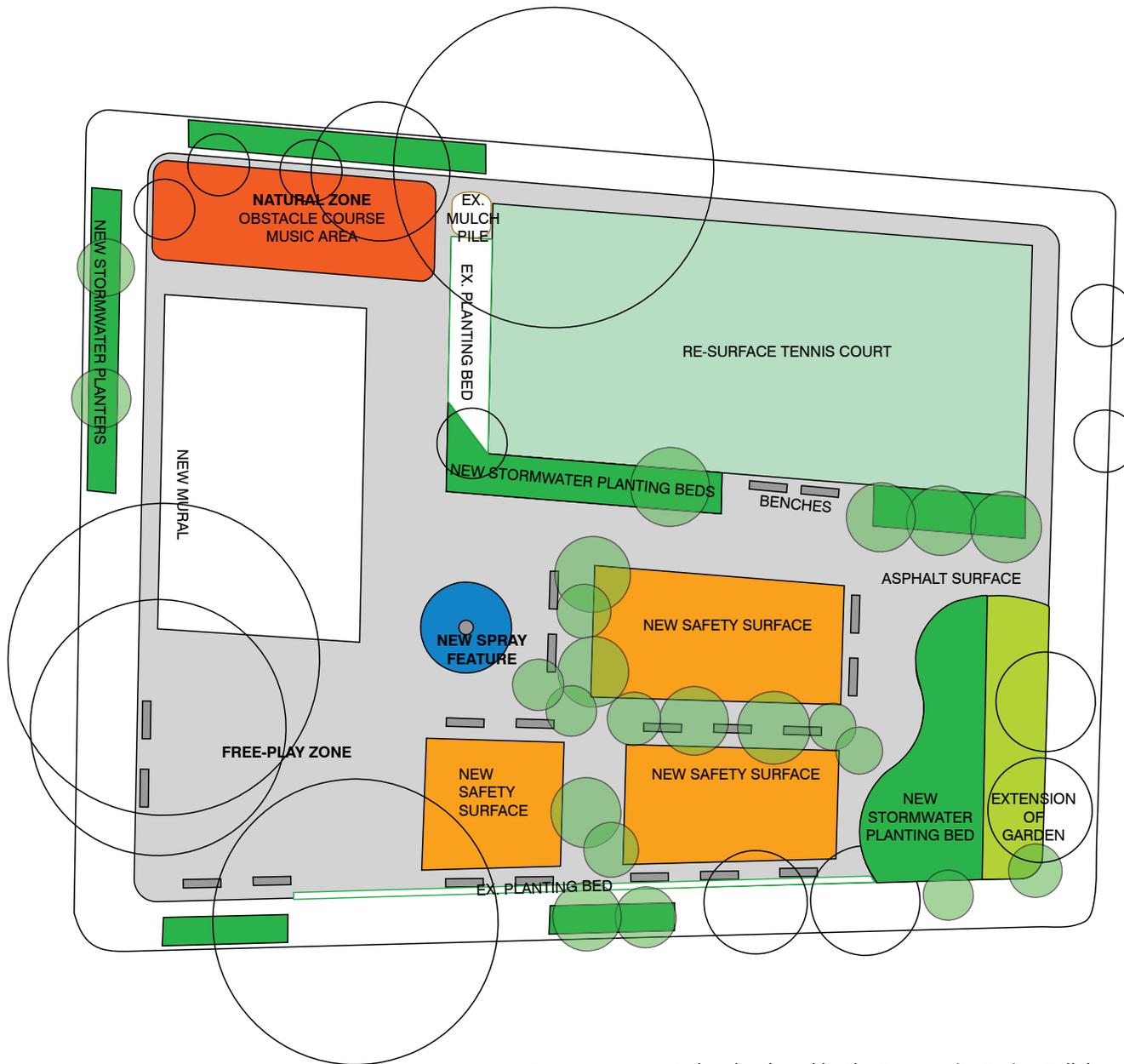
The 2012 SMIP Award Winners are:

- Green Street Friends School
- School District of Philadelphia
- Pennypack Woods Homeowners Association
- Methodist Home for Children
- Thomas Scattergood Behavioral Health Foundation
- ACE/Dougherty Company
- Westinghouse Lighting Corporation/
Sportsmen Ventures



Delaware Riverfront, Philadelphia

PWD Collects Community Input Online



Weccacoe concept plan developed by the Community Design Collaborative for the Friends of Weccacoe Park in Bella Vista illustrates the type of project that could be proposed through the Community Input Form.

