



Cascade Water Efficiency Program 2020 Annual Report

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



Summary

The 2020 Cascade Water Efficiency Program (program) saves approximately 17.6 million gallons of water per year. These savings are equivalent to providing all the indoor water needs for 220 Washington families. 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 promotes Cascade as a 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 one full-time employee to manage the program, and total expenses in 2020 were \$440,210 including materials, services, and salaries.

The pandemic disrupted Cascade's normal operations, and the water efficiency program was no exception. Gardening classes, school programs, and landscape efficiency projects had to be cancelled, and savings-generating programs, such as clothes washer and showerhead rebates, were less active and produced fewer savings than in previous years. However, Cascade's vendors and partners quickly adapted to the situation in creative ways and continued to deliver programs and services for Cascade's residents. The 2020 program provided value to Cascade members' residents.

PROGRAM AT A GLANCE...

Community Engagement

295 Classroom Presentations | 7,053 Students Reached in Presentations

8,205 Times Remote Learning Materials Accessed

37 Teacher Fellows | 6,895 Students Reached

1 Community Event

12 Cascade Gardener Classes | 178 Cascade Gardener Attendees

197 Garden Hotline Calls

18 Soil and Water Stewardship Training Events | 196 Soil and Water Stewardship Training Attendees

6 Stream Monitor Trainings

16 Stream Monitor Certifications

Savings Generating Measures (Direct Installations, Rebates, Distribution)	Completed
Residential Clothes Washers	696
Residential Showerheads	2,518
Event-Distributed Conservation Items	1,750
Online Conservation Item Orders	3,392



Total Annual Savings: 17,635,340 gallons



48,316
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 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.



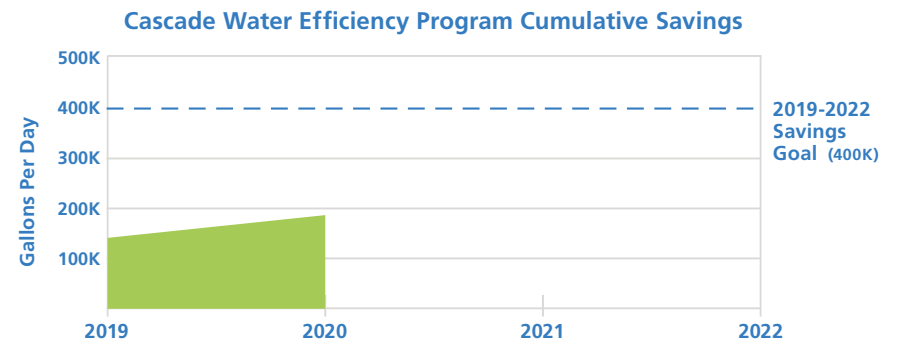
Continued Partnerships

Cascade continues to grow and sustain partnerships in the region to leverage resources and promote the importance of reliable, clean, drinking water. In 2020, Cascade collaborated with many entities including Lake Washington Institute of Technology, Sno-King Watershed Council, Bellevue, Issaquah, Lake Washington, and Tukwila School Districts, Puget Sound Energy, Sustainability Ambassadors, and Tilth Alliance.



Savings Goal

Cascade’s 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 2020 Cascade achieved an estimated savings of 48,316 gallons. Along with 2019 savings, this represents 47.7% of Cascade’s 2019-22 Water Use Efficiency Savings Goal.





Classroom Presentations

Cascade provided 295 classroom presentations for 7,053 students at schools within Cascade member service areas. The programs included regular curriculum, AquaPals, Community Science Teams, and Blue Teams delivered in-person and remotely. This was a reduction from 2019 totals, but still significant considering the disruptions from the pandemic.



Remote Curriculum

After schools were closed in March, the vendor, Nature Vision, and Cascade developed seven remote learning packets based on content from the in-classroom programs: Ecosystems, Watersheds, Humans and Water, Ecological Impacts, Water Quality, Human Systems, and Invasive Weeds. Each packet was further modified for four grade levels (K-2, 3-5, 6-8, and 9-12) and supported by videos and live question and answer sessions for teachers. The packets were accessed 8,205 times during the course of the year and teacher and parent feedback was very positive.

"It was easy to walk through the experiment with students and students were able to replicate it themselves."

"I loved having someone else come up with creative ideas and provide the content behind the purpose of each. This relieved me of a huge burden!"

"I loved the vocabulary and the application to the real world."

– **Teacher Feedback**
on Remote Learning Packets.



New Content

Climate Change and Microplastics

In 2020, Cascade and its vendor developed six one-hour classroom programs on the topics of Climate Change and Microplastics in the environment and how these issues relate to water resource management. These programs are now available for use.

Community Learning

Adult learners are often very interested in water issues, so Cascade and its vendor developed three, multi-week Community Learning course series based on relevant, water-related science, geared towards adults. The topics are Watershed Health, Home Water Use, and Ecology Field Trips. These programs will be offered when in-person learning is again available and will expand Cascade's educational reach to additional residents.

