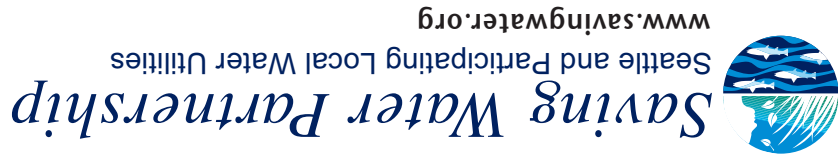
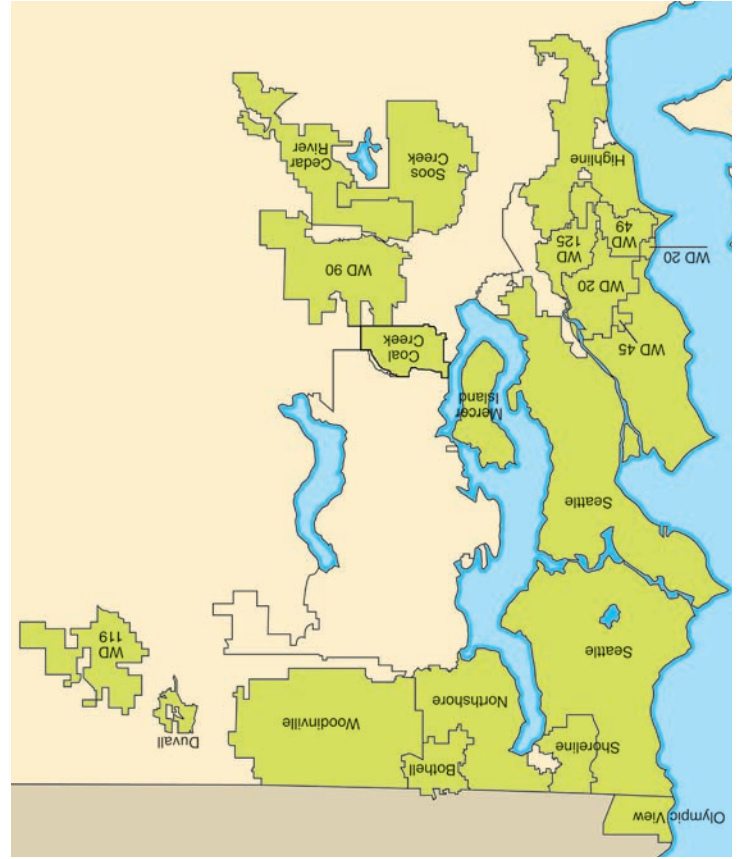


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**REPORT PREPARED BY:
 SEATTLE PUBLIC UTILITIES RESOURCE
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 Cedar River Water & Sewer District
 City of Bothell
 City of Duvall
 City of Mercer Island
 Coal Creek Utility District
 Highline Water District
 Northshore Utility District
 Olympic View Water & Sewer District
 Seattle Public Utilities
 Shoreline Water District
 Soos Creek Water & Sewer District
 Water District Number 20
 Water District Number 45
 Water District Number 49
 Water District Number 90
 Water District Number 119
 Water District Number 125
 Woodinville Water District



**SEATTLE REGIONAL WATER
 CONSERVATION SERVICE AREA**

SEATTLE WATER SUPPLY SYSTEM REGIONAL 1% WATER CONSERVATION PROGRAM

**saving water partnership 2010 annual report
 & TEN YEAR PROGRAM REVIEW**



July 2011

PROGRAMS AND ACCOMPLISHMENTS



The "Grow Your Business" post card was mailed to landscape contractors to encourage them to market Water Efficient Irrigation Program rebates.



SWP co-sponsored free training for landscape contractors in Spanish.



In 2002, the SWP introduced tiered rebates for clothes washers, paying higher rebates for the most efficient machines.



This giant inflatable marked the entrance to the SWP Toilet Round-Up event.



A common type of toilet flapper.



Ciscoe Morris, a popular local gardening expert, served as spokesperson for Natural Yard Days.



Debbie Rannfeldt of Woodinville Water District views the drip irrigation that replaced a section of in-ground irrigation system at Willows Lodge in Woodinville.



Philip Paschke, SPU Commercial Conservation Program Manager, watches the penguins frolic in crystal clear recycled water, saving the region thousands of gallons per day.



Cornell Amaya of SPU and Tom Nance, Chief Engineer of Group Health Hospital, inspect a new medical air compressor.

2010 Acknowledgements



SEATTLE PUBLIC UTILITIES

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(206) 684-SAVE www.savingwater.org
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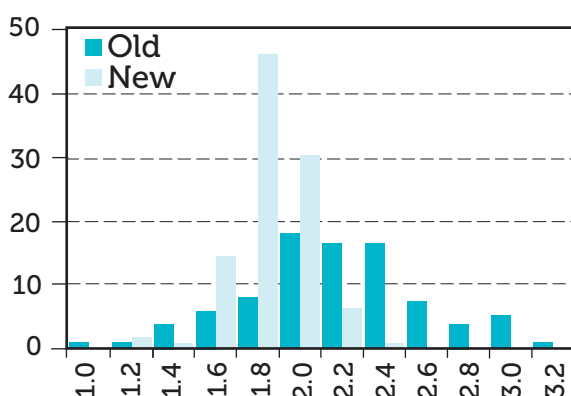
For TTY assistance please call (206) 233-7241. This information can be made available on request to accommodate people with disabilities and those who need language assistance.

EVALUATION AND MONITORING

2010 EVALUATION AND MONITORING

SWP program evaluation and customer research were postponed in large part in 2010 due to budget constraints. Progress was made at the national level, however, on research efforts that will help measure the success of conservation measures and of conservation programs. Residential and commercial programs continued to track and monitor their progress and make refinements. The 2009 annual accomplishments report was issued.

Showerhead Flow Rate Distribution in Gallons/Minute



As an example of evaluation efforts, this graph from the 2007 Single Family Showerhead Program Evaluation shows that more than half the customers' showerheads flowed at more than 2 gallons per minute before the program, and that 90% of the showerheads flowed at 2 gallons or less per minute after the program. (Report published by Seattle City Light in 2009).

EVALUATION AND MONITORING - TEN YEAR PERSPECTIVE

Program evaluation informed staff decisions throughout the 1% Program. Monitoring program results, evaluating customer satisfaction with SWP programs, and evaluating program savings all contributed to making sure that resources were put to their best use. A baseline survey of customer awareness and behaviors was conducted periodically to “take the pulse” of customer attitudes and determine the penetration of program messages.

Highlights include:

- Comprehensive Residential Conservation Evaluation (2002). Included baseline survey of customer attitudes and behaviors; participant satisfaction surveys; data for quantifying fixture upgrades.
- Comprehensive Commercial Conservation Evaluation (2002). Incorporated field monitoring to revise savings estimates; regional business survey of awareness and barriers; and participant surveys for service satisfaction.
- Residential Landscape Evaluation (2002). Included audits and irrigation hardware testing; soaker hose and compost survey at retail stores through Natural Yard Days; retail sales data.
- Metered sample of residents to refine estimates of indoor water use. (2003)
- Market research surveys of high-use customers. (2003)
- Research that quantified market share of largest water uses in most homes. (2004)
- Surveyed Natural Guides recipients to learn which behaviors were being adopted. (2004)
- Regional Conservation Benchmarking Research (2006). 1,100 customers surveyed. Enabled SWP to analyze

customer water consumption in relation to attitudes, behaviors and participation in SWP programs.

- Billing attribution analysis correlated conservation behavior change programs with customer consumption. (2007) Research found that customer awareness of utility conservation programs affected consumption, indicating the value of education and outreach program elements in a comprehensive conservation program.
- Showerhead Program Evaluation (2008). Energy partners PSE and SCL conducted customer surveys to determine installation rates and customer satisfaction with the product, delivery strategy and marketing of the 2007 showerhead and aerator replacement program.
- Collaborated with Water Research Foundation to update Residential End Use Study. (2009)

In addition to program evaluation, significant resources were put into program planning through conducting assessments of conservation potential. The Conservation Potential Assessment (CPA) reports guide program implementation by identifying conservation opportunities and costs. Measures implemented in the early years of the 1% Program were based on the 1998 CPA. An updated CPA report was produced in 2006, including a new conservation measure library with econometric analysis of over 120 measures. This document provides the analytical framework for regional conservation program planning and design from 2006 forward.

For a comprehensive list of program evaluation and planning reports visit www.savingwater.org and www.seattle.gov/util/About_SPU/Water_System/Reports.

YOUTH EDUCATION

Table 8: 2010 Youth Education Performance

Activity	Outreach Life of Program 2000-2010	2010 Outreach
Activity Books Distributed	9,000	500
Water Busters Game Hits	44,911	2,473
Conservation Kits Distributed	43,660	NA
Water System Posters	12,900	NA



This web page speaks to kids at their grade level.

YOUTH EDUCATION - TEN YEAR PERSPECTIVE

Work in this sector initially built a strong partnership with teachers and school district curriculum staff to identify and meet needs for teacher training and classroom materials. Outreach evolved to reach students directly with educational messages.

Mike Mercer anchored the SWP regional youth environmental education program at SPU for over 25 years. He provided new learning opportunities about water, nature, and resource conservation to thousands of young people. Sadly, Mike passed away unexpectedly on July 13, 2007. Mike continues to be greatly missed. The Environmental Education Association of Washington Mike Mercer Scholarship Fund and the Partnership for Water Conservation Annual Educators Award have been created in his honor.

Highlights include:

- Classroom presentations given to thousands of students.
- Water Matters teacher workshops. Three college-level courses on water were provided to elementary teachers in 2000, 2001 and 2003 in response to

requests from school district administrators. These challenging courses enhanced teachers' understanding of water and the scientific concepts found in the school districts' earth science kits. The material was directly connected to the State education requirements for Science. Workshop evaluations were very positive.