The Philadelphia Water Department is excited to offer a new tool to gather community input on potential locations for green stormwater infrastructure projects: the Online Community Input Form. This form allows community members to submit locations for potential green stormwater infrastructure projects at schools, recreation centers, parks, public spaces, parking lots, vacant lots and streets.

If you would like a site in your neighborhood to be considered for a green stormwater management project, visit www.phillywatersheds.org/CIF.

“For NKCDC, it is crucial to consider physical, social, and economic factors in the aggregate in order to strengthen the community in a sustainable way. Green Cities, Clean Waters provides a glimpse into the long-lasting change that will bring Philadelphia’s neighborhoods into a cleaner, greener future.”

- Jamie Reese
New Kensington CDC

Unveiling of First Green Roof Bus Shelter

Even small spaces can make a difference in stormwater management! On June 15th, 2011, the Philadelphia Water Department partnered with the Mayor’s Office of Transportation and Utilities and Roofmeadow to plant a green roof on top of the bus shelter across from City Hall at 15th and Market. While only 60 square feet, the new roof will still help manage stormwater and is intended to inspire passersby to take on their own green stormwater management projects at home and in their communities.

A special thanks to Roofmeadow for providing our new green roof bus shelter pro bono!

demonstration



Green Roof Bus Shelter



Ari Miller of Roofmeadow installing the city's 1st green roof bus shelter, across from Philadelphia City Hall



Crowd at unveiling of green roof bus shelter, across from Philadelphia City Hall

“Green City, Clean Waters is the national model for city, state and federal governments working in partnership to protect our natural resources and wisely invest public and private dollars to benefit our neighborhoods and citizens for decades to come.”

- Andrew Stober
Mayor's Office of Transportation and Utilities

Over
8
acres
of green roofs
approved for private
development

Soak It Up, Philly!

Soak It Up, Philly! is a community outreach campaign led by the Philadelphia Water Department that helps build excitement around green stormwater infrastructure (GSI). We can realize the *Green City, Clean Waters* vision throughout Philadelphia by creating opportunities for citizens to engage in the stewardship of GSI, by inspiring community members to install green stormwater management tools on their properties, and by encouraging them to support GSI at schools, streets and other public spaces in their neighborhoods.

During March and April 2012, PWD and partners sponsored Soak It Up, Philly! events throughout the City to celebrate the completion of PWD Green Street projects. Approximately 200 community members, city officials and partners gathered to partake in ribbon cuttings, art activities, flower plantings and green street tours. Participants enjoyed music, refreshments and yarnbombed stormwater tree trenches completed by Ishknits, which highlight the new green street features in each of the communities.

The Soak it Up, Philly! celebrations occurred in:

- East Falls
- East Germantown
- Eastern North Philly
- Kensington
- Newbold



Water Commissioner Howard Neukrug, Deputy Mayor Michael DiBerardinis and Chief of Staff of the Mayor's Office of Transportation and Utilities Andrew Stober, with local supporters at Soak It Up, Philly!, Kensington, Philadelphia



Mayor Michael Nutter with students from John F. Hartranft School at Soak It Up, Philly!, Eastern North Philadelphia



(L-R): Gina Snyder from East Falls Development Corporation, Deputy Water Commissioner Debra McCarty, Stormwater Bumpout Ribbon-Cutting Ceremony, Soak It Up, Philly!, East Falls, Philadelphia

Yarnbombing by Ishknits at Soak It Up, Philly!

Along with original works of sidewalk chalk art by attendees of the various Soak It Up, Philly! events in the spring, PWD commissioned local yarn artists Jessie Hemmons and Christina LeFevre of [Ishknits](#) to decorate the green stormwater infrastructure (particularly [stormwater tree trenches](#)) with colorful yarn at the Soak It Up, Philly! events throughout the City.

"Since most people can connect to art more so than green stormwater technology, we thought yarn bombing would be a fun way to make that connection."