Community Learning Program Goals:

- Develop high quality science/environmental education content for an adult audience.
- Engage critical thinking about our local water sources and how supply is affected by individual actions.
- Deliver this content as 45-60 minute classes at senior centers, community centers, YMCA campuses, libraries, and faith-based community locations.



Soil and Water Stewardship Training

Cascade's partner, Tilth Alliance, operates the Soil and Water Stewardship program, which provides free training to residents who want to learn more 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 18 volunteer training opportunities (virtual and in-person) in 2020 with a total of 196 attendees.



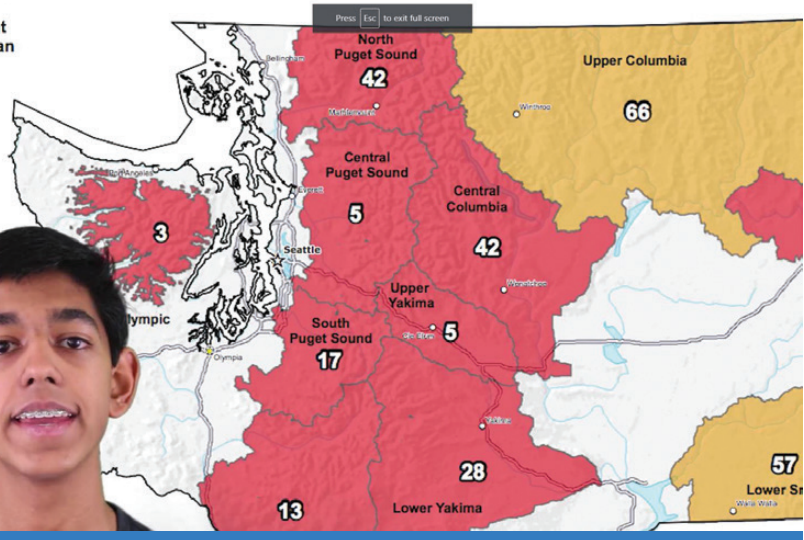
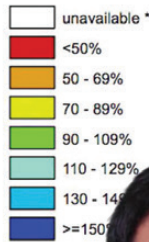
Community Gardens

Cascade's partnership with Tilth Alliance includes community workshops on rainwater harvesting, drip irrigation, and other topics to help residents use water wisely. Residents construct community gardens and maintain pea patches with the support of Tilth Alliance and Cascade.

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 2020, 197 residents in Cascade member areas utilized this service. The Garden Hotline also promotes Cascade Gardener events.

Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median



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 2020, Cascade supported 37 Teacher Fellows who engaged 60 additional teaching peers. Together these educators impacted 6,895 students in all school districts within Cascade member areas.

The units created by teachers for their classrooms included climate change and water supply, SNOTEL data analysis and the Puget Sound Ecosystem, the global water crisis, wastewater engineering, snowpack data analysis and the Puget Sound ecosystem, water chemistry and water purification engineering, writing science fiction to explore water scarcity issues, and rain water harvesting math.

In 2020 the PBL4WS provided four, remote curriculum design labs focusing on water:

- Climate Change Impacts and Water Supply
- Water Quality and Puget Sound Ecosystem Integrity
- Integrating Sustainability Systems Thinking Across the Middle School Curriculum
- Green Duwamish Watershed; Systems Thinking for Fish, Farms, Floods, and Us

“My goal is that all chemistry classes in the Lake Washington School District will use this water engineering unit created through Problem-Based Learning for Water Systems to provide context to reaction rates and equilibrium, and challenge students by designing engineering solutions.”

– **J.D. Stutz, High School Chemistry and Earth Science Teacher, Lake Washington School District**

“My Students have benefitted from the Water Challenge Curriculum as they have engaged in problem-based learning and crafting solutions that could possibly be implemented in their community.”

– **Maile Morgan, 7th Grade Social Studies, Bellevue School District**



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 2020 SKWC's stream monitoring activities were sharply curtailed due to the pandemic, but, with Cascade's support, still provided six water monitoring workshops with 29 attendees 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.

Cascade Gardener

This program uses expert instructors to teach gardeners how to have beautiful landscapes without excessive water and chemicals inputs. Most classes were canceled at the start of the pandemic. Cascade provided 12 classes for approximately 178 residents at venues in all member areas.



WaterSense 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 696 clothes washer rebates and 2,518 showerhead rebates in 2020.

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 1,750 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 2021 include:

Teacher and student education on water issues and the study of water

- Opportunities for 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

Community Learning

- Offer more opportunities for residents to learn about water
- Classes in multiple languages

Continued training on irrigation efficiency and sustainable landscape training

- Lake Washington Institute of Technology's Sustainable Landscape Technology program
- Cascade Gardener classes
- Soil and Water Stewardship Program