- Development of Water System Posters, activity books, and a Home Water Savers Kit.
- Online interactive map and virtual watershed tours.
- Water Busters interactive online educational game. The site received 12,000 hits in 2006 alone.
- TV ad featuring Bert the Salmon and his sidekick Phil Dumpster promoted the Water Busters game to kids.
- Partnership with Woodland Park Zoo in 2007 included water conservation messages and conservation kit distribution in the Zoo's Maasai Journey education effort during the peak summer visiting season. 3,951 attended the Wonderful Waterholes program. Hundreds of shower timers and conservation kits were distributed.

2010 YOUTH EDUCATION

Efforts continued to educate young people about water conservation and environmental stewardship in 2010. Bookmarks were distributed to promote the SWP Kids Web Page, designed for youth aged 7-17. The bookmarks were distributed at utility customer counters, events and schools. Shared Waters activity books were also distributed.



Students on a field trip to the Cedar River Watershed, led by the late Mike Mercer.



Cover art: Night Sound by Thomas Stream

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Ten Years of Increasing Efficiency

EXECUTIVE SUMMARY – A CONSERVATION SUCCESS STORY

GOAL AND RESULTS

In 2000, the Saving Water Partnership (SWP) took on an ambitious goal: keep water demand from increasing over the next ten years, despite regional population and economic growth. Seattle was one of the very few large cities in the country attempting to manage expected growth in water demand through conservation. This would be accomplished by reducing per capita consumption an average of one percent per year for ten years, or ten percent over the life of the program. Accordingly, the program was named the Regional 1% Water Conservation Program. Ten years later, thanks to the great efforts of regional water customers, the overall goal was not only achieved, but exceeded. Average annual demand was lower in 2010 than in 2000. In fact, regional water consumption is at its lowest level in 50 years.

The ten-year goal translated into a conservation program target of saving 11 million gallons per day (mgd) by the end of 2010. With the support of residential, commercial and institutional customers, the SWP achieved 0.57 million gallons per day

of conservation program savings in 2010, for a cumulative total of 9.56 mgd for the years 2000-2010. At a cost of \$35 million versus the originally projected program life cost of \$55 million, the Regional 1% Conservation Program has been delivered on-time and nearly one-third below expected cost. Given the ambitious goal and the conservative estimate of savings achieved, the 1% Water Conservation Program has become one of the most successful examples of utility-led water conservation in the nation.

WHY CONSERVATION?

Water conservation is an economically and environmentally responsible way to accommodate the competing demands for drinking water and in-stream environmental flows for fish and other aquatic species. As a proven water supply resource, conservation measures have demonstrated reliable savings that are expected to continue into the future.



GENERAL CUSTOMER OUTREACH AND MESSAGING

GENERAL CUSTOMER MESSAGING IN 2010

General messaging builds an ethic of conservation that supports the residential and commercial programs. In 2010, general messages about ways to save water and save money on utility bills, and the value of saving water for salmon, were conveyed through SWP utility newsletters, Drinking Water Quality reports, and the regional website, www.savingwater.org. The website has become an increasingly important tool for the program, as more customers turn to the web as their preferred source for information. In 2010, an upgrade to the website was undertaken, to streamline the information and make key content more easily accessible. The upgraded site, when it launches in 2011, will feature easier navigation and will be more interactive, with current news, a calendar of events, and social media capability.



This educational display helped people learn about water use and how to fix leaks.

GENERAL CUSTOMER OUTREACH AND MESSAGING - TEN YEAR PERSPECTIVE

The early years of the 1% Program focused on developing an overarching brand - "What Will You Save Today?" to support the conservation ethic underlying all the SWP programs. Messaging in the early years, based on customer research, also emphasized why water conservation is needed. A regional web site, www.savingwater.org, and phone hotline, 684-SAVE, were established in the first year of the Program. Messaging shifted to promoting specific programs, and how to save water during the middle and later years of the Program.

Resources were used very efficiently, leveraging small budgets into as big a reach and impact as possible. Outreach messaging included themes of conserving for future generations, water for fish and people, Bert the Salmon wise use, Right Plant, Right Place, A Better Way to Beautiful, Overwatering Soaks You, and Salmon Friendly Gardener. Many communication vehicles were used, including print ads, ads on Metro buses for WashWise, and internet banner ads for landscape messages.

Highlights include:

- Partnerships with TV and radio stations leveraged advertising costs and built program credibility. For example, weatherman Steve Pool announced a weekly watering index, water conservation tips and his online watering forecast.

- Media events brought customer attention to the program at key points in time, such as the program launch in August of 2000 with Mayor Chuck Mosher of Bellevue and Mayor Paul Schell of Seattle; temporary conditions of scarce water supply; and major product developments such as WaterSense toilets.
- In many cases messaging costs were shared and leveraged by using landscape, appliance retailer, vendor, and agency partners.
- Regional radio and bus ad campaigns initiated by the Water Conservation Coalition of Puget Sound, and its successor the Partnership for Water Conservation.
- Staffing an educational booth at major regional events such as the Flower & Garden Show, Home Show, and festivals such as Salmon Days and the Spring Garden Fair.

The message that water conservation is important for environmental stream flows for salmon has been stated consistently to the public since 2000. The link between individual actions that conserve water and salmon recovery was communicated using written messages in many publications, salmon images, logos, web links, and youth mascots.

WATER EFFICIENT IRRIGATION - TEN YEAR PERSPECTIVE

Over the past ten years, the Water Efficient Irrigation Program has evolved to provide customers and contractors more choices for improving the efficiency of irrigation systems. In the early years, the program served only commercial and multifamily customers and offered irrigation audits and custom rebates based on a site evaluation and the cost of the project. Customers could qualify for up to 50 percent of the project cost but participation was low since each project required a somewhat lengthy process. In 2006, a collection of standard rebates was developed in an effort to increase the number of participants. Designed as a market transformation program, incentives for commercial/multifamily, residential and new development were tailored for each sector. By 2010, customer and contractor feedback provided information that was used to expand the types of rebates available to customers. In 2011, instead of limiting technology choices and basing rebate amounts on customer types, the new standard rebates provide contractors with the flexibility to choose the best water-saving measures, based on the needs of the customer and their landscape. Customers can now qualify for rebates for many more irrigation components, however the amount the customer receives is now based on the size of the irrigated landscape and/or the savings potential of the project.

Since 2003, SWP has offered either free or reduced-cost irrigation water-efficiency trainings once or twice a year. Hundreds of contractors and their

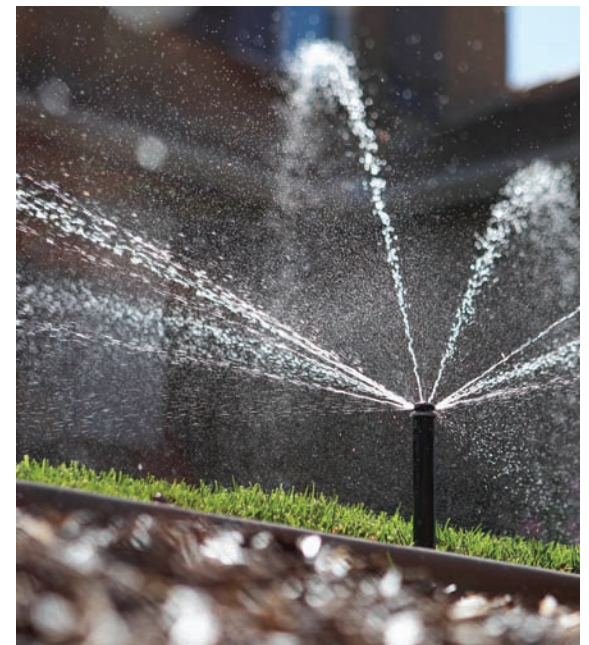
crews, plus field staff from public and private institutions have participated in these trainings that focus on strategies for saving water through maintenance and repair, design and scheduling in both English and Spanish.

SWP staff, over the past decade, have helped lead the Smart Water Application Technology (SWAT) initiative, a national partnership between the irrigation industry and water providers, supported by the Irrigation Association. Through this partnership, the first nationally accepted third-party testing protocols were developed. Smart controllers have been tested using this protocol, and rain sensors, soil moisture sensors, pressure regulating heads, and irrigation nozzles are soon to be tested. The SWAT protocols became the platform that the EPA's WaterSense labeling program is using to begin its irrigation technology labeling specifications.

The SWP established irrigation scheduling tools in collaboration with the non-profit Irrigation Water Management Society. Customers use these tools to create irrigation schedules and to adjust those schedules to reflect the changing water needs of plants. The iwms.org website collects weather data from five area evapotranspiration (ET) weather stations to produce scheduling calculators, watering index percentages and general irrigation information.



Example of a wasteful irrigation system.



Efficient sprinkler heads provide water more slowly, rotate to provide water more evenly, and operate without overspray.

HOW WAS THE GOAL ACHIEVED?

The Regional 1% Water Conservation Program (1% Program) emphasized long-term water use efficiency without customer sacrifice. Conservation measures promoted by the 1% Program eliminated unnecessary, wasteful use of water while customers and the community continue to enjoy their accustomed use of high-quality drinking water. Achieving the goals of the 1% Program required significant water conservation savings across all customer sectors and end uses:

- **Residential indoor water use.** Clothes washer rebates moved the market. Efficient machines moved from relative obscurity in 2000 to a dominant market share in the region by 2010. High-efficiency WaterSense-labeled toilets that flush at 1.28 gallons per flush are now widely available and popular with customers.
- **Commercial domestic and process water use.** Industry relationships and efficient technologies both matured over the decade. The program reached business customers through partnerships with energy utilities and trade groups, equipment vendors, and targeted recruitment of businesses. The performance and water-efficiency of commercial restroom fixtures greatly improved, and measures that were new in 2000 have matured and become more commonplace, delivering consistent savings.
- **Residential landscape water use.** Promotional campaigns and collaboration with

plant nurseries, garden centers and garden writers helped customers to see landscapes in a more sustainable way, as ecosystems. Customers know the concepts of "right plant, right place," smart watering and other water-saving maintenance practices.

