



Philadelphia Water Department

Driving equitable participation in green stormwater

Project at a Glance

Utility Overview

- Utility: Philadelphia Water Department (PWD)
- Location: Philadelphia, PA
- Population served: ~2.2 million people (wastewater system)
- Service area: 360 square miles (wastewater system)
- Project Developer: Greenprint Partners
- Project Proponents: Institutional ratepayers in PWD's service area

Challenges

- Combined sewer overflows
- Aging water infrastructure
- Impacts of climate change
- Desire for urban revitalization
- Need to keep rates affordable for all Philadelphians
- Need to motivate private property owners and equitably build resilient solutions

Solution

- Institutional ratepayer participation in PWD's Greened Acre Retrofit Program to install green infrastructure on their private property and bring multiple benefits to vulnerable communities.

Costs and Funding Sources

- Total project cost: \$800,000
- Funding sources: PWD's Greened Acre Retrofit Program (GARP)

Benefits



Investment in the properties that drive economic development



Enhancing community health by encouraging active living



Community gathering spaces



Landowners will reduce their annual stormwater bills up to 80% by earning a stormwater credit



Access to green spaces, encouraging community to interact with nature



BACKGROUND

The Philadelphia Water Department (PWD), a public utility with origins dating back to 1801, provides drinking water, stormwater, and wastewater services to the City of Philadelphia and 10 municipalities located in Montgomery, Delaware, and Bucks counties. PWD provides wastewater service to 2.2 million wastewater customers, as the wastewater system extends to suburban areas outside of the city limits. Population growth and decline in Philadelphia is a complex pull-push dynamic and creates challenges as PWD works to meet the city's water needs. This complexity is compounded by the fact that the median household income is below the 2017 national median and the poverty rate is above the 2017 national average.

Philadelphia faces the converging water management challenges of **aging infrastructure, climate change, and maintaining affordable rates.**



CHALLENGE

PWD faces the convergence of several water management challenges. These include environmental regulations, the city's aging water infrastructure, impacts of climate change, desire for urban revitalization, the need to keep rates affordable for all Philadelphians, and the need to motivate private property owners and equitably build resilient solutions.

SOLUTION

Philadelphia's Green City, Clean Waters program, which began in 2011, embodies the city's commitment to build widespread green storm water infrastructure (GSI) over the next 25 years to help reduce the frequency and water quality impacts of overflows from the city's combined sewer system (CSOs). With this significant investment, through a combination of regulatory mandates and incentive programs, Philadelphia will work to convert more than one-third of the impervious surfaces in the areas of the city that are served by a combined sewer—about 65% of the city—to "Greened Acres." Greened Acres must manage the first inch of storm water runoff, which are expected to capture, or otherwise address, 1 million gallons of rain per acre per year.

PWD's Greened Acre Retrofit Program (GARP) is part of this initiative. Through GARP the City reimburses landowners for the cost of green infrastructure development on properties within the combined sewer zone. Projects can include stormwater management practices such as bioswales, rain gardens, tree trenches, and more.

In 2018, Greenprint Partners, a mission-driven green infrastructure developer, identified and aggregated of a

