



Cascade Water Efficiency Program 2017 Annual Report

Cascade provides safe, clean, and reliable water to its members in a cost-effective and environmentally responsible manner.



Summary

The 2017 Cascade Water Efficiency Program (program) saves approximately 60 million gallons of water, 10.7 million kilowatt hours of energy, and 4.3 million pounds of avoided greenhouse gas emissions per year. The program benefits thousands of residents, businesses, schools, and public agencies through a variety of education and outreach, training, and equipment retrofit actions. The program continues to promote Cascade as a national leader in resource management, and it provides the requisite water efficiency measures and savings goal Cascade members need to meet their state-mandated water use efficiency requirements. Cascade employs 1.5 full-time employees to manage the program, and total expenses in 2017 were \$653,498 including materials, services, and salaries.

2017 Cascade Water Efficiency Program		
Community Engagement		Completed
Classroom Presentations		431
Students Reached		10,863
Teacher Fellows		7
Road Shows		13
Road Show Customer Interactions		~4,300
Water Wall Uses		7
Water Wall Customer Interactions		~2,500
Cascade Gardener Classes		25
Cascade Gardener Attendees		575
Garden Hotline		251
WaterSmart Trainings		8
WaterSmart Training Attendees		~140
King County Housing Staff Irrigation Trainings		2
King County Housing Staff Irrigation Training Attendees		35
Drip Irrigation / Raingarden Projects		4
Savings Generating	Savings (Gallons Per Day)	Completed
Residential Clothes Washers	26,265	1,751
Residential Showerheads	76,367	5,920
Residential Aerators	28,541	2,883
Multifamily Showerheads	4,022	479
Multifamily Kitchen Aerators	130	50
Multifamily Bathroom Aerators	7,295	1049
Commercial Aerators	645	15
Irrigation Projects	200	1
Web Page Conservation Items	4,665	4,665
Event-Distributed Conservation Items	14,933	14,933
Member-Provided Items	2,650	2,650
Total	165,722	

Savings Goal

Cascade's water efficiency savings goal is a cumulative savings of 0.6 million gallons (mg) per day on an average annual basis and 1.0 mg per day on an average peak season basis for the period 2014 - 19. In 2017, Cascade achieved an annual savings of 165,722 gallons per day or about 28% of its six-year cumulative savings goal. Along with savings from 2014 – 16, Cascade has achieved approximately 114% of its annual goal and 68% of its peak season goal.

Relationship to Long-Term Objectives

The water efficiency program serves Cascade's mission by lowering regional water demand so that Cascade may delay or defer development of the White River / Lake Tapps Project or other sources of water supply. By utilizing existing water supplies more efficiently, Cascade will save millions of dollars for its members and their ratepayers, leave more water in streams for fish, and reduce the region's carbon footprint through decreased energy usage involved in the treatment, transmission, and heating of drinking water.

Continued Partnerships

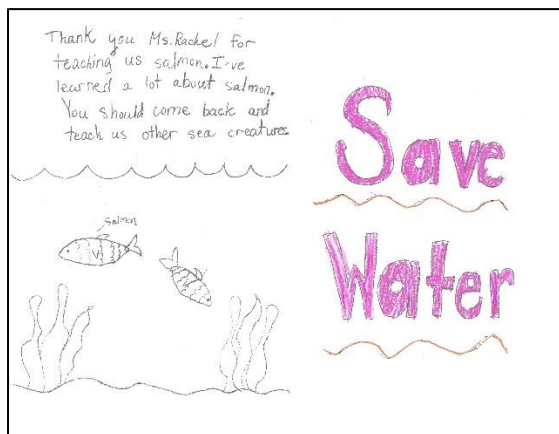
Cascade continues to grow and sustain partnerships in the region to leverage resources and promote the importance of reliable, clean, drinking water. In 2017, Cascade collaborated with many entities including Lake Washington Institute of Technology, US Environmental Protection Agency, Bellevue School District, Washington State Nursery and Landscaping Association, Puget Sound Energy, Sustainability Ambassadors, Tilth Alliance, and King County Housing Authority.

Youth Education

Cascade provided 431 water education programs to 10,863 students at schools within all Cascade member service areas. Cascade offers fifteen programs designed to help schools meet Washington Science, Technology, Engineering, and Mathematics (STEM) requirements. All programs discuss water efficiency concepts and include an explanation of Cascade and its members. Program evaluations provided by teachers are very positive; many schools register for programs months in advance.

“My class had the Healthy Water Healthy Soil presentation at Campbell Hill Elementary and they loved it!!!! The hands-on aspect was really fun for each of them, and they ALL participated (even after saying they didn’t want to). We would definitely try ... this program again in the future!”