- **Commercial landscape water use.** Through long-term commitment and consistent messaging, the SWP played a major role in changing customer and landscape industry attitudes. The Water Efficient Irrigation Program expanded the array of choices customers and contractors have for improving the efficiency of irrigation systems, and contributed to the development of third-party testing protocols for irrigation equipment. Hundreds of contractors and their crews have participated in SWP irrigation water-efficiency trainings in both English and Spanish. The SWP established irrigation scheduling tools in collaboration with the non-profit Irrigation Water Management Society to enable customers to create irrigation schedules that reflect the changing water needs of plants.
- **Youth education.** The SWP reached thousands of students and dozens of teachers through a comprehensive approach that included teacher workshops, classroom presentations and materials, curriculum development, and watershed tours. When access to classrooms became limited, the SWP developed engaging educational activities on the regional website. More than 40,000 people played the Water Busters game in five years.

FOUNDATION OF RESEARCH

SPU's Conservation Potential Assessment (CPA) provided an analytical framework for selecting conservation measures that produce reliable, long-term water savings at good value to all ratepayers relative to more traditional supply development options. Measures that would result in a loss of service or satisfaction for the customer were eliminated from consideration. In addition to periodic program impact evaluations, the SWP systematically conducted quantitative and qualitative market research with residential customers to assess program acceptance and success.



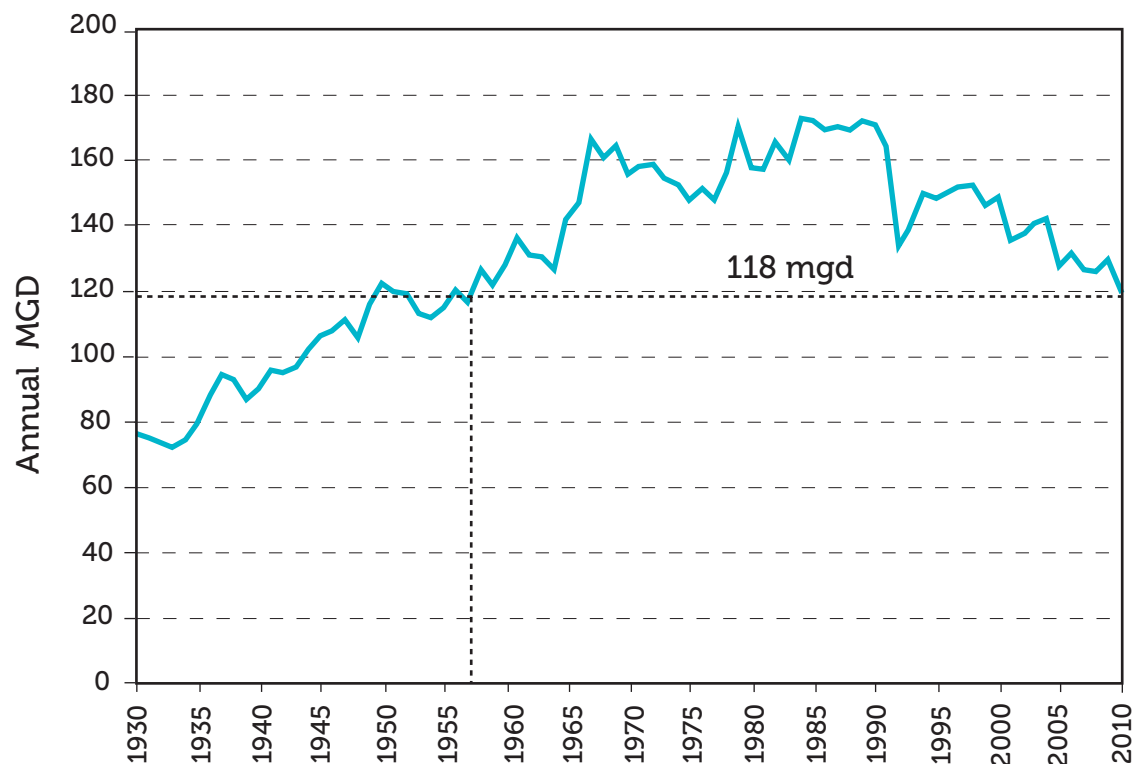
1% Program Performance

1% PROGRAM AND REGIONAL WATER CONSUMPTION IN REVIEW

The ten years from 2000 to 2010 saw the Saving Water Partnership (SWP) regional water service area's population grow by nine percent. So one might expect that water use would have grown, too. In fact, regional water use has gone down. As shown in Chart 1, this region is using the same amount of water as in the late 1950's when the service area population was only half what it is now. That's a tremendous accomplishment by everyone who lives and works here. Chart 2 shows the four main factors that have contributed to a 20 percent reduction in regional water use since 2000:

- Conservation programs that have saved 9.6 mgd from 2000 to 2010;
- Improving the way the water system is operated, particularly the in-town reservoirs;
- Setting water rates that encourage the wise use of water;
- Adopting building codes and appliance standards that make efficient plumbing fixtures and appliances the norm.

Chart 1: Total Seattle Regional Water System Annual Demand in Millions of Gallons per Day: 1930-2010¹



¹ In the years 1999 through 2003, the SWP service area included utilities in the Cascade Water Alliance. Due to difficulties in separating Cascade data from SWP, Chart 1, Chart 3 and Chart 4 include the Cascade service area.

Table 7: Irrigation Rebates

Irrigation Rebates	Number of Projects Life of Program 2000-2010	2010 Number of Projects	2010 Savings (gallons/day)
Single-Family Homes	1,015	199	7,786
Single-Family Non-Rebate ¹	NA	NA	2,498
Commercial (Including Multifamily)	375	47	56,236
Commercial Non-Rebate ¹	NA	NA	4,812
Total Savings			71,332

¹ Non-rebate savings reflect the influence of SWP educational and promotional outreach efforts that encouraged customers to purchase and install water-saving equipment. SWP rebates are used as a tool to encourage purchase, but some customers, for a variety of reasons, make purchases without applying for rebates. These non-rebate savings are estimated as a small percentage of customers who applied for rebates.

2010 EFFICIENT IRRIGATION PROGRAM REBATES AND IRRIGATION CONTRACTOR TRAINING

In 2010, participation in irrigation rebates grew compared to 2009, due mainly to a new program offered in partnership with the Cascade Water Alliance (CWA). The new program offered residential and commercial customers a free rain sensor and \$50 off the cost of installation. It also paid an incentive to the irrigation contractor. Apart from the new program, major irrigation retrofit projects were completed by the City of Mercer Island Parks Department and by multifamily customers in Soos Creek Water and Sewer District and Woodinville Water District.

Encouraging irrigation contractors to promote the SWP rebates and increasing contractors' technical expertise are key strategies of the Water Efficient Irrigation Program. The SWP offered two series of trainings for irrigation professionals in collaboration with the Washington Irrigation Contractors Association (WICA), CWA, and the Washington Association of Landscape Professionals (WALP). Several classes with a water-conservation focus were offered at no cost, including well-attended sessions on drip irrigation, sprinkler scheduling, and two Spanish-language classes.



Contractor checking an irrigation system.



This ad campaign encouraged people to think about how they water their landscapes, and why they might want to change the way they do it.

RESIDENTIAL LANDSCAPE - TEN YEAR PERSPECTIVE

The SWP successfully undertook a big challenge: moving customers from traditionally maintaining their landscapes, which were primarily lawns surrounded by shrubs and flower beds, to seeing landscapes in a more sustainable way, as ecosystems. The SWP focused initially on behavior change relating to lawn care, where frequently watered and fertilized lawns were the norm, and moved toward the more holistic approach of feeding the soil and soil life, using the concepts of “right plant, right place,” and smart watering and other maintenance practices. Through long-term commitment and consistent messaging, the SWP played a major role in changing customer and landscape industry attitudes, behaviors, and landscaping practices in the past ten years. Customer survey results in the areas of lawn watering and customer attitudes align with SWP campaigns.

Highlights include:

- Water utility relationships with nurseries and the landscaping industry have become more collaborative.
- The SWP has become a credible resource for the public and professionals. Publication of “The Naturals” guides plus special topic fact sheets such as “The Plant List”, and “Soaker Hoses” established the SWP as an important source of information. Respected garden columnists promoted SWP messages, adding to the

credibility of SWP messages. The Savvy Gardener e-newsletter and Garden Hotline reinforced SWP credibility by providing current information and enabling customers to ask questions.

