Cascade Water Efficiency Program
2024 Annual Report

Introduction

The 2024 Cascade Water Efficiency Program (program) saved 83,401 gallons of water per day or approximately 30 million gallons per year. Along with the savings from 2019 - 23, the program has achieved 69% of Cascade's 2019 – 26 Water Use Efficiency Goal. The program benefits thousands of member residents, students, businesses, schools, and parks by providing training, education, support, and conservation hardware. The program provides water savings, promotes the value of water, and extends the useful life of the region's current water resources further into the future. Cascade employs one full-time employee to manage the program and 2024 expenses were $769,301.

Classroom Water Education

The Classroom Water Education program delivers high-quality, locally relevant programming that is aligned with Washington's Essential Academic Learning Requirements. Through its vendor, Nature Vision, Cascade provided 506 in-person programs and Blue Team projects to 12,401 students.

Classroom Presentations

Cascade's vendor provided presentations on diverse topics, such as "Healthy Water, Healthy Ecosystems," "Water Supply," "Waterwise Gardening," "All About Groundwater," and "Carbon, Climate, and Conservation" for K-12 classrooms. The presentations are supported by materials, activities, videos and knowledge retention surveys developed by the vendor.

Blue Teams

Nature Vision also provides a Blue Team option, which is where an educator works with a class to create a customized project over a period of several visits for a more in-depth study of a particular subject.

Example Blue Team Project: Three third grade classes at Tukwila Elementary School spent six weeks with an educator studying their local watershed. They learned about the salmon cycle in local streams, the importance of soil in cleaning water, the carbon cycle, microplastics, and the impact of drought on watersheds and water systems.

Teacher Testimonials:

"The microplastics program has been an incredibly enriching and insightful experience for our students. They thoroughly enjoyed delving into the topic of microplastics and their impact on the environment. Through this program, students not only learned a great deal about the detrimental effects of microplastics but also developed a deeper understanding of sustainability and the importance of reducing plastic waste. The interactive and engaging nature of the program truly captivated the students' interest and facilitated a dynamic learning environment. The enthusiasm and knowledge gained by the students highlight the success of this program. We sincerely hope to have continued support for such valuable programs in the upcoming school year to further educate and inspire our students towards a more sustainable future."

- Chunghui Jo Sung, Jing Mei Elementary School

"My class had a WONDERFUL time with the lesson! Ms. Rachel did a great job teaching students about soil. They LOVED the hands-on activity. We will definitely do this again next school year if it is available, as it goes PERFECTLY with our science unit, needs of plants and animals. Our only regret is that we didn't do this sooner in the fall. I hope that Cascade Water Alliance continues to sponsor this incredible learning activity."

- Tahani Hammad, McAuliffe Elementary (Sammamish)

"Starting with my class, students gain an understanding of local forest and stream ecosystems. This lesson is used as the transition from forest to stream studies and connects them both together perfectly. As a school we have started a salmon tank, continue to work on restoration work at nearby Watershed Park, and have begun clearing a stream that runs through our campus, Cochran Springs, in partnership with the City of Kirkland and the King Conservation District. So yes, this program is an integral part of our learning and applies to our sustainability efforts and environmental stewardship."

- Burton Barrager, Eastside Preparatory School (Kirkland)

"The Drought class was interesting, and the kids loved examining the sample tree pieces. If there are any more hands-on activities they could do with this presentation, that would be terrific. My class enjoyed this class as well! They loved looking at the tree rounds and trying to figure out the age of the tree and which years may have suffered drought. My group sidetracked into the burst pipes due to the frozen weather we had just had, and I appreciated Colleen's willingness and ability to incorporate their interest and still maintain the thread of the lesson."