- Tiffany Ledesma Groll
PWD consultant,
[WHYY Newsworks](#)



Children from the Guerin Recreation Center make water symbols with chalk and help plant flowers at Soak It Up, Philly!, South Philadelphia



Children planting flowers, Soak It Up, Philly! East Germantown



Yarn art by Ishknits, Kensington, Philadelphia

Green City, Clean Waters Ambassadors

The Philadelphia Water Department and the Pennsylvania Environment Council (PEC) launched the *Green City, Clean Waters* Ambassador pilot program in the spring of 2012. The program is designed to educate community leaders and others interested in greening their neighborhoods about *Green City, Clean Waters*, arming them with the resources and information to help strengthen partnerships between communities and PWD.



Awbury Arboretum, East Germantown, Philadelphia

22

- participants from:
- Bella Vista
- East Falls
- East Passyunk
- East Tioga
- Germantown
- Lower Moyamensing
- Mount Airy
- New Kensington
- Northern Liberties



Khiet Luong of PEC and ambassadors identify ideal locations to install green stormwater infrastructure projects, Awbury Arboretum, East Germantown, Philadelphia



Charissa Bujak of PEC and Green City, Clean Waters Ambassador Nicole Healy educating at Soak It Up, Philly!, East Falls, Philadelphia

Watershed Partnerships

The Philadelphia Water Department works with seven watershed partnerships in collaborative efforts to protect and restore the region's waterways. Our partners inside and outside Philadelphia share resources, support planning efforts and host activities to educate local communities about better stewardship of our waterways. These efforts are critical to providing healthy drinking water and valuable recreational opportunities. This year, PWD worked with partners to begin designs for stream restoration projects in both Tacony Creek and Cobbs Creek. Also, the Tookany/Tacony-Frankford (TTF) Watershed Partnership welcomed Julie Slavet as its new director while the Darby Cobbs Watershed Partnership hosted the second annual Cobbs Creek 5K!

- [Darby-Cobbs](#)
- [Delaware](#)
- [Pennypack](#)
- [Poquessing](#)
- [Schuylkill](#)
- [Tookany/Tacony-Frankford](#)
- [Wissahickon](#)



Volunteers planting trees, Cedarbrook, Philadelphia



Volunteers from City Year, Arcadia University and Earth Force plant trees, East Germantown, Philadelphia

Philly Water's Best Friend Competition

This spring, the Philadelphia Water Department hosted its second annual Philly Water's Best Friend Competition to select two new spokesdogs who will help spread the message about picking up pet waste to make our waterways cleaner. Joey Bag-o-Donuts won first place in Queen Village with help from his owner Ellie Gibbard, and Scooter took home top honors in Northern Liberties to owners Julia Vu and Gary Acers. Each spokesdog won \$200 worth of prizes from WAG (Whole Animal Gym) and Chic Petique. Both will also be featured on a number of brochures and advertisements as part of the campaign to promote the importance of eco-friendly doggy lifestyles.



Joey Bag-o-Donuts, first place winner, Queen Village, Philadelphia



Scooter, first place winner, Northern Liberties, Philadelphia



Contestants compete in the Queen Village competition, Philadelphia

Green City, Clean Waters Environmental Education

Children all over Philadelphia participated in fun and interactive *Green City, Clean Waters* lessons funded by the Philadelphia Water Department and taught by expert environmental educators from Philadelphia Parks & Recreation and the Fairmount Water Works Interpretive Center. Children created hand-made models of green neighborhoods in school classrooms; learned about water pollution at recreation centers; experienced nature for the first time in Fairmount Park; and examined insects through microscopes in a lab at the Fairmount Water Works Interpretive Center, among a myriad of other learning opportunities. The hands-on experiences that children (and adults!) enjoyed increased their awareness about water pollution, introduced them to green stormwater management and linked them to the plans PWD has for their communities, such as new green streets in front of schools and recreation centers.

6,904

children and adults
learned about
Green City, Clean Waters



*Green City, Clean Waters curriculum participants,
Anna B. Day School, East Mt. Airy, Philadelphia*



*Green City, Clean Waters curriculum participants,
Anna B. Day School, East Mt. Airy, Philadelphia*



*"Exploring the Urban Watershed" participant,
Fairmount Water Works Interpretive Center, Philadelphia*

Green Stormwater Infrastructure Tours

This past year, the Philadelphia Water Department led several tours to highlight green stormwater infrastructure projects, showing off a variety of model stormwater management sites. Overall, the tours helped to educate a total of 304 participants and spread the message of Philadelphia's *Green City, Clean Waters* program.