- Multi-year partnerships with the following groups gave SWP messages a broad reach over an extended period of time:
 - Nurseries - Nurseries have enhanced the SWP’s credibility and have given the SWP a venue to distribute brochures and convey water-conserving practices such as “right plant, right place,” using compost, using soaker hoses, and “fall is for planting”;
 - Garden writers – Weekly columns and Pacific NW Magazine feature articles;
 - Public agencies – King County, Local Hazardous Waste Management Program, Cascade Water Alliance;
 - Landscape industry - Washington Association of Landscape Professionals (WALP), Washington State Nursery & Landscape Association (WSNLA), and the Washington Irrigation Contractors Association (WICA) led to irrigation contractors marketing SWP rebates.
- Market transformation. The SWP educated customers and motivated them to change practices, ultimately influencing what businesses

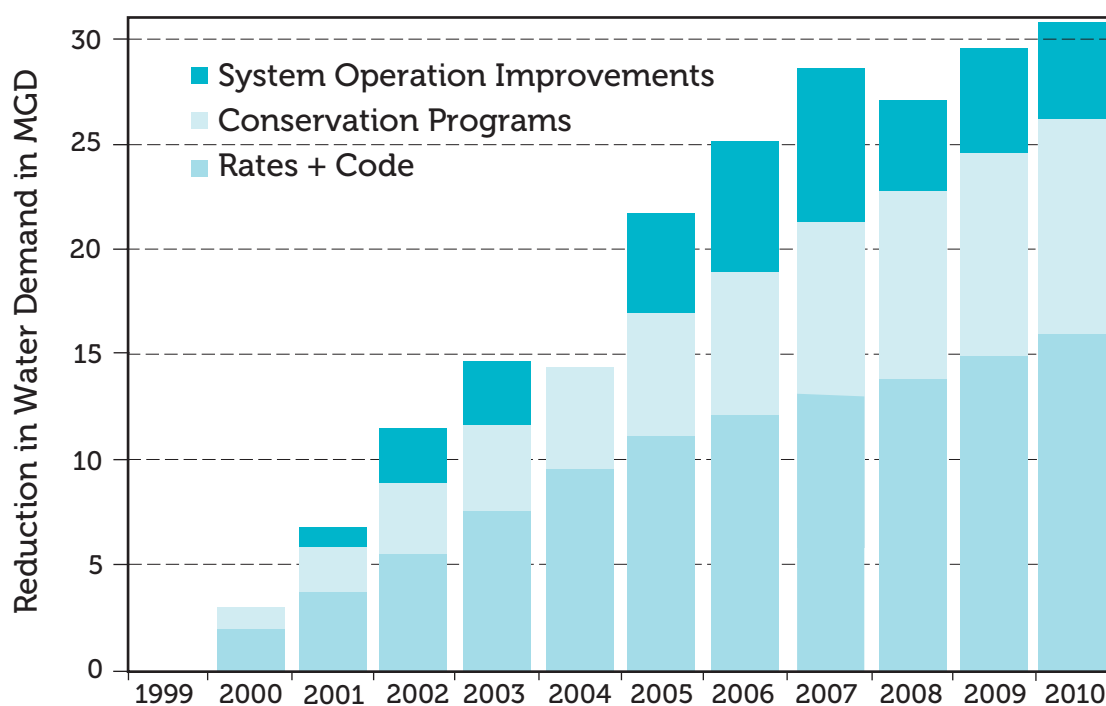
sell. Before the SWP campaigns in 2001 and 2002, only one or two nurseries sold soaker hoses. Now all retailers do, and quite a few promote the concept of either soaker or drip irrigation. Discounts on soaker hoses and compost are no longer needed. Northwest Natural Yard Days also expanded the market for many other water-saving products over many years.

- The SWP developed advertising campaigns for print, radio, TV, bus, and the web about:
 - Building soil with compost;
 - Right Plant, Right Place, A Better Way to Beautiful, and Fall is for Planting;
 - Efficient watering via soaker hoses and improved automatic irrigation systems;
 - Northwest Natural Yard Days.



Ten years of 1% Program educational efforts made using compost the norm – discounts are no longer needed.

Chart 2: Cumulative Water Savings¹ Since 1999

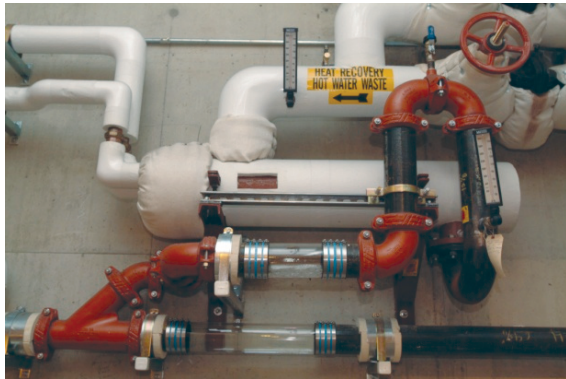


¹ The measure of cumulative savings over time merits more confidence than the estimates of annual savings in any one year. The component categories are shown as annual average savings. Estimated savings from these four components are further explained on page 13.

Chart 1 and Charts 3 and 4 show how water consumption patterns have changed over time. For most of the region’s history, water consumption has increased along with its population. However, that link was broken around 1990 when annual consumption reached its highest level of about 170 million gallons per day (mgd). Since then, despite continued population growth, water consumption has steadily declined. Many factors have contributed to this decline, including conservation programs, increases in water and sewer rates, the state building code and appliance standards, and improved system operations. Annual consumption in 2010 was 118 mgd. The last time the Seattle regional system used that little water was in 1957.

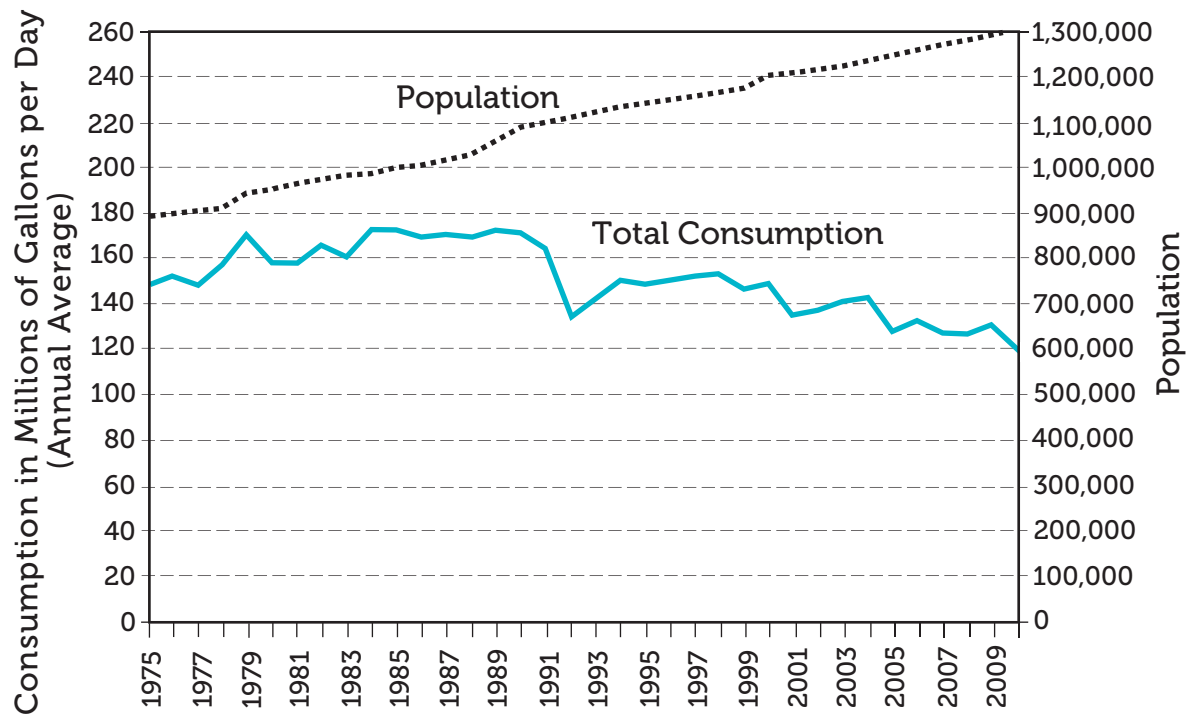
Chart 2 shows cumulative water savings. Long-term customer savings, due to conservation programs, higher rates, and the building code (the bottom and second bars) have grown steadily. Customer savings are derived from specific conservation measures and behavior actions. System savings (the third bar) are reductions in non-revenue water and come from a variety of sources such as reducing water used for in-city reservoir cleaning and overflowing.

Chart 3 provides a perspective of declining regional water consumption in the context of a continuing rise in population served. Water consumption has declined by 52 mgd or 30 percent since 1990, while population has increased 20 percent during those same years.



Water reclamation system at Fred Hutchinson Cancer Research Center.

**Chart 3: Growth in Population and Water Consumption
Seattle Regional Water System: 1975-2010¹**



¹ In the years 1999 through 2003, the SWP service area included utilities in the Cascade Water Alliance. Due to difficulties in separating Cascade data from SWP, Chart 1, Chart 3 and Chart 4 include the Cascade service area for the years 1975 through 2010. Also note that some wholesale customers have other sources of supply in addition to what they purchase from SPU. Population has therefore been adjusted downwards to estimate the number of residents actually using SPU water.



The Naturals Guides.

respondents still plant during spring, very few plant in summer, and an increasing percentage plant in fall.

The Savvy Gardener Newsletter comes out electronically each spring, summer and fall and continues to evolve as a result of customer feedback, gardening trends and conservation needs. Readership is growing slowly but steadily. Due to the increasing interest in growing food, an article on edibles is now included in each issue. These articles are being well received. Subscribership grew from 3,239 to 3,451.



The Savvy Gardener E-Newsletter provides advice from experts, seasonal gardening tips, and articles on current topics such as drip irrigation and growing food.

2010 PROFESSIONAL TRAINING IN NATURAL LANDSCAPING

SPU's county-wide professional training (funded by SPU drainage and solid waste funds, and the Local Hazardous Waste Management Program in King County) also promotes water-efficient landscape design, installation, and maintenance. In 2010, 2,010 professionals participated in 42 training events. These workshops targeted engineers, design professionals, landscape contractors (including non-English-speakers), developers, builders, permitting and inspection staff, and land use planners. Professionals who attend the workshops incorporate the techniques into their designs and pass on information to the homeowners, landscapers and property managers whom they work with. Two thirds of attendees work in the City of Seattle service area, and one third work primarily in other Central Puget Sound locations. Highlights included:

- Delivering landscape-related portions of the new nine-month University of Washington Low Impact Development certificate program.
- A large training for landscape architects that was videotaped for future distance-learning.
- Trainings in Spanish, Vietnamese, and Khmer (Cambodian) for landscape contractors who speak English as their second language.