– Ashley Rodriguez, Campbell Hill Elementary (Skyway Water and Sewer District).



Letter from student

AquaPals

Cascade’s AquaPals program highlights selected student projects on a dedicated website and allows classrooms in different areas to connect and compare projects, contrast watersheds, and discuss water issues. This year, Cascade added The

Global Water Crisis to its suite of programs.

This addition allows students to study the problems resulting from the lack of clean drinking water in Bangladesh with the opportunity to communicate directly with educators and students in that country. More than 240 students participated in AquaPals projects.



AquaPals website

Community Gardens

Cascade partners with Tilth Alliance to develop workshops and training opportunities that teach local residents to incorporate sustainable landscaping into their gardening practices. In 2017, Tilth Alliance and Cascade provided Watershed Stewardship training to forty-four volunteers who each committed to teach classes and work on garden and drip irrigation projects in Cascade member areas. Volunteers participated in several projects including McAuliff Park (Kirkland), Hopelink (Bellevue), and the Nameste Garden (Tukwila). In addition, eight WaterSmart Workshops were held in Kirkland, Issaquah, Tukwila, and Redmond.



Volunteers at native plant project in Kirkland

Teacher Fellows

The Teacher Fellows program recruits master teachers from Bellevue, Issaquah, and Lake Washington school districts to design water-based curricula for inclusion into their respective districts. Teachers are supported by Cascade through a stipend and through materials and resources relating to water systems and water resources.

This program allows Cascade to target its resources to have a broader and more lasting impact within school districts.

Cascade supported seven Teacher Fellows in 2017 who taught and promoted water-based social and science units. Those fellows engaged with 46 peers who impacted 4,155 students in 16 schools in Cascade member areas.

The studies included the global water crisis, wastewater engineering, and surface water management. The program challenges students to take action to improve the conditions of their local environment such as replacing old showerheads, checking their cars for oil leaks, and monitoring their neighborhoods for pet waste.

Pacific Cascade Middle School, Water Conservation Audit Summary					
Completed March 2017					
Number of students participating		280			
		Potential Water Savings in gallons	Potential Energy Savings in kWh	Potential GHGe savings in lbs	
Students identified:					
Non-efficient clothes washer	100	591,000	98,700	60,300	
Non-efficient kitchen faucet	135	246,000	41,100	25,100	
Non-efficient bathroom faucet	553	1,760,000	294,000	180,000	
Non-efficient showerhead	308	1,040,000	174,000	106,000	
Non-efficient toilet	504	1,820,000	4,730	4,260	
Non-efficient dishwasher	119	65,300	10,900	6,660	
Toilets with leaks	92	737,000	1,920	1,720	
	Total	6,259,300	625,350	384,040	

Student project data from Teacher Fellows

Water Systems Symposium

In November, Cascade held the third annual Water Systems Symposium at the Issaquah Middle School. The symposium is an opportunity for educators to spend a day learning about water issues from local and regional experts. The symposium also includes workshops hosted by Cascade's Teacher Fellows who used their projects to facilitate understanding of problem-based learning. Local students play a prominent role in the symposium.



Student presenter at Water Symposium

Sustainable Landscape Technologies

Lake Washington Institute of Technology (LW Tech) and Cascade have worked together for years to promote water efficiency and sustainability in horticulture. The partnership culminated in the creation of the Irrigation Learning Lab in 2015. The Learning Lab serves as a hands-on training tool for students to learn the fundamentals of smart irrigation techniques. The Learning Lab is a regional asset that is used not only for LW Tech programs, but also by the regional ecoPro program and other landscape and irrigation professionals in the area.

In partnership with Cascade, LW Tech developed the first landscape and horticulture course series in the country with sustainability and water conservation as core objectives. The new course series entitled Sustainable Landscape Technologies has the following goals:

- Educate students interested in a career in sustainable landscape management;
- Target vocational updates for individuals already in the industry;
- Support the needs of the industries (landscape, irrigation, horticulture) with a qualified workforce;
- Provide a professional certificate program; and
- Prepare students and professionals to attain certifications such as IA, ecoPRO, CPH, LIC, and PLANET.

Three courses in the Sustainable Landscape Technologies series were completed in 2017. Staff from Cascade members can attend the courses at no charge.