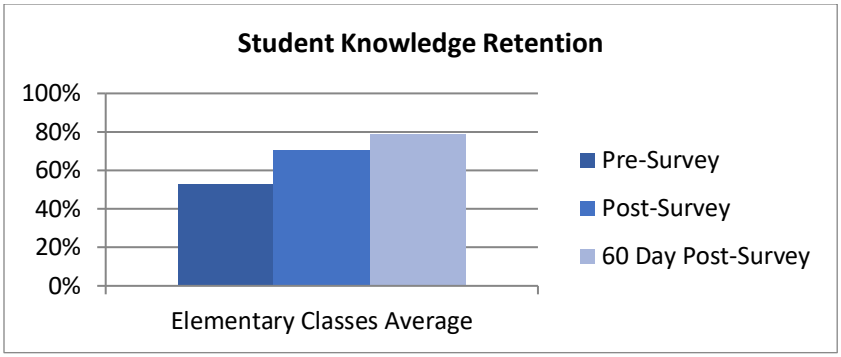
- Brenda Edwards and Megyn Essig, Lakeview Elementary (Kirkland)

Student Feedback

How can we help restore our rivers, like the Duwamish?
By putting more parks, recycling, and not trashing the waters.
Having good soil in and around the rivers and to not pollute them.
The Duwamish river is filled with a lot of trash, so ensure that we don't throw trash into the river or litter because trash can be carried by wind or rain to the river.
We can help restore rivers by not dumping in them, and not paving and straightening them. By doing so, we can see the life expectancy and birth rates go up in key species
Get rid of the pollutants from the river to clean it up and make fish live in it again
Rebuild them and make them extended like they used to be, so the fish have more space.
Not providing our plants on land with excess nutrients.
Don't litter obviously, planting native plants can also help the ecosystem, let the salmon be.
Allowing the river to branch off into separate, smaller areas for fish such as salmon to have a safe spot to feed.
Rebuilding shorelines with native plants.
We can help restore out rivers by lowering human impact such as pollution and harmful chemicals into the water. This will allow salmon, a vital organism to the area, to thrive in its ecosystem.
We can make floodplains, levies, and clean up trash. We can plant more trees to filter out the pollutants even further.
You can donate to projects that are helping restore the rivers.
I guess taking better care of the soil.
We can plant native plants to hold back the bad stuff so that it doesn't enter the river and pollute it.
Many things can be done from the obvious such as not littering to the lesser known like keeping your car in check to prevent oil spills.

Program Evaluation

In addition to teacher and student surveys, the vendor performs pre- and post-survey work with some classrooms to determine how well students learn and retain the presentation knowledge. The survey quizzes focus on key elements of the presentations and basic concepts of watersheds and water conservation. The average classroom survey results are shown below:



Problem-Based Learning for Water Systems

The Problem-Based Learning for Water Systems (PBL4WS) program, co-created with Sustainability Ambassadors, is for teachers and students who want more in-depth learning about water systems. The program enriched the learning of approximately 1,200 students and dozens of teachers in the following ways:

- Supported local teacher who completed a Water Management Handbook for an Environmental Systems Design course at STEM high school.
- Developed an extensive set of resources to support the Snowpack Curriculum.
- Published video on rainwater harvesting.
- Facilitated Town Hall in collaboration with Bellevue that included a "Shrink Your Lawn" campaign.
- Students created content for "Imagine A Day Without Water".
- Facilitated a teacher lab on Water Demand Forecasting.
- Worked with Kirkland to provide a workshop called "Trees Are Cool", incorporating water efficiency.
- Facilitated Five-Day "Green Economy Institute" with one day focusing on water management aspects of green buildings.
- Hosted "Designing a Net Zero Water School" workshop.
- Produced fifty-five social media posts on a wide range of water-related topics.
- Provided a turf removal training pilot for Sustainability Ambassador homes.
- Produced annual 2050 Update livestream event featuring Water Systems Stories.
- Developed new lesson plans or updated plans, including:
    - Rainwater for Water Supply
    - Coolest Graph Ever on Water Conservation
    - Family Engagement on Climate Action (including water conservation)

Home Water Audits

Cascade offered materials for teachers who wished to have their students conduct a water audit to better understand how much and how water is used in their homes. The program includes digital materials to guide students through the process, measuring devices, and spreadsheets where they can record their findings. The spreadsheets calculate not only the potential water savings, but also the energy savings and avoided greenhouse gas emissions. When a classroom or entire grade sums the collective savings, the potential impacts are significant. Cascade also provides showerheads and aerators for students who find high-flow fixtures in their homes. In 2024 two teachers and 222 students at Pacific Cascade Middle School (Issaquah) participated in the program.