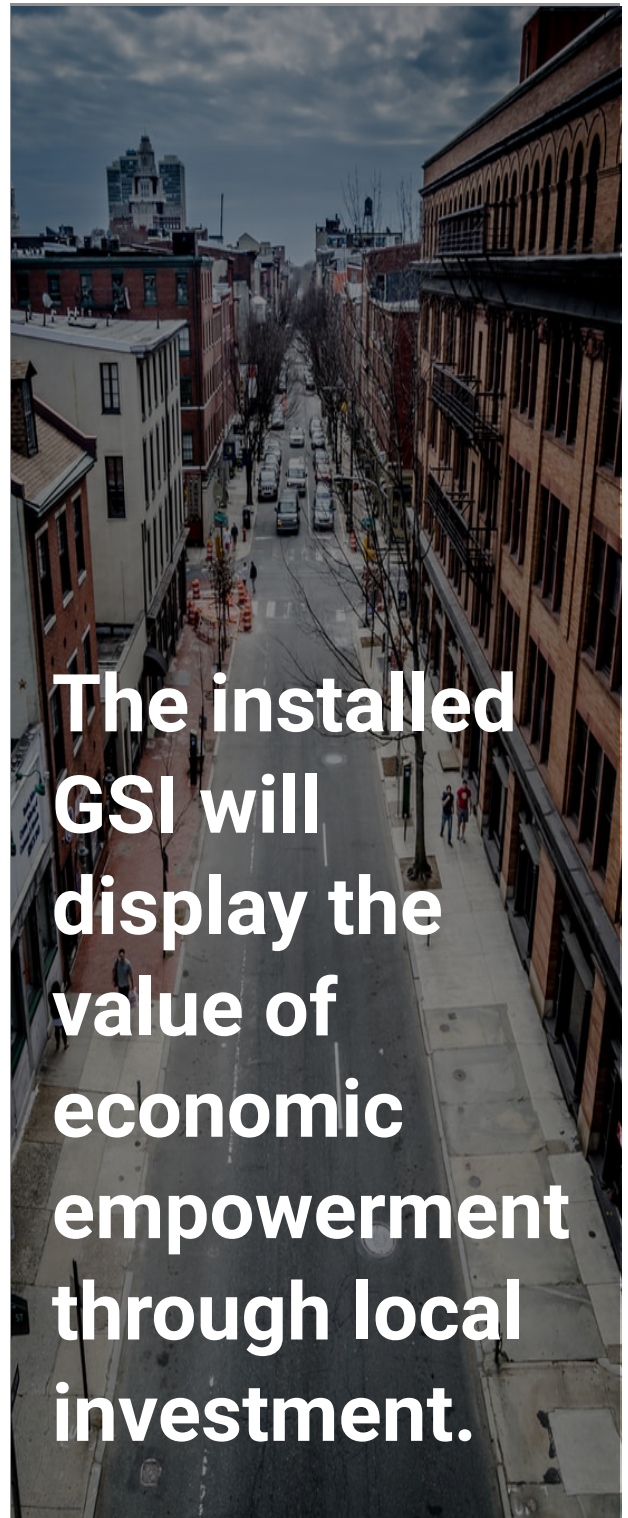
group of project applications on behalf of institutional organizations located in lower-income areas of Philadelphia. Two Philadelphia nonprofit sites, the Leon H. Sullivan Human Services Center (“the Center”) and St. Luke’s Episcopal Church, Germantown were approved for a total of \$800,000 in green stormwater infrastructure site improvements from PWD. These projects will drive more equitable distribution of grant funds and will result in nearly four new greened acres contributing to Philadelphia’s stormwater management goals.