Irrigation system training at LW Tech

Cascade Road Shows

Cascade participated in thirteen community events and festivals in 2017. All members were represented, and Cascade engaged with approximately 4,300 residents. Staff

distributed 15,000 conservation items and answered questions about water supply and water efficiency. Cascade participated in the following events:

- Tukwila Backyard Wildlife
- Bellevue Strawberry Festival
- Bellevue Farmer's Market (twice)
- Skyway Health and Wellness Fair
- Issaquah Salmon Days
- Kirkland Farmer's Market (twice)
- Redmond Derby Days
- Sammamish Days
- NW Flower and Garden Show
- PSE Lighting Fair
- Rainfest (Redmond)

Garden Hotline

Cascade supports the regional Garden Hotline, a service provided by Tilth Alliance. Residents can call the Garden Hotline Monday through Saturday and receive expert advice on sustainable gardening techniques and conserving water in their landscapes.

School Gardening Network

Cascade established the School Gardening Network, an online resource for teachers interested in gardening to learn about the resources available from Cascade and Tilth Alliance and receive expert gardening and irrigation advice.

This program leverages resources to help teachers plan and create waterwise gardens, grow food for their schools and food banks, and communicate with experts and other teachers.

Water Conservation Infographic

Cascade, Nature Vision, and Seattle Public Utilities created the Water Conservation

Infographic, a unique image-based tool to teach students “good” and “bad” behavior (with respect to water use) that doesn’t rely on words to get the message across. This tool can bridge language barriers and help students and their families understand how to conserve and protect water resources. The infographic will be used in Cascade’s classroom presentations.



Infographic for school programs

We Need Water Because...

Cascade’s public education campaign challenges residents to consider the value of water by completing the sentence, “We need water because...” Residents wrote their responses on a portable, modular Water Wall.

This campaign provided a unique way to engage the public on the importance of water and demonstrated Cascade’s leadership in resource conservation.

The Water Wall appeared in all Cascade member jurisdictions in 2017. Residents

provided creative and insightful responses on the Water Wall and engaged with staff in discussions about the value of water.



Water Wall at Redmond Derby Days

Cascade Gardener

This program uses expert instructors to teach gardeners how to have beautiful landscapes without excessive water and chemicals inputs. Cascade provided 25 classes for approximately 575 residents at venues in all member areas.

Cascade Videos

Cascade created four new videos to show residents how to save water inside their homes and in their landscapes. The videos are located on Cascade’s YouTube channel.

Eastside Youth Board

Water 1st International is a Seattle-based non-profit organization that funds water and sanitation projects in developing countries. Their strategy utilizes student ambassadors to educate others in their schools and communities about the global water crisis and participate in Water 1st’s programs. With Cascade’s support, Water 1st created the Eastside Youth Board in 2017 (previous youth boards had existed only in Seattle). The group meets after hours each month at Cascade’s offices in Bellevue, Washington, and includes students from eleven schools.

Irrigation Training

Cascade worked with the Bellevue Parks Department, King County Housing Authority, and the Bellevue School District to provide irrigation training for staff, perform irrigation system assessments, and help with landscape planning and development of policies relating to landscape and irrigation management.

Fix A Leak Week

In March, Cascade participated in the US EPA's annual Fix A Leak Week, which encourages people to find and fix leaks in their homes, schools, and businesses. During that week, Cascade produced an event in each member area.

- Bellevue: Seattle Children's Clinic; completed water audit and staff training on leak detection.
- Issaquah: KCHA property; Cascade Road Show.
- Kirkland: KCHA property; hosted KCHA staff training on toilet leak detection and repair.
- Redmond: KCHA property; trained residents to find and report leaks.
- Sammamish Plateau Water: Discovery Elementary; installed drip irrigation system in school garden.
- Skyway Water and Sewer District: KCHA property; meet and greet with residents to distribute leak detection dye and other conservation items.
- Tukwila: America's Best Value Inn; performed leak detection test on toilets.

Clothes Washer / Showerheads

Cascade continues its partnership with Puget Sound Energy to provide point-of-purchase rebates for EnergyStar certified

residential clothes washers and WaterSense labeled showerheads.

Puget Sound Energy provides the administration of these programs with Cascade sharing in only the direct rebate costs making these measures very cost-effective. Cascade cost-shared in 1,751 clothes washer rebates and 5,920 showerhead rebates to customers in 2017.



Multifamily Retrofits

Cascade partners with Puget Sound Energy to provide direct installation of showerheads and faucet aerators in apartment complexes at no charge to the tenant or property owner. In 2017, there were equipment retrofit projects in 17 apartments and condominiums in Cascade member areas.

Website Ordering

Cascade offers free water efficiency items, such as showerheads, shower timers, and rain gauges, to homeowners in its member service areas through its website. The online ordering process is easy, and the items are shipped to the customer's door. Cascade provided 4,665 items to residents, apartment complexes, and Cascade members for distribution to customers.