Water Bottle Filling Station Project

Cascade worked with Issaquah High School to achieve the installation of a water bottle refilling station at the school. The project was initiated by a student who wanted to encourage others to switch from single-use plastic bottles to reusable. Cascade provided partial funding for the cost of the new station and 500 *We Need Water* refillable water bottles for any student who took a pledge to avoid plastic bottles and use the station. The school recognized the work of the student who championed the project and promoted the value of water at its homecoming event.

Cascade Gardener

Cascade provides classes and other learning opportunities for residents to learn about sustainable landscaping and water efficiency. Most classes are held through ZOOM, but there are also classes at nurseries and educational garden tours. All classes incorporate water efficiency into the presentation.

Remote Learning

Cascade continued its remote gardening classes with a winter, spring, and fall series. There were sixteen ZOOM classes with 2,178 total attendees and an average of 136 per class. Almost all attendees said they prefer remote learning to in-person classes. Reviews were overwhelmingly positive.

Garden Walking Tours

Cascade holds several in-person garden walking tours with expert presenters to help residents see healthy watersheds and native plants options for their home landscapes. In 2024 there were seven garden walking tours with 103 total attendees.

Nursery Classes

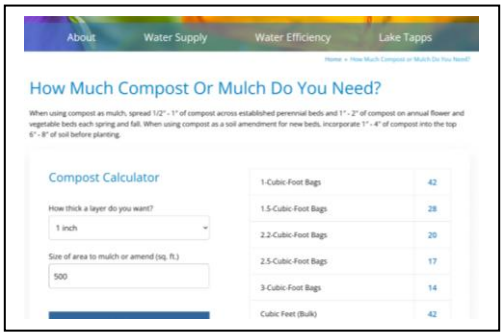
Cascade maintains excellent working relationships with local nurseries – Bellevue Nursery, Squak Mountain Nursery, and Grey Barn Nursery. In 2024 Cascade held nine nursery classes with 251 attendees.

Training

Cascade provides landscape and irrigation training as requested to teach irrigation managers how to maintain beautiful landscapes without using excessive water. In 2024 Cascade provided two training courses for member staff who manage parks and streetscapes and one drip irrigation workshop for the public with 35 total attendees.

Website Resources

In 2024 Cascade created a compost calculator for its website to help residents determine how much compost to use in their landscape and gardens. This will be a helpful tool for residents who want to remove part of their lawn.



Cascade also continues to add more content to the Cascade Gardener section of the website, including videos on mulching, drip irrigation, and ground covers and printed materials on a wide variety of sustainable landscaping and water efficiency in the garden, all free for Cascade-member residents to access.

Garden Hotline

Cascade supports the regional Garden Hotline, which is a resource for residents to have their gardening and landscaping questions answered by gardening professionals from Tilth Alliance with an emphasis on water efficiency and sustainability. In 2024 the garden hotline received 206 calls from residents in Cascade member areas.

Watershed Ecology Field Trips

Working with member staff, Cascade provides watershed ecology field trips for residents who are interested in learning about watershed ecology, plants and wildlife, and stream sampling. Families sometimes attend field trips and reviews are positive. The field trips are typically held in local parks with streams nearby. In 2024 Cascade provided a field trip at Confluence Park in Issaquah with 13 people attending.

Irrigation Assessments

Cascade offers free irrigation assessments for high-peak season use customers. Cascade provides a detailed report of the assessment with specific strategies for achieving greater water efficiency and sustainability. In 2024 Cascade initiated or completed six irrigation assessment projects. Cascade maintains contact with staff at these properties and will assist in the implementation of Cascade's recommended measures over time.