Tom Quigley from Olympic Nursery shows residents proper pruning techniques at the 2006 Spring Garden Fair sponsored by the SWP, City of Bothell, Northshore Utility District, and Woodinville Water District.

2010 THE GARDEN HOTLINE

The regional Hotline continues to be a cornerstone of SWP education and behavior change efforts, enabling customers to have their individual questions answered by landscape professionals. Total contacts in 2010 were 26,156.



RESIDENTIAL AND COMMERCIAL LANDSCAPE HIGHLIGHTS

Table 6: Landscape Customer Outreach

Outreach Contact Type	Outreach - Life of Program 2000-2010	2010 Outreach Target	2010 Actual Outreach
Naturals Guides, Plant List and Soaker Hose Fact Sheet	590,440	40,000	50,420
Savvy Gardener Subscriptions	3,451	500	300
Savvy Gardener Class Attendance	4,149	400	523
Professional Training Attendance	11,965	1,200	2,010
Lawn & Garden Hotline Questions	134,152	17,000	26,156
Earned Print Media Spots	More than 100	NA	NA



Waterwise plants in Stacie Crooks' Shoreline garden. Ms. Crooks of Crooks Garden Design taught classes in her garden for the Saving Water Partnership.

2010 LANDSCAPE OUTREACH

The residential landscape program continues to focus on raising customer awareness about ways to save water in yards and gardens, and enabling customers to change their water-using behavior. The SWP offered Savvy Gardener classes at three partner nurseries in the spring, offered drip irrigation classes at other locations in the summer, and added a fourth partner nursery in time for a series of Savvy Gardener classes in the fall. The classes drew more than 500 people in total. Interest in the Naturals Guides remains high, with over 50,000 distributed during the year.

SWP also contributed to the Spring Garden Fair, held at the University of Washington Bothell Campus in 2010. The fair is now the largest Eastside gardening event providing information and education on water-efficient and sustainable gardening. Approximately 1,200 people attended this event. Ciscoe Morris broadcasted his Gardening With Ciscoe radio show live and Meeghan Black was hostess extraordinaire for the day. Ten seminars were given by local horticulture experts, and kids' activities and sales of plants, rain barrels and compost bins rounded out the event.

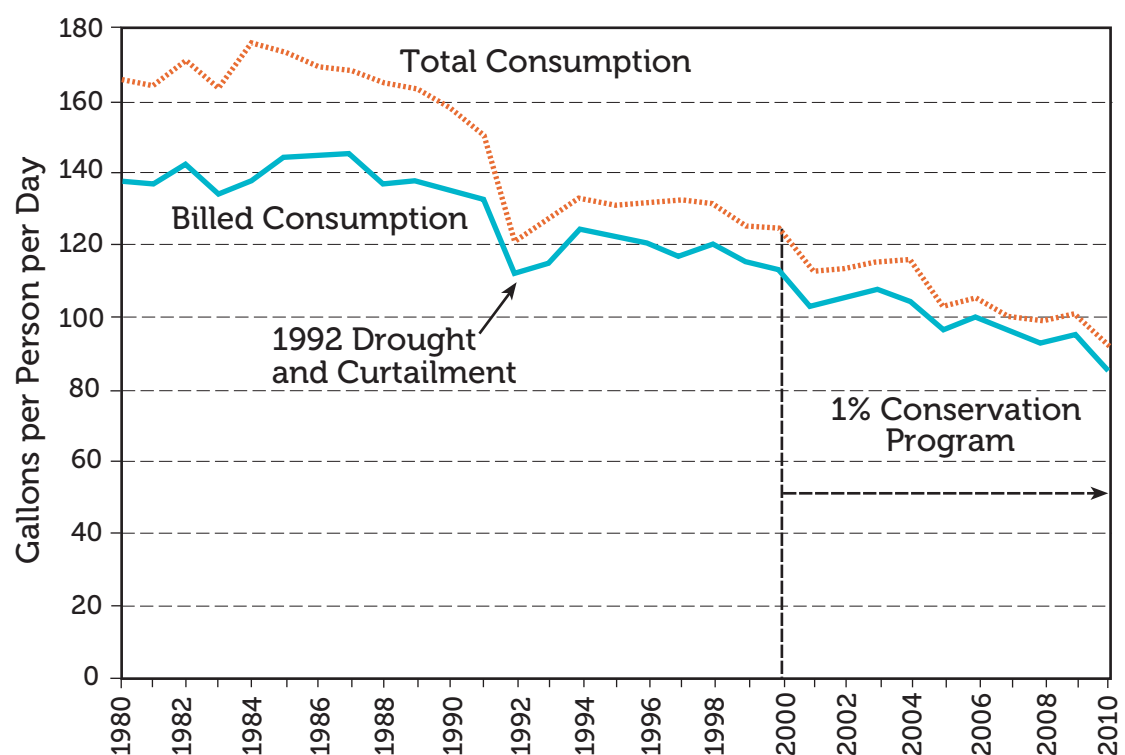
Messages about the benefits of fall planting and "right plant, right place" were promoted in September via radio spots on Star 101.5 and Warm 106.9, Spanish-language station KDDS FM - LaGranD 99.3 and Korean-language station Hankook. To get a sense of who heard the radio ad and what their landscaping behaviors were, an online survey was hosted while the ads were running. 196 people completed the online survey. While a majority of

Chart 4 illustrates the dramatic progress made in per capita demand reduction. On a per person basis, water consumption has shrunk by 42 percent since 1990, from 157 to just 91 gallons per day.



Rosemarie Ives, former Mayor of Redmond, and David Broustis, now with Seattle Parks, inspect a newly installed toilet.

Chart 4: Water Consumption per Person: 1980 - 2010¹
Consumption / Population Served



¹ In the years 1999 through 2003, the SWP service area included utilities in the Cascade Water Alliance. Due to difficulties in separating Cascade data from SWP, Chart 1, Chart 3 and Chart 4 include the Cascade service area.

CATCHING THE CURRENTS AND NAVIGATING SHOALS

The decade from 2000 to 2010 saw significant change in many areas that affected the 1% Program. Two drought years impacted program messages, the economy experienced growth, then a multi-year recession occurred, placing budget constraints on both the SWP and customers. Partnerships between water utilities and energy utilities, and often other agencies and organizations, helped leverage available resources. This made programs less expensive to water ratepayers, but also added complexity to program delivery and decision making.

Information, circumstances, technology, and customer preferences all changed during the course of the program. Regarding forecasting water demand, the need for a new water supply source was extended from the 2020's to beyond 2060. The departure of Cascade Water Alliance (CWA) utilities from the program made marketing more of a challenge, as the borders of the SWP service area became more of a patchwork. The program adapted to all these changes, and still met the essence of the blueprint set out in the *Ten Year Water Conservation Program Plan* (Seattle Public Utilities, 2002).

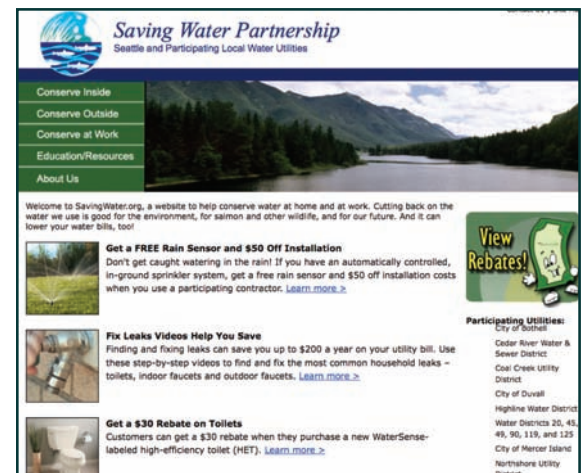
SAVINGS RESULTS BY SECTOR

Savings results for each customer sector came in close to original estimates. In 2000, SPU estimated that the largest savings sector would be residential indoor, accounting for slightly less than half the total 1% Program savings. The second largest savings sector was estimated to be commercial process and domestic, and the third largest was residential landscape. The results in 2010, after ten years of program activity, are very close to what was expected. More than half the savings from the 1% Program came from residential indoor measures (clothes washers, showerheads, toilets and faucet aerators). The second largest savings came from the commercial sector, from water used in the process of making products, and from restroom fixtures. The residential landscape sector contributed the third largest savings attributable to the 1% Program.

The original estimates of savings by customer sector made in 2000 can't be easily compared with 2010 sector results, for a couple of reasons: the original service area changed significantly following the withdrawal of Cascade utilities from the 1% Program, and in 2005 the metric of savings changed from peak water savings to annual average water savings.



September intermittent rains prompted this successful mailing to irrigation customers.



The Savingwater.org home page invites customers to save water.

- A cooling tower workshop was held in December, hosted by the Experience Music Project facility. The Cool-Tunes manual was unveiled, discounted hand-held conductivity meters were sold, and over 40 attendees took part in a half-day program covering a range of cooling tower operation strategies and treatment systems.

2010 COMMERCIAL TOILETS FOR ETHNIC BUSINESSES

The Greening Ethnic Businesses program, a targeted outreach effort to ethnically owned businesses throughout the SWP area, promoted free toilet upgrades and efficient kitchen equipment to Mexican restaurants. Data from the past few years showed that participation by these businesses was less than expected. With translation help, an effort was begun in late 2009 to target Mexican Restaurants in the SWP. 164 radio spots aired on two local Spanish radio stations: KDDS FM – LaGranD 99.3 and KKMO FM – El Rey over four weeks in May. A postcard in Spanish was mailed to 160 Mexican restaurants.

