

Seattle Public Utilities

Capitalizing on Localized Efficiency and Stormwater Strategies

Project at a Glance

Utility Overview

- Utility: Seattle Public Utilities
- Location: Seattle, Washington
- Population served: 1.4 million
- Service area: ~84 square miles

Challenges

- Drought
- Increased demand for drinking water from population growth
- Urban storm water management
- Combined sewer overflows

Solution

- Comprehensive water efficiency programs that treat conservation as the preferred source of supplies, and citywide green infrastructure incentive program, “RainWise,” to motivate private property owners to join in the solution to storm water management.

Costs and Funding Sources

Water Efficiency

- Total project cost: \$1.7 million in 2019 for customer rebates
- Funding sources: Capital improvement budget

RainWise

- Total project cost: \$1.1 million in 2019
- Funding sources: Capital improvement budget

Benefits

- | | |
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|  <p>Regional water consumption has declined by about 50 million gallons per day, or 28%, while population has increased 28%</p> |  <p>2.17 million square feet (50 acres) of roof area has been captured by rain gardens or cisterns and removed from the sewer system</p> |
|  <p>800 customers receive rebates for water efficient fixtures and appliances annually</p> |  <p>42 active RainWise contractors 4 of which are Vietnamese, 2 of which are Chinese, and 9 of which speak Spanish</p> |
|  <p>1,600 RainWise projects installed</p> | |
|  <p>Water consumption has shrunk by 44% from 151 to 85 gallons per day</p> |  <p>23 million gallons of storm water controlled by RainWise projects per year</p> |
|  <p>6,800 free toilets installed since in 2001</p> |  <p>Regional partnerships</p> |
|  <p>41 “big roof” projects have been completed</p> |  <p>Community engagement</p> |

BACKGROUND

Seattle, Washington—a seaport city—is located on the isthmus between Puget Sound and Lake Washington. The city covers 83.9 mostly hilly square miles. The Kitsap and the Olympic peninsulas along with the Olympic mountains lie to the west, while the Cascade Range and Lake Sammamish lie to the east. Seattle has a warm-temperate climate with mild, wet winters and mild, mostly dry summers.

Seattle Public Utilities (SPU) provides water, sewer, drainage, and other services, for over 1.4 million people in King County and southwest Snohomish county, Washington. As to water management, SPU operates two distinct utilities: (1) drainage and wastewater and (2) drinking water. The drainage and wastewater section collects and discharges storm runoff and wastewater from residences, businesses, institutions, and public properties within the city. The water section provides drinking water to customers in and around Seattle, and is a wholesaler to 21 suburban water utilities and two interlocal associations. Drinking water supplies come from the Cedar River and Tolt River watersheds.

CHALLENGE

In 1992, Seattle experienced a significant drought causing its drinking water demand to nearly meet its available supplies. SPU needed to identify “wet water” either through new sources, water purchases, or other means.

Apart from its need to address dwindling drinking water supplies, SPU and King County are working to manage urban storm water runoff into Puget Sound and overflows from areas of Seattle with combined sewer systems. Storm water runoff and combined sewer overflows are a significant source of surface water pollution.

SOLUTION

Efficient Use of Water

In the early 1980s, SPU launched its initial water efficiency program, which focused on education and outreach. In 1985, rebates for water efficient fixtures and appliances were added to the program and the utility began taking a hard look at the financial costs and benefits of procuring new water supplies versus delaying those investments through conservation. Nearly a decade later, in 1993, it became SPU’s official policy that conservation was the preferred source of supply.

Today, SPU employs numerous conservation and efficiency strategies, including:

- \$100 residential rebates for premium water efficient toilets that use only 1.1 gallon per flush
- Rebates for sprinkler system upgrades for apartment or condominium landscapes with irrigated areas of one acre or more

Seattle experienced a **significant drought** causing its drinking water demand to **nearly meet its available supplies**



- Commercial, industrial, and institutional rebates for toilets, urinals, refrigeration, kitchen equipment, medical equipment, commercial laundry, sprinkler system upgrades, and other technologies
- Direct installation of toilets for low-income residents of Seattle
- Subsidized rain barrel purchases of \$80 per barrel and no limit per household
- Educational information on rain water harvesting with rain barrels
- Educational information on smart watering
- Educational information on finding and fixing leaks.

To implement this robust program, SPU is part of the Saving Water Partnership, “group of local water utilities in Seattle and King County working together to help customers save water and money.”

Education and outreach efforts take shape as SPU’s youth education program, customer bill inserts, newsletters, trade magazines for multifamily and development companies, store signage, and partnerships with area retailers, distributors, landscapers, restaurants, and other professionals. Historically, SPU has also used higher-visibility and higher-cost outreach strategies such as bill boards, bus ads, and radio spots. In addition, SPU has dedicated outreach and marketing for its free toilet program, which includes direct marketing for new customers, fliers, brochures, and attendance at resource fairs and other community events.

