



Cascade Water Efficiency Program 2021 Annual Report

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



Summary

The 2021 Cascade Water Efficiency Program (program) saves approximately 13.5 million gallons of water per year. These savings are equivalent to providing the indoor water needs for 1,000 residents of King County. The program benefits thousands of residents, businesses, schools, and public agencies through a variety of education and outreach activities, training, and replacement of old fixtures and equipment. The program demonstrates Cascade's leadership 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 one full-time employee to manage the program, and total expenses in 2021 were \$479,247 including materials, services, and salaries.

The pandemic continues to disrupt many of the activities supported by the water efficiency program. Savings-generating programs, such as clothes washer and showerhead rebates, were less active and produced fewer savings for the second year in a row. Direct installations at multifamily properties were limited compared to previous years. However, Cascade's vendors and partners continue to find creative ways to deliver programs and services for Cascade's residents. The 2021 program provided value to our community by extending regional water supply and educating residents about the value of water.

PROGRAM AT A GLANCE...

Community Engagement

- 493 Classroom Presentations
- 10,614 Students Reached in Presentations
- 1,405 Remote Learning Materials Accessed
- 3 New Curriculum for Classroom Programs
- 6 Problem-Based Learning for Water Systems (PBL4WS) New Units Published
- 5 PBL4WS Student Impact Projects Published
- 3 PBL4WS Alignment with Member Climate Action Plans
- 1 Community Festival Attended
- 2 Community Watershed Field Trips
- 13 Cascade Gardener Classes
- 2,102 Cascade Gardener Attendees
- 6 Garden Walking Tours

- 119 Garden Walking Tour Attendees
- 1 Irrigation Evaluation
- 174 Garden Hotline Calls
- 12 Soil and Water Stewardship Workshops and Training Events
- 138 Soil and Water Stewardship Training Attendees
- 3 Stream Monitor Trainings

Savings Generating Measures (Direct Installations, Rebates, Distribution)	Completed
Residential Clothes Washers	1,095
Residential Showerheads	180
Event-Distributed Conservation Items	500
Commercial Dishwashers	5
Multifamily Direct Installation	565
Multifamily Leak Detection	1,013
Online Conservation Item Orders	2,081

Total Annual Savings: 13,538,580 gallons



37,092
TOTAL GALLONS
PER DAY
SAVED



Relationship to Long-Term Objectives

The water efficiency program serves Cascade’s mission by managing regional water demand so that Cascade may delay or defer development of the White River - Lake Tapps Reservoir 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 municipal water.



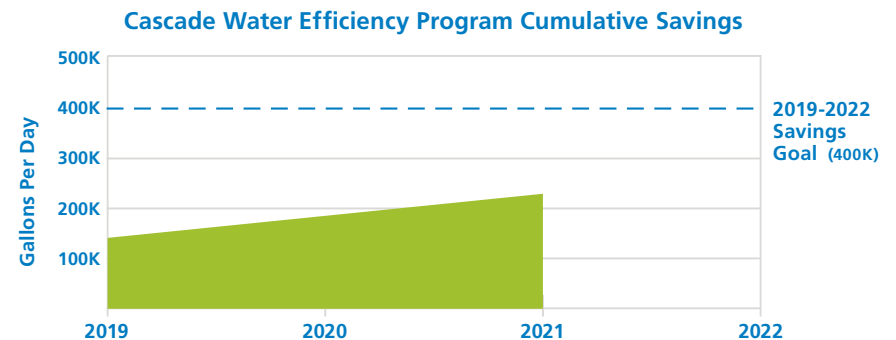
Regional Partnerships

Cascade continues to grow and sustain partnerships in the region to leverage resources and promote the importance of reliable, clean, drinking water. In 2021, Cascade collaborated with the Sno-King Watershed Council, Bellevue, Issaquah, Lake Washington, and Tukwila School Districts, Puget Sound Energy, Sustainability Ambassadors, Nature Vision, and Tilth Alliance.



Savings Goal

Cascade’s adopted water efficiency savings goal is a cumulative savings of 0.4 million gallons per day on an average annual basis for the period 2019 – 2022. In 2021 Cascade achieved an estimated savings of 37,092 gallons per day. Along with 2019-20 savings, this represents 57% of Cascade’s 2019-22 Water Use Efficiency Savings Goal.





Classroom Presentations

Cascade provided 493 classroom presentations for 10,614 students in 2021. This includes standard classroom learning, Aqua Pals, Community Science Teams, and Blue Teams delivered in-person and remotely. These numbers represent a 50% increase from 2020 to nearly pre-pandemic levels.



Remote Curriculum

The new remote curriculum continues to be available for remote and hybrid learning. The remote curriculum is arranged similar to the standard programming. Each program utilizes videos for content and stewardship messages with accompanying activities written so that teachers can assign them to students for asynchronous or synchronous learning. The materials also include notes for parents and caregivers, and each class has the option of participating in a video chat with an educator for a deeper inquiry into the subject.