Leak Detection Dye Distribution

Cascade contacted 209 multifamily, houses of worship, motels, and large employers with offers of free toilet leak detection dye during annul Fix a Leak Week. Cascade provided dye to all accounts that were interested.

Online Orders

Cascade provided approximately 500 shower timers, rain gauges, leak detection dye packets, and other conservation items through Cascade's website. The conservation items are provided free of charge to Cascade member residents, schools, businesses, and homeowner associations who pay the postage to ship the items. Cascade also provides members with conservation items for distribution to customers at utility offices, community meetings, and events.

Soil and Water Stewardship

Cascade co-created and partners with Tilth Alliance to deliver the Soil and Water Stewardship program, which provides free training for residents on sustainable landscaping practices, rainwater harvesting, drip irrigation, and other water-related topics. Cascade assists in promoting the program to recruit residents from Cascade member areas.

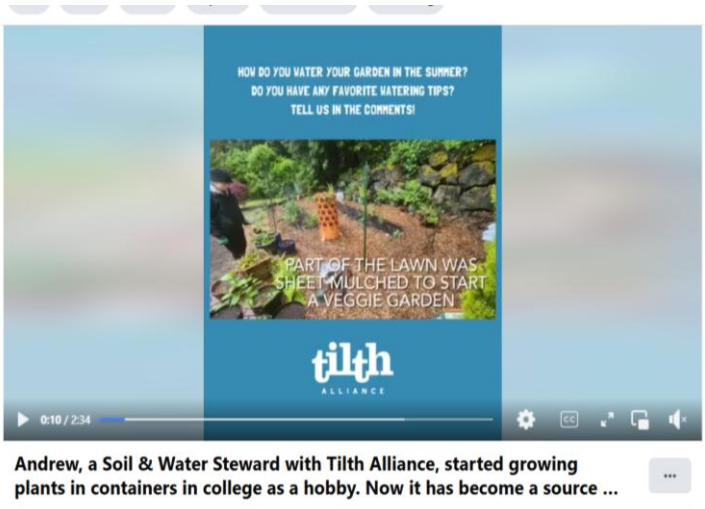
The program was very active in 2024 with 47 Soil and Water Stewardship training events, seven community projects, and four school projects completed with 1,321 volunteers.

The four school projects were:

- Created a rainwater catchment system in the school garden, removed turf, and planted native plants and fruit trees at Campbell Hill Elementary School in Skyway
- Set up a compost bin at the Redmond High School Garden
- Supported the Foster High School in Tukwila by preparing the gardens for winter
- Taught Bellevue Community College students about lawn removal, native plants, and organic gardening

Rain Barrel Installation at Campbell Hill Elementary School

In 2024 Cascade incorporated turf removal into the Soil and Water Stewardship program via the "Lawn to Functional Landscape Campaign". Through this campaign, the program volunteers learned techniques for correctly removing turfgrass from a landscape and replacing it with native plants or food crops. The campaign completed seven local turf removal projects.



Social media post showcasing one of the turf removal projects in Kirkland.

Events

Cascade supports its members through events, such as fairs and festivals, to promote water efficiency and member objectives. Cascade made thousands of customer impacts at the following events in 2024 and provided approximately 9,472 conservation items, such as shower timers, rain gauges, and toilet leak detection dye:

- World Wetlands Day
- Northwest Flower and Garden Festival
- Issaquah Sustainability Fair
- Earth Day in Kirkland
- Redmond Sustainability Fair
- Bellevue Family Fourth
- Redmond Derby Days
- Kirkland Farmer's Market and Concert Series
- Skyway Health and Wellness Fair
- Sammamish Jubilee Celebration
- Salmon on Sunset
- Issaquah Salmon Days

Skyway Health and Safety Fair

We Need Water

In 2024 Cascade expanded the We Need Water social media campaign's reach more than sixfold from the previous year. Major accomplishments included:

- Reached 640,689 people
- Published seven podcasts with approximately 1,700 downloads
- Provided 547 posts on Instagram and Facebook
- Published twelve Cascade Gardener newsletters
- Grew by 348 new followers