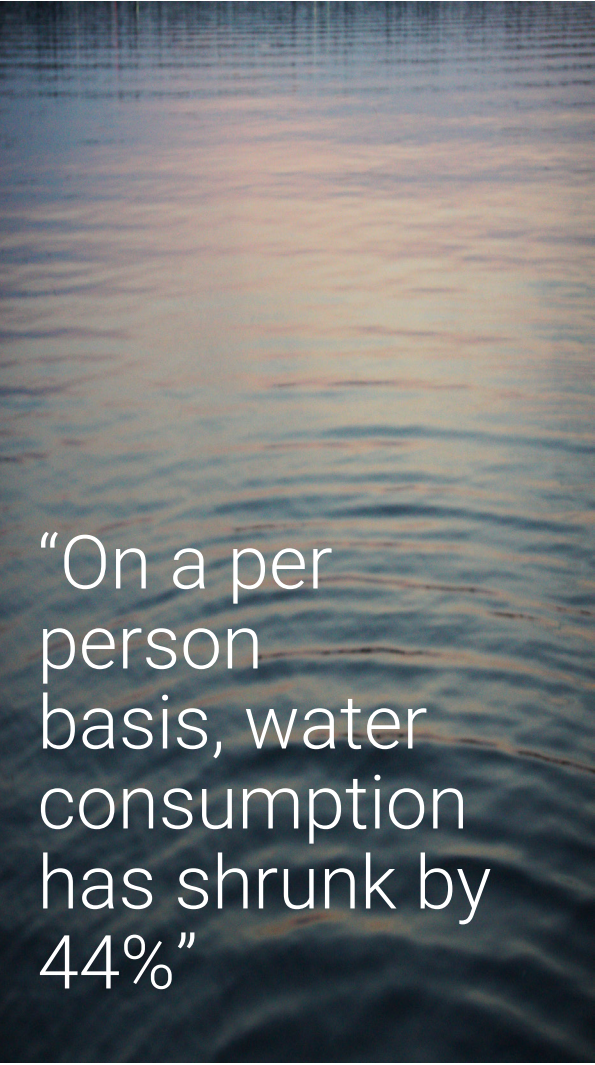


RainWise Program

RainWise is a rebate program that helps eligible property owners manage stormwater by installing rain gardens and/or cisterns on private property, and disconnecting their roof downspouts from the sewer system if necessary. About 50,000 properties in targeted basins in Seattle are eligible to participate.

If a property owner lives in a targeted basin, they first learn about appropriate green infrastructure strategies—either a rain garden, a cistern, or a combination of both—for their property at the RainWise website, which uses data maintained by SPU to accurately reflect the specifics of that parcel.

Next, the potential participant is given information about available reimbursements and contractors that are qualified to evaluate and install the recommended technologies. As part of this process, SPU conducts both pre and post-inspections of the installed projects and then provides rebates for properly installed systems. Rebates can be up to \$4.00 per square foot of rooftop runoff controlled by the rain garden and/or cistern, and have averaged \$4,800 per property covering 90% of the project. Following installation, RainWise participants are responsible for maintaining their project for five years, and enter into a maintenance agreement with SPU. This helps provide SPU with certainty that the localized storm water infrastructure will be in place as the utility works to address storm water management.



“On a per person basis, water consumption has shrunk by 44%”

In addition, SPU and its partner King County strive to make the RainWise equitable and inclusive. To this end, SPU has created several alternative funding and grant programs for income-qualified households and contractors such as the RainWise Access Grant and the RainWise Pilot Access Loan. Further, RainWise funds outreach efforts to multicultural residents that include providing additional customer service and coaching of clients that need extra help navigating the installation and rebate process of the program.

Together with the residential element of RainWise, SPU also offers rebates to “Big Roofs,” i.e., community centers, religious organizations, apartment buildings and businesses with large roofs. Large-roof properties typically receive rebates that cover the full cost of the project and can offset property owners’ annual drainage fee through a Stormwater Facilities Credit.

SPU does not implement the RainWise program alone. It works with King County and other area partners to broaden the program’s reach and to coordinate overlapping jurisdictions. These regional partners share certain overhead and outreach costs, have regular meetings, and prepare joint events, among other things.

RESULTS

Water resources benefits

SPU has realized significant benefits from its conservation program. In particular, individuals and businesses that participate in SPU rebate programs receive an average of \$100 per toilet or irrigation system. On average approximately 800 customers receive a rebate through the region-wide program in which SPU participates annually. Non-residential participants can receive a wide range of rebate amounts from \$200 to \$20,000 depending on the specific project. And SPU provides its income-qualified Seattle customers an average of 400 water efficient toilets a year, or about 6,800 free toilets, since the program began in 2001.

Further, SPU’s conservation program together with the utility’s efforts to eliminate system leaks and a new plumbing code, since 1990 regional water consumption has declined by about 50 million gallons per day, or 28%, while population has increased 28%. “On a per person basis, water consumption has shrunk by 44% from 151 to 85 gallons per day.” While SPU’s conservation program is one factor among many that lead to this decoupling of water demand and population growth, it is an important element of an overall sustainable water management strategy.

SPU has also realized many storm water management benefits from the RainWise Program. To date, 1600 RainWise projects have been installed, 41 “big roof” projects have been completed, 2.17 million square feet (50 acres) of roof area has been captured by rain gardens or cisterns and removed from the sewer system, there are 42 active contractors 4 of which are Vietnamese, 2 of which are Chinese, and 9 of which are speak Spanish, and 23 million gallons of storm water has been controlled per year.

Environmental benefits

SPU’s efficiency and RainWise programs benefit the environment by reducing demand for fresh water, improving air quality, increasing the number of trees and plants in neighborhoods, providing habitat for pollinators, and adding resilience in planning for population growth and climate change.

Economic benefits

SPU’s efficiency and RainWise programs reduce water bills for participating ratepayers and increase sewer capacity in a cost-effective way.

Social benefits

SPU’s efficiency and RainWise programs add green space which promotes health and wellness and actively engage the community in addressing water and storm water management. In the RainWise program in particular individuals are encouraged to share their experience with their neighbors, which has a multiplier effect prompting others to join.