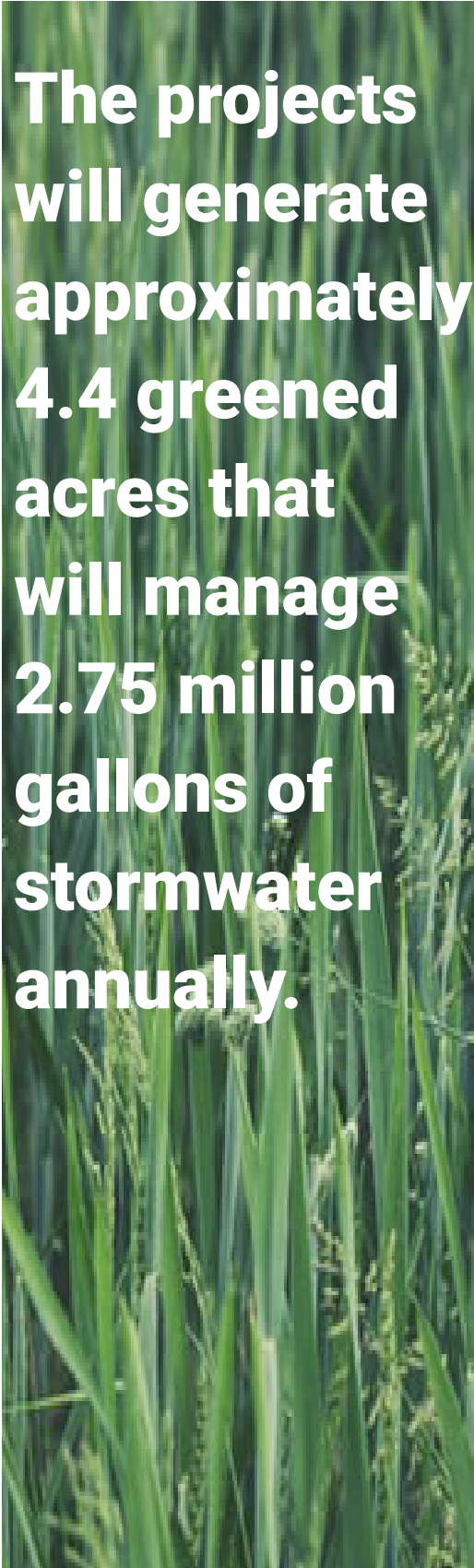
Leon H. Sullivan Human Services Center

Through PWD’s Green Acre Retrofit Program, the Leon H. Sullivan Human Services Center secured funding to develop 3.2 Greened Acres. The Center is located in a neighborhood with high rates of cancer and respiratory illness; a key priority for this landowner was adding tree canopy to reduce air pollution, which is a major concern with their proximity to a major arterial road. The installed GSI will encourage tenants to use the site’s outdoor space, and thus display the values of the group’s founder, The Reverend Leon Sullivan, who believed in economic empowerment through local investment.

St Luke’s Episcopal Church

PWD’s Green Acre Retrofit Program is also funding a large-scale green infrastructure installation with St Luke’s Episcopal Church. Led by the Reverend David Morris, the church hosts a summer camp which offers a safe place for youth when school is not in session. As part of the Church’s mission, it offers these children access to inviting spaces to engage in healthy activity outdoors.





**The projects
will generate
approximately
4.4 greened
acres that
will manage
2.75 million
gallons of
stormwater
annually.**

RESULTS

Environmental benefits

Stormwater management through greened acres is at the core of each of these two projects. The projects will generate approximately 4.4 greened acres.

Leon H. Sullivan Human Services Center

The project developer worked with Leon H. Sullivan Human Services Center to develop 3.2 greened acres that will manage approximately 2 million gallons annually. The site plans include subsurface detention basins that will allow stormwater to infiltrate into the ground rather than flood into the sewer system. These pretreatment areas help clean the stormwater by removing pollutants and will feature vegetated pretreatment including native plantings and tree canopy.

St Luke's Episcopal Church

With the PWD funds, the project developer will deliver 1.2 greened acres that will manage approximately 750,000 gallons annually. Rain gardens and additional canopy trees at St. Luke's, will offer a more inviting space for children to exercise and play and also allow rainwater to soak in right where it falls.

Economic & equity benefits

Shared Prosperity is woven deeply through each project's Benefits-Driven Design process. The project developer's unique process encourages landowners to consider the following "Shared Prosperity" co-benefits as they decide on their priorities.

- Beautifying the property
- Beautifying the neighborhood
- Stabilizing property values
- Preventing people from moving out of the neighborhood
- Attracting development and investment
- Increasing nearby business / retail activity

Based on the community and landowner feedback, these priorities are considered in the design process to ensure the maximum economic benefit is incorporated into the site.

Social benefits

Strengthened Community is another important theme for this project developer's specific way of working. The company's process encourages landowners to consider the following co-benefits as they decide on their priorities during the design process:

- Increasing mental health / reducing stress
- Improving air quality for respiratory health
- Increasing active living for physical health
- Increasing student focus / academic performance
- Increasing community pride
- Increasing positive social interactions
- Calming traffic
- Reducing loitering-related crime (e.g., public drinking, drugs, gambling, prostitution)



Sources

[GARP program information](#)
[Philadelphia Water Department website](#)
[Greenprint Partners website](#)
[GSI and Co-Benefits Fact Sheet \(PDF\)](#)
[Industry-Specific Benefits \(Affordable housing, Faith communities, Healthcare facilities, Nonprofits, schools, parks, and other public benefit organizations\)](#)