Albert M. Greenfield School, Rittenhouse Square, Philadelphia



Herron Playground, Pennsport, Philadelphia

304
green tour
participants

Green City, Clean Waters Art Contest Ceremony

More than 700 students from across Philadelphia submitted entries for this year's annual art contest. PWD asked students to illustrate the ways our rivers and streams become polluted and how we can work together to make them healthy. The first place drawings will be used in a year-round advertising campaign on buses and subways, and all winners received prizes including gift cards, art supplies and calendars.

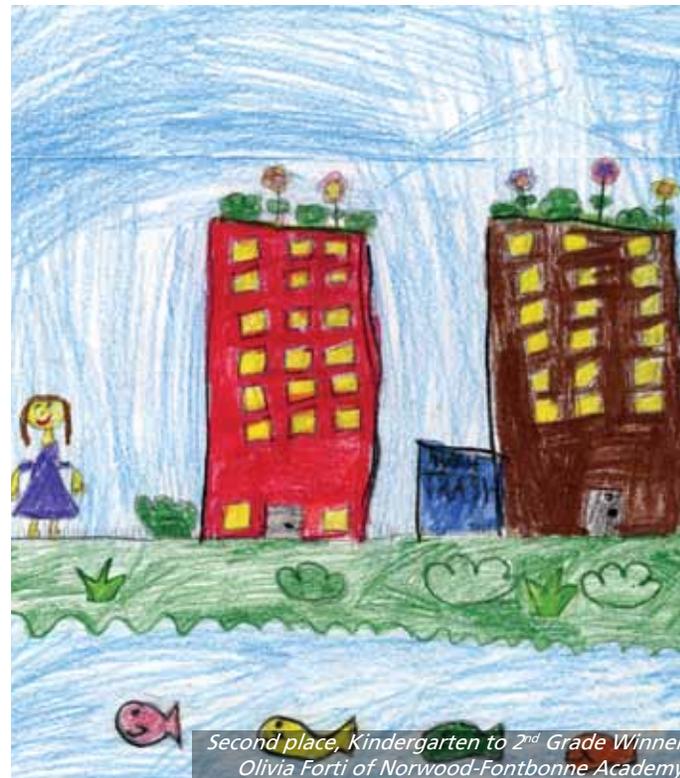
Congratulations to the winners, and special thanks to the Partnership for the Delaware Estuary for organizing this contest. We hope this experience inspires Philadelphians both young and old to play a role in cleaning our streams and greening our City!



*Green City, Clean Waters Art Contest Winners
Fairmount Water Works, Philadelphia*



*First place, 9th to 12th Grade Winner
Liana Spiro of Germantown Friends School*



*Second place, Kindergarten to 2nd Grade Winner
Olivia Forti of Norwood-Fontbonne Academy*

700
students

Philly FUN Fishing Fest

In October, 2011, the Philadelphia Water Department, Schuylkill River Development Corporation and other partners hosted the 8th annual Philly Fun Fishing Fest. This free event gives anglers of all ages and skill levels an opportunity to celebrate the resurgence of aquatic life in the Schuylkill River. The Pennsylvania Fish and Boat Commission lets participants borrow fishing rods and provides instruction to newcomers. Fishing Fest-goers hooked 67 fish during the catch-and-release event, including Striped Bass, Perch and Channel Catfish - three important fish in the river's more than 40 species.

50
participants

67
fish hooked



*Philly FUN Fishing Fest,
Schuylkill Banks, Walnut Street Bridge*



Temple Ambler EarthFest

Among the many events that the Philadelphia Water Department participates in throughout the year, this spring PWD participated in a special celebration at Temple University's Ambler Campus - the 10th annual EarthFest. PWD has been a regular participant of EarthFest and was honored with a certificate of appreciation for its contributions to EarthFest over the past ten years, and for the Department's continuing efforts to promote sustainability. This year's celebration hosted over 90 exhibits and welcomed nearly 10,000 visitors, making it Temple's biggest EarthFest to date. PWD's interactive exhibit attracted approximately 400 children who learned how insects can be used as indicators of water quality in our creeks.