COMMERCIAL CONSERVATION - TEN YEAR PERSPECTIVE

The past decade has seen great improvement in the performance and water-efficiency of a cornerstone water conservation measure - commercial restroom fixtures. Today, there are many high-efficiency products that perform well. The baseline for efficiency has moved from 1.6 gallons per flush (gpf) fixtures to WaterSense 1 gpf toilets and 1 pint urinals. The road to this destination was not always smooth. In keeping with the philosophy of not compromising customer satisfaction, the SWP ended promotion of waterless urinals after persistent problems with the technology. On the other hand, measures that were just emerging in 2000, such as ozone laundry water systems and medical vacuum pumps, have matured and are delivering consistent savings.

Three primary strategies made SWP programs accessible to commercial customers:

- Promotion through service and equipment vendors;
- Partnerships with energy utilities, agencies, and trade groups such as restaurant and hotel associations, chambers of commerce, the Building Operators and Managers Association, and the Medical Industry Roundtable;
- Targeted recruitment of business categories: large customers, hospitality, medical and schools and institutions.

In addition, presentations and workshops for trade groups, facilities managers, equipment vendors and

commercial customers raised awareness of water conservation opportunities and incentives.

Highlights include:

- The Efficient Pre-Rinse Sprayhead Program partnership with PSE was highly effective in 2004 and 2005. Over 3,500 heads were installed in SWP territory, producing significant water and energy (hot water) savings.
- The SWP, SCL and the Greater Seattle Chamber of Commerce co-sponsored a business recognition program, the Businesses for an Environmentally Sustainable Tomorrow (BEST) awards, from 2001-2004. Attendance was consistently strong, with notable keynote speakers and opportunities to network with other attendees.
- Staff conducted many audits and technical assistance visits with large customers.
- Free toilets were offered to commercial customers following a successful free toilet program for multifamily properties.
- In 2006, incentives were developed for new construction projects.
- A case study of one of the SWP's largest customers, the University of Washington, showed that their cumulative efforts since 2000 have reduced their water use by 30-40 percent, saving them nearly \$20 million.

COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL HIGHLIGHTS (OTHER THAN LANDSCAPE)

Table 5: Commercial Hardware Savings

Measure	Projects Life of Program 2000 - 2010	2010 Projects	2010 Savings (gallons per day)
Restroom Measures	293	34	42,873
Greening Ethnic Businesses – Restroom 2006-2010	101	15	1,400
Process Water	52	4	25,595
Kitchen Measures 2006-2010	46	32	8,647
Refrigeration / Ice / Cooling	126	8	12,408
Laundry Systems	34	7	4,878
Medical/Dental/Research Equipment	33	3	10,303
Pre-Rinse Sprayheads – not included in project total	3,569	-	-
Coin-Operated Washers – not included in project total	415	40	2,880
Other	12	1	717
New Construction Incentives 2007-2010	26	7	9,938
Total from Incentive Projects	723	111	119,639
Non-Incentive Savings ¹			35,063
TOTAL		111	154,702

¹ Non-incentive savings reflect the influence of SWP educational and promotional outreach efforts that encouraged customers to purchase and install water-saving equipment. SWP incentives are used as a tool to encourage purchase, but some customers, for a variety of reasons, make purchases without applying for incentives or rebates. These non-incentive savings are estimated based on technical assistance provided to customers.

2010 BRINGS LARGE NUMBER OF COMMERCIAL PROJECTS

2010 saw strong demand for the commercial program, with interest from small, medium and large customers. The Commercial Kitchen Group partnership, with close to ten participating energy and water utilities, is working well. Commercial kitchen rebates increased significantly – from a handful in prior years to nearly a third of the 111 projects funded in 2010. One notable project, a new student housing facility at Bastyr University in Northshore Utility District, received LEED Platinum certification – the highest level of green building certification. Several video case studies of commercial projects were developed and will be added to the regional website, www.savingwater.org.

2010 COMMERCIAL OUTREACH

Three successful seminars took place:

- The “High-Efficiency Restroom Fixtures” workshop in July featured a panel of project managers who had recently completed major retrofit projects, and a vendor fair.
- The SWP, the Washington State Society of Hospital Engineers (WSSHE) and the Partnership for Water Conservation co-sponsored a half-day workshop in October targeted to health care and biotech facilities. Hosted by the Fred Hutchinson Cancer Research Center, “A Water-Efficient Workplace” was well attended by over 70 facility managers, hospital engineers, lab managers, and others. The event featured a panel and tours of the many projects completed by Fred Hutchinson over the past eight years.

Table 1: Regional 1% Program Cumulative Annual Average Savings

	2000-01 “Ramp-Up” 2-Year Total	2002	2003	2004	2005	2006	2007	2008	2009	2010
Tally of 1% Savings Cumulative in MGD	2.15	3.08	3.78	4.48	5.42	6.35	7.63	8.38	8.99 ¹	9.56 ¹
Target 1% Savings Cumulative in MGD	1.6	2.5	3.6	4.5	5.4	6.5	7.7	8.8	9.9	11.0 ²

¹ Savings from hardware programs, which comprise 74 percent of the total 2010 savings, are tallied by adding the gallons per day saved by each efficient device installed (such as washing machines, showerheads, aerators, toilets, irrigation equipment, and commercial process equipment). The behavioral component is an estimate.

² The original 1% Program target set in 1999 was 18 mgd peak season cumulative through year 2010, adjusted to 14.5 mgd peak savings for departure of Cascade Water Alliance utilities from the regional conservation program at the end of 2003. In 2005, to be consistent with reporting of code, price, and non-revenue water savings, an annual average savings target for the 1% Program was adopted. The annual average savings target was 11.0 mgd for the life of the program, equivalent to the original 14.5 mgd peak season target.

Multifamily Toilet Program
What Property Owners and Managers are Saying

The Nautica Condominiums
Seattle
54 Units
Reduced its water use by 43%
“Our maintenance was saving me thousands every year, with the rising cost of utilities. We’ve saved over \$20,000 per year, and everybody’s happy with the new toilets.”
Scott Binkley, Binkley Products
Replaced 117 toilets

Heatherstone Park Apartments
Shoreline
28 Units
Reduced its water use by 23%
“We embraced the Saving Water Partnership Program and saw immediate results both lowering our utility bills and increasing our resident satisfaction. Most exciting is that our water/ sewer bill is 25% lower which is an instant take-away for the property. We recovered our water cost in under a year!”
Scott Swanson, Principal of Property Real Estate Advisors, Inc.
Replaced 30 toilets

Jan Tun Apartments
Seattle
14 Units
Reduced its water use by 23%
“The program is ridiculously easy and saves bills. It also saves our maintenance.”
Chris Buckel, Property Manager
Replaced 34 toilets

FREE Toilets or \$100 Rebate
Typical project savings range from 15-35%
Saving Water Partnership
Seattle and Participating Local Water Utilities
For more information call (206)615-1282 or visit www.savingwater.org

This case study flier attracted participants to the Multifamily Program.



Washing Town Laundry replaced 11 old water and energy-guzzling coin-op machines with new water-efficient Huebsch machines.

1% PROGRAM TARGET AND OBJECTIVES

The Regional 1% Water Conservation Program (1% Program) is sponsored by the Saving Water Partnership (SWP). This Partnership includes the City of Seattle retail service area (population 664,000) and a group of 17 utilities (population 436,000) purchasing water wholesale from the City of Seattle. Seattle Public Utilities administers the 1% Program in collaboration with participating wholesale utility customers, under terms of long-term water supply contracts.

Five Cascade Water Alliance utilities that were part of the 1% Program from 2000-2003 left the 1% Program in 2004 and are pursuing conservation on their own. Accordingly, the 1% Program savings targets were reduced proportionately for the remaining population served. Several other smaller utilities also left the partnership early in the program.

The 1% Program began in 2000. The first two years were ramp-up years for program measures, staffing, and funding. A *Ten Year Water Conservation Program Plan* (Seattle Public Utilities, 2002) was completed in 2002 detailing program budgets, savings targets and implementation strategies through 2010. The 2007 Seattle Water System Plan established a six-year water conservation goal in compliance with the new State of Washington Water

Use Efficiency Rule. Similar goals have been adopted by all SWP partners. The goal includes the last four years of the 1% Program and the first two years of the SWP's successor program.

The performance goal of the 1% Program, as stated in 1999 when the Program was adopted, was to keep water demand at the end of 2010 the same level or lower than it was in 2000, despite anticipated growth in population and economic activity. At that time achievement of the goal translated into a reduction in peak season per capita consumption of one percent per year from 2000 to 2010. Hence the origin of the 1% Program name.

To achieve the performance goal based on the forecasted growth rates at the time of Program initiation, a specific prescriptive water savings target was established and used to track program achievements:

Achieve annual programmatic conservation savings targets established in the *Ten Year Conservation Program Plan*, at a pace needed to cumulatively reach 11 mgd by the end of 2010.

Subsequent to the above 1% Program performance goal and prescriptive target, the regional partners have adopted six-year Water Use Efficiency goals to comply with the State Water Use Efficiency Rule.