“Maureen left students and staff with new knowledge about the salmon life cycle and about the responsibility people have in making sure their habitats remain healthy. This presentation was well organized and delivered skillfully. I would love to see [this program] continue to be part of our school program next year! Thank you!”

- Kelly Gilbert,
Emerson K12

“We were very impressed by how well you’ve been able to pivot to an online environment. That was so much fun, and we look forward to working with your team again in the future!”

- Megan Wiener,
Redmond Elementary,
4th Grade



Community Learning

Cascade's vendor developed three multi-week community learning programs geared towards adult learners in 2021 to expand opportunities for residents to learn more about the importance of water:

- Watershed Health Series
- Home Water Use Series
- Field Trip Series

The pandemic slowed the launch of these programs, but Cascade produced two successful Watershed Ecology Field Trips in 2021 at Codiga Park (Tukwila) and Beaver Lake Park (Sammamish). The field trips included a study of local ecology, plants and wildlife, stream and lake sampling and testing, and a discussion of actions residents can take to protect and conserve water resources.



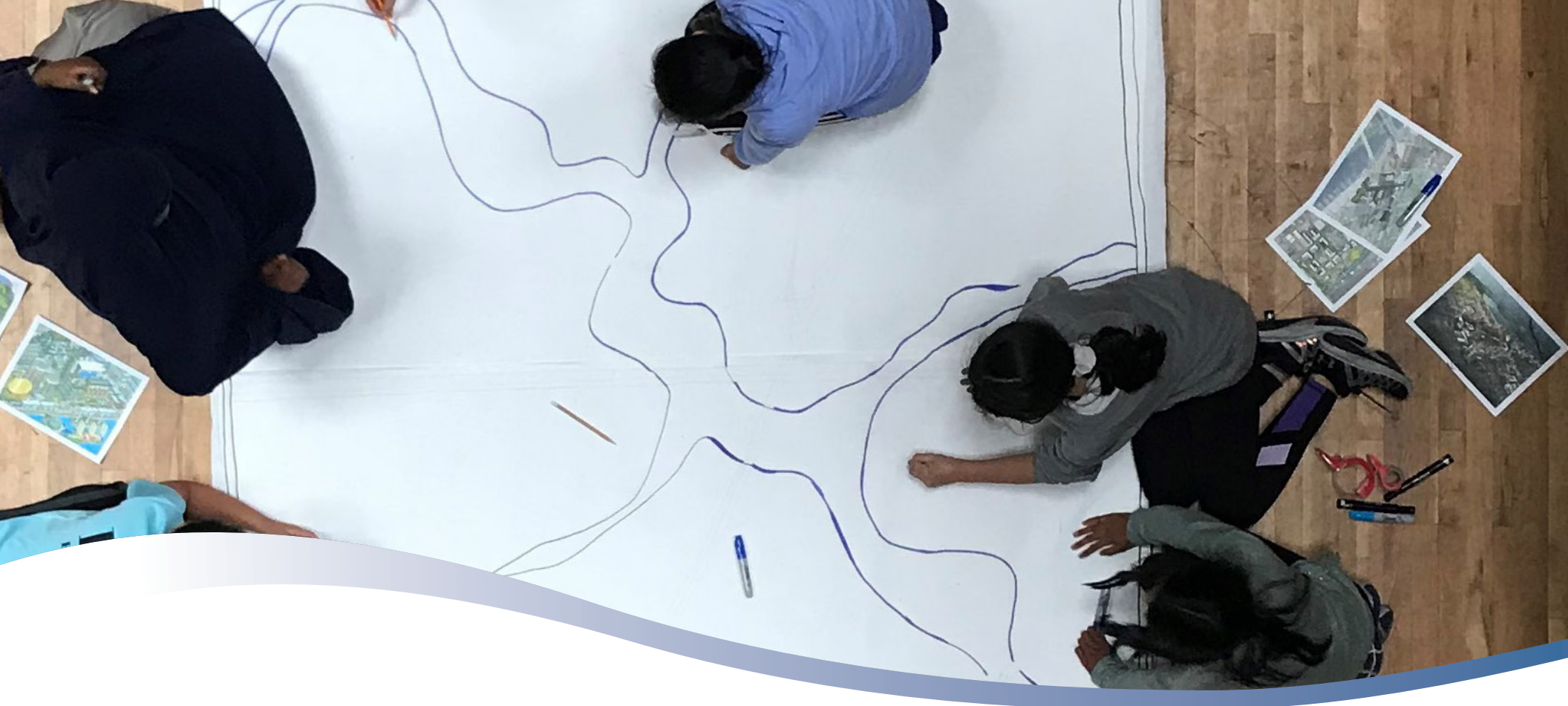
Garden Hotline

Cascade supports the regional Garden Hotline, a service provided by Tilth Alliance, Seattle Public Utilities, and others. Residents can call the Garden Hotline Monday through Saturday and receive expert advice on sustainable gardening techniques and conserving water in their landscapes. In 2021 174 residents in Cascade member areas utilized this service. The Garden Hotline also promotes Cascade Gardener events.