400
children
at
EarthFest



Kids sort through different insects at PWD's exhibit, Temple Ambler EarthFest



Temple Ambler EarthFest

Philadelphia Achieves Emerald City Status

In a report released by the Natural Resources Defense Council (NRDC), Philadelphia received top honors and Emerald City status. *Rooftops to Rivers II*, a follow-up to a 2006 report, assessed the green infrastructure solutions undertaken by 14 cities in the U.S. and Canada. Philadelphia was the only city to receive a perfect score, meeting all six criteria for the environmental action group's "Emerald City" rating. This status was achieved largely by the long-term *Green City, Clean Waters* plan and shows that Philadelphia has further cemented itself as a leader of green stormwater infrastructure.

Other awards won in 2011 by the Philadelphia Water Department and the City of Philadelphia:

- [Pennsylvania Environmental Council's Curtin Winsor Award](#)
- [Delaware Valley Green Building Council's Leadership Award](#)
- [Green Roofs Awards of Excellence: Green Roof and Wall Leaders Civic Award of Excellence](#)
- [Exemplary Systems in Government Award-Single Process Systems Category](#)
- Governor's Award for Local Government Excellence: Municipal Award Reception for Innovative Planning and Sound Land Use Practices



Green Tour participants visit the Central Library's green roof, Logan Square, Philadelphia

PWD Wins 2012 U.S. Water Prize

On April 23rd, the Philadelphia Water Department was one of six recipients of the 2012 U.S. Water Prize, presented by the [Clean Water America Alliance](#) (CWAA), which honors organizations that improve our water's future through creative strategies and cutting-edge approaches. Water Commissioner Howard Neukrug attended the award ceremony in Washington D.C., where the winners were recognized as national models for promoting water sustainability.



(L-R): Executive Vice President of Veolia Water North America, David Gadis; Philadelphia Water Commissioner, Howard Neukrug ; and CWAA President Ben Grumbles, Water Prize Ceremony, Washington D.C.

PWD Wins Sustainability Award at Flower Show

In March, the Philadelphia Water Department's display at the Philadelphia International Flower Show earned the [Pennsylvania Horticultural Society's](#) Sustainability Award, demonstrating how [green roofs](#), [rain gardens](#) and other green stormwater infrastructure can beautify our City while managing stormwater runoff that would otherwise pollute our waterways. Scale models of key Philadelphia buildings and landmarks revealed the vision of how green the City could be as a result of *Green City, Clean Waters*.



PWD's Flower Show display model representing the Green City, Clean Waters vision

Connect Online

Green City, Clean Waters

www.phillywatersheds.org

Green Homes

www.phillywatersheds.org/residents

Suggest a Green Stormwater Infrastructure Project Location in Your Community

www.phillywatersheds.org/CIF

Philadelphia Water Department

Watersheds Blog

www.phillywatersheds.org/blog



www.vimeo.com/phillywatersheds



www.youtube.com/PWDdepartment



www.facebook.com/PhillyH2O
www.facebook.com/phillywatersheds



www.twitter.com/PhillyH2O





Special Thanks To Our Partners!

The Philadelphia Water Department's partners have helped make *Green City, Clean Waters* a success in its first year. Thank you to the many individuals, organizations, agencies and others throughout the region for your continued support and collaboration!

Photo Credits

- Randy Calderone *(9 Top)*
Tookany/Tacony-Frankford Watershed Partnership *(16, 30, 31)*
Steve Minicola *(16 Top)*
Steve Belfiglio *(16 Bottom)*
Paul Rider *(15, 21 Top, 42, 43)*
Community Design Collaborative *(21 Bottom)*
Rebuilding Together Philadelphia *(22)*
Energy Coordinating Agency *(23 Top-Left)*
Pennsylvania Environmental Council *(23 Bottom, 32 Bottom-Left)*
Andrew Dobshinsky *(26)*
Nate Johnson *(28 Left, Back Cover)*
GreenTreks *(28 Center)*
Philadelphia Parks & Recreation *(33 Top)*
Fairmount Water Works Interpretive Center *(33 Bottom)*
Partnership for the Delaware Estuary *(34, 37)*
Clean Water American Alliance *(39 Top)*

All other photos taken by PWD staff and consultants.