In 1999, the 1% Program performance goal, in combination with the other elements of water savings (water rates, building codes and system savings) was selected to achieve a number of policy objectives, including:

- **Keeping up with demand.** If each person and business in the region became ten percent more water-efficient over the next ten years, the region will save approximately 11.0 million gallons of drinking water per day in annual average gallons (14.5 mgd in the peak season – originally 18 mgd in the peak season when Cascade water utilities were part of the program).
- **Resource stewardship and endangered species protection.** Leveling out the impact of growth on the region's water supplies means preserving water for salmon, other aquatic life, recreation, water quality, and other important purposes. The federal Endangered Species Act (ESA) listing of the Chinook salmon heightened awareness of the importance of resource stewardship.
- **Cost-effective extension of existing supplies.** The measures identified in the 1% Program are less costly on a per unit basis than developing most traditional new sources of water supply. This benefits customers by keeping rates lower than they would be if a new source of supply were added to the system to meet demand in lieu of reducing it through conservation.

INDOOR WATER USE MESSAGING - TEN YEAR PERSPECTIVE

Over the decade, the SWP has promoted key messages – fix leaks; replace old toilets; wash full loads; take shorter showers - to help customers save water and manage their utility bills. Educational materials took the form of articles, fact sheets, TV ads, joint SWP and retailer radio and print advertising, press releases, bus ads, public festivals and events, the regional website and phone hotline information requests. Over the ten-year period, partnerships helped leverage increased participation and helped share the cost of the program, making each gallon saved less expensive for the SWP.

Highlights include:

- Pilots in Wholesale Customer areas. In 2003, a flapper replacement project took place in partnership with Northshore Utility District. In 2006, a community-based strategy was undertaken with Soos Creek Water & Sewer District and Cedar River Water & Sewer District to promote washing full loads, including staffing an educational table at a local shopping center and inviting people to fill a front-loading washer and enter a drawing for a free machine.

- Interacting at community festivals. In 2007 the SWP booth had a toilet and a clothes washer so customers could fix leaks and measure a full load on-site.
- Media advertising. A regional TV ad campaign took place in October of 2007 to invite people into retail stores to “test drive” a WaterSense toilet. The campaign continued with three regional flush-off events in December: one targeting plumbers, one targeting media, and one targeting multifamily property owners and managers.
- 3 Ways to Save. In 2008 a month-long summer campaign in partnership with Seattle City Light, Home Depot and Bartell Drugs promoted 3 Ways to Save: 1) check for leaks 2) wash full loads 3) take shorter showers. 3,000 showerheads were distributed.
- Educational Messaging. The SWP supported campaigns by the Water Conservation Coalition of Puget Sound and its successor, the Partnership for Water Conservation.

2010 INDOOR WATER USE MESSAGING

In 2010, the SWP put the building blocks in place for a regional outreach campaign focusing on finding and fixing common household leaks. The SWP promoted the EPA's “Fix a Leak Week” by providing signs and leak detection dye strips for utility customer service counters. In addition, three instructional videos – covering leaks in toilets, indoor faucets, and outdoor faucets - were developed and posted on the regional website, www.savingwater.org. Work started on a fourth video that will cover detection of underground leaks.



Fixing outdoor leaks is the topic of one of four “Fix a Leak” videos posted on www.savingwater.org.

2010 MULTIFAMILY REGIONAL SHOWERHEAD & AERATOR DISTRIBUTION

This program to distribute high-efficiency showerheads to multifamily customers throughout the region began as a pilot in 2008 and was extended into 2010. The program depended on a three-way partnership to make it cost-effective. Energy utility partners promoted the program, and the SWP supplied the showerheads for the program. The program delivered 841 showerheads and 1,276 aerators to six buildings in 2010, saving 3,800 gallons of water per day.



Molly Brumley of Colehour+Cohen and Arece Hampton of SPU compare the performance and water use of a 3.5 gallon toilet with a new 1.28 gallon WaterSense model.

SINGLE FAMILY TOILETS - TEN YEAR PERSPECTIVE

Today, unlike a decade ago, customers know to look for performance when shopping for a bathroom fixture. The SWP, and more recently the EPA WaterSense program, have promoted the idea of product quality, based on performance testing, in the arena of plumbing fixtures. In 2002 the SWP, in collaboration with East Bay Municipal Utility District in Oakland, CA, sponsored toilet performance testing conducted by the National Association of Homebuilders' Research Center. The final report rated the flushing performance of 49 locally available toilet models. This report became the basis of the SWP FlushStar® label, which SWP promoted in 2005 and used to qualify fixtures for the Multifamily Toilet Rebate Program. With the introduction of the EPA WaterSense label in 2008, the FlushStar® list was phased out.

Highlights of the program include:

- Two Toilet Round-Up events held in 2001 offered \$40 rebates while collecting and recycling more than 4,800 old toilets. The events generated positive media attention to encourage residents to upgrade older fixtures.
- In-store promotion of FlushStar® toilets, and later WaterSense fixtures, from 2005-2010.
- SWP partnered with seven participating WaterSense retailers to offer a \$30 Instant Discount for WaterSense toilets during September and October of 2009. Customers received coupons via utility newsletters and bill inserts.

2010 SINGLE FAMILY TOILETS

The single family toilet program built on the pilot undertaken in 2009 and became an ongoing program, offering \$30 mail-in rebates on WaterSense-labeled toilets for residences. The program exceeded its goal of 400 rebates,

processing 452 applications from May through the end of the year. Rebate forms were available in four languages on the regional website, www.savingwater.org, and fixture manufacturers posted a link to the program on their websites.

- **Customer service.** Conservation provides a direct benefit to participating customers by giving them more control over their individual water bills. Participation in conservation measures has other benefits including lower wastewater, electric, and gas utility bills, convenience, labor savings, and in some cases like clothes washing, improved performance.
- **Reliability.** Developing traditional new water supply sources has lengthy regulatory approval processes. Conservation programs can be implemented quickly by utilities without permits, approvals, or revisions to comprehensive plans. Furthermore, because much of the programmatic savings are technology based, savings can be obtained reliably.

CONSERVATION MEASURE SELECTION AND MODIFICATION

Since 1998, SPU has conducted conservation potential assessments periodically to analyze the cost, volume, and reliability of conservation savings available within Seattle's wholesale and direct service areas. These reports are available at www.seattle.gov/util/about_spu/water_system/reports. The analysis helps direct customer demand reduction programs towards the most cost-effective conservation opportunities.

ACCOUNTING FOR CONSERVATION SAVINGS

In order to track progress toward the target objectives, annual water savings (mgd) as reported in this document are estimated based on programmatic conservation activity. These estimates attribute savings based on installation of various 'hardware' measures – toilets, showerheads, washing machines, etc. This annual savings total is then augmented by adding an amount of water estimated to be saved by changes in customers' behavior as influenced by program education and informational campaigns. Together, savings from hardware measures and behavioral changes equal the annual mgd savings amount reported – this tally is known as the "bottom-up" sum of individual measures approach to measuring savings as it relies on an annual summation of equipment installations.

An alternative method of calculating cumulative conservation savings over time is used as a double-check to increase confidence in the results of the "bottom-up" approach. This involves using the SPU water demand forecast model to "backcast" what demand would have been between 2000 and 2010 without the 1% Conservation Program. Referred to as the "top-down" approach, 2000-2010 forecasted demand absent conservation is compared to actual water use over the same period with the difference representing cumulative programmatic conservation savings. At the end of 2010, both approaches produced similar estimates of program savings.

2010 MEASURES AND STRATEGIES

Table 2 on page 11 provides details on the types of conservation measures and the incentive program and marketing strategies used in 2010.

CONSERVATION AFTER THE 1% PROGRAM

The Seattle Water Supply System Operating Board selected a regional conservation target of 15 mgd of cumulative average annual savings from programmatic and price-induced conservation over the period 2011 through 2030. As part of the process to set a six-year conservation goal (2007-2012) for compliance with the Washington Department of Health Water Use Efficiency Rule, SPU conducted a risk assessment in 2005 to update policy objectives for conservation. In consultation with wholesale customers and program partners, consensus was that conservation provides:

- Low-cost insurance for meeting potential future challenges from climate change;
- Efficient management of water resources;
- Assistance to customers with managing their bills; and
- Valuable stewardship of natural resources.

As this report goes to press, the regional conservation partners have begun the discussion to set the Water Use Efficiency Goal for 2013-2018.