Soil and Water Stewardship Program

Cascade's partner, Tilth Alliance, administers the Soil and Water Stewardship program, which provides free training to residents who want to learn about natural yard care, watershed health, drip irrigation, rainwater harvesting, rain gardens and more. In return, the stewards bring their knowledge back to their communities and teach others the techniques they've learned. Tilth Alliance provided 12 volunteer training opportunities (virtual and in-person) and 12 community projects in 2021 with 138 participants. Community projects included building a new compost system at Campbell Hill Elementary in Skyway, rain garden and cistern maintenance at McAuliffe Park in Kirkland, and installing new drip irrigation systems at parks in Bellevue and Tukwila.



Video of SNOTEL Data Analysis

Problem-Based Learning for Water Systems

Cascade partners with Sustainability Ambassadors to deliver Problem-Based Learning for Water Systems (PBL4WS). This program provides middle school and high school teachers with a range of academic entry points including science, social studies, math, and language arts to incorporate the study of water into their classrooms. Teachers are supported by Cascade through a stipend, materials and resources, and educational opportunities relating to water issues.

In 2021 the program impacted thousands of students and dozens of teachers in all school districts within Cascade member areas. The units, lesson plans, and student impact projects include SNOTEL data analysis, drought, water chemistry and water purification engineering, writing science fiction to explore water scarcity issues, and seismic resiliency for water systems. Several labs and workshops were conducted on water scarcity, a clean water future, and climate change issues.



Water Watchers

Cascade partners with the Sno-King Watershed Council (SKWC), a community-based water monitoring program in King and Snohomish Counties, to deliver workshops and training to residents who are interested in becoming Water Watchers and monitoring local streams for watershed health. The goal of SKWC is to foster watershed stewardship through development of volunteer water monitors, which aligns with Cascade's goals. Residents learn how to monitor physical, chemical, and biological indicators of watershed health. The collected data is input into a national database and may be used for protection and restoration of watersheds, streams, and lakes as well as advocacy for the improvement of water quality and public health and to implement environmental education programs.

In 2021 SKWC's stream monitoring activities were still curtailed due to the pandemic, but, with Cascade's support, SKWC worked with Kirkland to provide water monitoring workshops and field training for Kirkland residents covering bacteriological monitoring, water chemistry monitoring, and stream biomonitoring.



We Need Water...

Cascade's We Need Water social media platforms provide insight into the many ways water connects us and affects our daily lives. Cascade provided many videos, tweets, articles, and posts throughout the year promoting Cascade's programs and activities and well as events, such as Earth Day and World Water Day.

Fix-A-Leak Week

In March Cascade supports 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 and ran newspaper ads in local newspapers promoting the Fix-A-Leak Week mission of helping people save water by finding and fixing leaks.

Cascade Gardener

This program uses expert instructors and regional gardening personalities to teach gardeners how to have beautiful landscapes without excessive water and chemicals inputs. Due to the pandemic, the classes were offered primarily in a remote learning format (which, according to class surveys, is the preferred method of attending now). Cascade provided 13 classes for 2,102 residents, a much greater attendance than ever before.

In addition, Cascade provided six garden walking tours at the Bellevue Botanical Garden and Bellevue Demonstration Garden in the summer with appropriate social distancing for 119 attendees.



WaterSense and ENERGY STAR® Initiatives

Cascade continues its partnership with Puget Sound Energy to provide point-of-purchase rebates for ENERGY STAR 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 1,095 clothes washer rebates, 180 showerhead rebates, five commercial kitchen projects, and four multifamily direct installation projects.

Multifamily Leak Detection

Cascade partnered with Kirkland staff to pilot a direct delivery of toilet leak detection dye to multifamily properties. Staff visited the properties with the offer of free leak detection dye and stay in

communication with the property manager to find out if they've used the dye and if they've discovered leaking toilets. Cascade plans to replicate the program in other member areas in 2022.

Website Ordering

Cascade offers free water efficiency items, such as showerheads, shower timers, and rain gauges, to homeowners in its member areas through its website. The online ordering process is easy, and the items are shipped to the customer's door. Cascade provided 2,081 items to residents, apartment complexes, and Cascade members for distribution to customers.



Moving Ahead

In 2018 Cascade revised its Transmission and Supply Plan and water savings goal. The new goal continues Cascade's current level of water conservation activities and funding support through 2022. The water efficiency program will continue to offset the impacts to regional water demand through growth so for the foreseeable future, overall annual water demand will likely remain flat or near flat when adjusted for weather. Areas for continued or increased emphasis in 2022 include:

Teacher and student education on water issues and the relationship between water and climate change

- Opportunities for more to participate in stream sampling to learn analytical techniques for water quality monitoring, data collection and analysis, and reporting
- More resources for teachers, such as videos, water study units, lesson plans, and materials, workshops, field trips, and expert presenters
- More opportunities for community learning about water

Continued emphasis on irrigation efficiency and sustainable landscape training

- Lake Washington Institute of Technology's Sustainable Landscape Technology program
- Irrigation evaluations and trainings for school district and other staff
- Cascade Gardener classes
- Resources available through We Need Water
- Soil and Water Stewardship Program
- Garden Hotline