Shared Rebate Programs

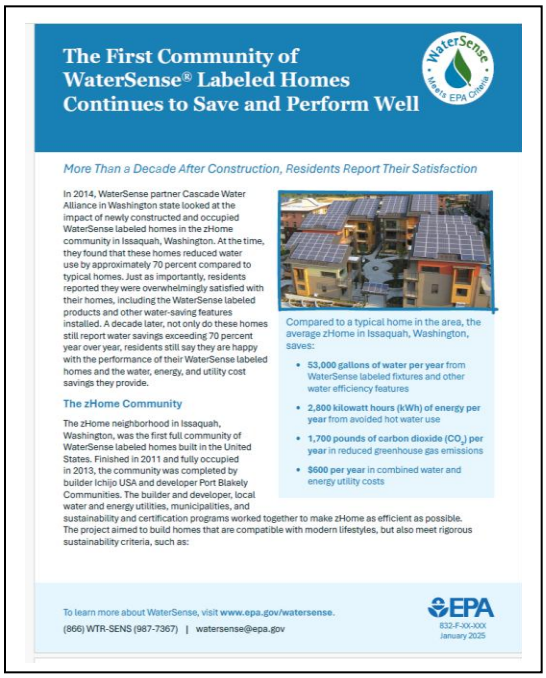
Cascade cost shares with Puget Sound Energy on selected Energy Star and WaterSense rebate programs, such as clothes washers, showerheads, and faucets. In 2024 Cascade shared in:

- 3,854 rebates for EnergyStar-labeled clothes washers
- 636 rebates for WaterSense-labeled bathroom faucet aerators
- 21 rebates for WaterSense-labeled pre-rinse spray valves in commercial kitchens and cafeterias

zHome Study

Cascade completed a study in collaboration with US EPA and Issaquah to determine the long-term efficacy of the zHome development in the Issaquah Highlands. Cascade was a partner in the original project and helped the developer attain WaterSense New Homes Certification for all ten homes in the development (the first development in the nation to do so). Cascade staff conducted a survey of the zHome residents in 2014 to determine the per capita water usage and satisfaction with the water

features and cisterns of the homes. Cascade staff returned in 2023/2024 to complete another round of surveys and to obtain updated water use information. Residents are still happy with the homes and each home uses about 53,000 fewer gallons of water annually than an average home in the region.



The First Community of WaterSense® Labeled Homes Continues to Save and Perform Well

More Than a Decade After Construction, Residents Report Their Satisfaction

In 2014, WaterSense partner Cascade Water Alliance in Washington state looked at the impact of newly constructed and occupied WaterSense labeled homes in the zHome community in Issaquah, Washington. At the time, they found that these homes reduced water use by approximately 70 percent compared to typical homes. Just as importantly, residents reported they were overwhelmingly satisfied with their homes, including the WaterSense labeled products and other water-saving features installed. A decade later, not only do these homes still report water savings exceeding 70 percent year over year, residents still say they are happy with the performance of their WaterSense labeled homes and the water, energy, and utility cost savings they provide.

Compared to a typical home in the area, the average zHome in Issaquah, Washington, saves:

- **53,000 gallons of water per year** from WaterSense labeled fixtures and other water efficiency features
- **2,800 kilowatt hours (kWh) of energy per year** from avoided hot water use
- **1,700 pounds of carbon dioxide (CO_2) per year** in reduced greenhouse gas emissions
- **$600 per year** in combined water and energy utility costs

The zHome Community

The zHome neighborhood in Issaquah, Washington, was the first full community of WaterSense labeled homes built in the United States. Finished in 2011 and fully occupied in 2013, the community was completed by builder Ichijo USA and developer Port Blakely Communities. The builder and developer, local water and energy utilities, municipalities, and sustainability and certification programs worked together to make zHome as efficient as possible. The project aimed to build homes that are compatible with modern lifestyles, but also meet rigorous sustainability criteria, such as:

To learn more about WaterSense, visit **www.epa.gov/watersense**.
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zHome Resident Satisfaction Survey 2014 & 2023