Table 2: 2010 Conservation Measures and Strategies

Types of Measures	Types of Strategies	
<ul style="list-style-type: none"> ■ Replace washing machines ■ Replace toilets, showerheads & faucets (multifamily) ■ Fix leaks (toilets) ■ Change behaviors (toilet flushes, faucet use, shower time, full loads) 	<p>RESIDENTIAL INDOOR</p> <ul style="list-style-type: none"> ■ WashWise rebates ■ Multifamily and single family toilet rebates ■ Showerhead distribution to multifamily properties ■ Behavior messaging ■ Collaboration with energy utilities ■ Program recruiting through retailers, ads in property manager trade publications, website ■ Promotion of WaterSense toilet performance 	
<ul style="list-style-type: none"> ■ Irrigation system performance ■ Landscape watering behaviors ■ Practices that affect watering (e.g. mulch, soil prep and plant selection) 	<p>RESIDENTIAL LANDSCAPE</p> <ul style="list-style-type: none"> ■ Irrigation system efficiency rebates ■ Right Plant, Right Place promotion via retailer partnerships (nurseries, home and garden centers) ■ Savvy Gardener e-newsletter and classes ■ The Garden Hotline ■ Natural Lawn & Garden Guides (how-to materials) ■ Training for irrigation professionals ■ Develop irrigation technology performance testing through Irrigation Association Smart Water Application Technologies Initiative ■ Online weather data, watering index, water budgeting and irrigation scheduling tools 	
<ul style="list-style-type: none"> ■ Upgrade toilets and other domestic water use fixtures ■ Upgrade industrial and commercial water-using equipment ■ Improve building cooling performance ■ Upgrade efficiency of specific water consuming medical and lab equipment ■ Outreach to ethnic businesses ■ New construction incentives 	<p>COMMERCIAL PROCESS/DOMESTIC</p> <ul style="list-style-type: none"> ■ Financial incentives (custom projects & standard rebates) ■ Targeted promotion through vendors, trade groups, agencies with focus on Korean businesses ■ Restaurant targeting – Commercial Kitchen Equipment Partnership with multiple energy and water utilities ■ Outreach to business groups through Resource Venture ■ Technical assistance, assessments, workshops ■ End-use metering wherever possible to build cost-effective conservation recommendations 	
<ul style="list-style-type: none"> ■ Upgrade irrigation equipment (controllers, rain sensors, drip) ■ Improve scheduling and maintenance 	<p>COMMERCIAL LANDSCAPE</p> <ul style="list-style-type: none"> ■ Targeted outreach to large commercial customers ■ Site-specific recommendations and technical assistance ■ Financial incentives (custom projects and set rebates) ■ Targeted recruiting and promotion to large commercial customers ■ Market transformation by establishing and building vendor and contractor relationships ■ Online weather data, watering index, water budgeting and irrigation scheduling tools ■ Training for irrigation professionals 	
Types of Measures	Supporting Elements	Types of Strategies
<ul style="list-style-type: none"> ■ Build conservation awareness and residential measures 	<p>YOUTH EDUCATION (Supports savings in other sectors)</p> <ul style="list-style-type: none"> ■ Support of water festivals and events ■ Educator resources online ■ Classroom and take-home materials ■ Web-based interactive activities 	
<ul style="list-style-type: none"> ■ Conservation awareness supporting recruitment of residential and commercial customers 	<p>OVERALL MESSAGING (Supports savings in other sectors)</p> <ul style="list-style-type: none"> ■ Market EPA WaterSense labeled products ■ Promote regional website: www.savingwater.org ■ Collaboration with Puget Sound-based Partnership for Water Conservation (PWC) ■ Festivals, utility open house events 	
<ul style="list-style-type: none"> ■ Evaluate measure savings ■ Evaluate program effectiveness 	<p>PROGRAM EVALUATION (Supports savings in other sectors)</p> <ul style="list-style-type: none"> ■ Conservation Potential Assessment Update ■ Participate in development of local, state, and national standards and codes ■ Coordinate with other water efficiency organizations (AWWA, Alliance for Water Efficiency, PWC, Irrigation Association, etc.) ■ Annual Report 	



Chakorn Phisuthikul was one of several property owners featured in a case study and trade journal article in 2008.

2010 MULTIFAMILY TOILET RETROFITS

In 2010, more than 2,200 toilets in 163 apartment buildings were upgraded to 1.28 gallons per flush from 3.5 gallons per flush or larger models, saving the region nearly 60,000 gallons per day. This was the first full year of funding only EPA WaterSense-labeled models. These toilets are independently tested for performance and are more efficient than the standard 1.6 gallons per flush models. Notable large projects included a 94 unit building in Water District 125, 103 toilets replaced in an apartment complex in Soos Creek Water & Sewer District, and 114 toilets replaced in a condominium in Seattle.

MULTIFAMILY TOILET RETROFITS - TEN YEAR PERSPECTIVE

During the initial years of the program, customer skepticism of “low-flow” toilets was the biggest participation barrier. The program gained credibility as large property management firms participated, and positive experiences were shared by word of mouth. A major component of the success of the program continues to be the quality of the fixtures themselves. The program put significant effort into product testing before selecting particular models to offer for free. The SWP has offered three models over the ten years of the program. The toilets work in all settings - from 1900’s buildings to modern condominiums. The rebates fluctuated between \$60 - \$100 in the first years of the program. The highest participation occurred when SWP offered a free toilet option in addition to a rebate, from 2004 through 2010. Since 2001, more than 32,800 toilets have been replaced in 1,610 buildings in the SWP service territory.

Highlights of the program include:

- Changing the perception of multifamily property owners and managers that low-flow toilets are

inefficient and problematic. SWP used incentives to move customers through two generations of water-efficient toilets: the 1.6 gallons per flush (gpf) toilets that the rebate program began with, and the latest generation of 1.28 gpf WaterSense-labeled toilets introduced in 2009.

- Several focus groups were held with property managers and owners during the first few years of the program. These meetings obtained feedback from customers, and helped the SWP educate those who were skeptical about the new toilets.
- SWP received one of the first EPA WaterSense “Partner of the Year” awards as a result of work to introduce WaterSense toilets to the public.
- The rebate program considered solid waste impacts of changing out old toilets and provided participants with toilet recycling options to reduce the volume of material going to solid waste landfills. Recycled toilets became crushed road bed material or were mixed with crushed stone and old concrete to produce new concrete.

WASHWISE RESOURCE EFFICIENT CLOTHES WASHERS - TEN YEAR PERSPECTIVE

SWP rebates, in combination with energy utility rebates, achieved the original goal of residential clothes washer market transformation. The WashWise label is now easily recognized by shoppers as a sign of superior water and energy savings and performance. High-efficiency clothes washers now have a dominant market share of local washer sales. The retail cost of an efficient machine is now very close to the cost of an inefficient machine - energy and water savings are likely to convince customers to buy an efficient machine without the need of a rebate.

During the years of the 1% Program, the WashWise Program provided nearly 80,000 rebates, saving a million gallons of water per day. Participation averaged 7,270 rebates per year, while incentives ranged from \$50 to \$100.

Highlights include:

- A major marketplace transformation to sales of much more efficient clothes washers during the ten-year period. Rebates played a significant part in transforming the local market, as witnessed by much lower sales of efficient washers in utility service areas that didn't offer rebates. Growing

customer demand for efficient products further encouraged appliance manufacturers to produce even more efficient models. The minimum federal standards for clothes washer efficiency also increased during this ten-year timeframe, providing price/code savings beyond what the SWP rebate savings alone produced.

- Several promotional efforts that raised the rebate amount to \$200 per machine.
- Growing from two partners in 1997 (SCL and SPU) to 13, the program now covers the Puget Sound and beyond.
- Program included more than 40 retailers throughout the region.
- Website was available in both English and Spanish.

After 14 years of offering rebates and promoting the high-efficiency machines, SWP ended its participation in the program on March 31, 2011. The program achieved the original goal of transforming the clothes washer market. Energy utilities will continue the WashWise Rebate Program through 2011.

2010 WASHWISE

The WashWise Program had a very strong year, processing more than 6,500 rebates in 2010 and achieving more than 100,000 gallons per day of savings. Partners in this program included Puget Sound Energy (PSE), Cascade Water Alliance, Seattle City Light (SCL), SWP, City of Renton, Tacoma Power, Tacoma Water, Bonney Lake and Snohomish Public Utility District. Rebate levels continued at \$50-\$100. The program likely received a boost in participation from the state and federal government Cash for Appliances Washington program, which offered an additional \$100 rebate on high-efficiency ENERGY STAR® clothes washers from mid-April through November.



Appliance retailers displayed this poster and other point of purchase materials to make customers aware of WashWise rebates.

2010 PROGRAM PERFORMANCE

Total water consumption in 2010 was 118.4 mgd, down from 129.5 mgd in 2009. Much of this decrease was due to weather. Hot dry summer weather in 2009 boosted demand several mgd higher than it would have otherwise been. This was followed by unusually cold and wet weather in the summer of 2010 which is estimated to have depressed demand by as much as six mgd.

1% Program savings of an estimated 0.57 mgd was achieved in 2010. Table 3 shows the various components of the estimated long-term savings achieved in 2010, along with expenditures. Expenditure levels for 2010 reflect the constrained financial climate for both capital and operating spending at SPU.



Nurseries supported the Right Plant, Right Place campaign by grouping plants so customers could match the sun, shade and soil conditions of their yard.

Table 3: New Water Savings Achieved in 2010 and Program Cost

Components	Annual Average Million Gallons Per Day	Program Cost in Thousands of \$
Regional 1% Conservation Program		
Hardware Incentives		
Residential Indoor	0.19	\$ 1,120
Landscape	0.07	\$ 283
Commercial Non-Landscape	0.15	\$ 851
Total Hardware	0.42 ¹	\$ 2,254
Behavior	0.15	\$ 291
Total 2010 1% Conservation Program	0.57	\$2,545
Seattle-Only Conservation Program	0.04	\$ 604
Total 2010 Conservation Programs	0.61	\$3,150¹
Other Components of Savings		
Price Elasticity ²	0.37	
Building Code ³	0.70	
System Operation Savings	-0.51	
Total Other Components	-.57¹	
TOTAL SAVINGS FOR 2010	1.17	

¹ Totals do not equal sum of individual lines due to rounding.

² Price effects and behavior change savings components are interrelated and can't be easily separated by SPU's analytical tools.

³ A considerable effort continues to be made to revise local, state, and national water efficiency codes and standards to obtain future savings.

COMPONENTS OF 2010 SAVINGS

Hardware Incentive Savings include new fixtures and equipment upgrades that were supported with program incentives, as well as accelerated fixtures (beyond rates and code) that were upgraded without rebates. Based on program records, these savings are estimated to be 0.42 mgd annual average in 2010.

Price and Behavioral Savings include permanent conservation achieved from changes in customer water-using behaviors. Estimated to be 0.15 mgd annual average in 2010, behavior savings are difficult to separate from price savings since price has a strong influence in stimulating customers to change water-using behaviors. The price savings estimate of 0.37 mgd is derived from the price elasticity and overlap parameters from SPU's water demand forecast model and actual changes in water and sewer prices.

Building Code Savings include water saved by customers as they remodel plumbing fixtures to meet more stringent building code efficiency standards (1.6 gallons per flush for toilets, 1.0 gallons per flush for urinals, 2.5 gallons per minute for showerheads and aerators). The 0.7 mgd of code savings shown would have happened without a regional conservation program due to ongoing new construction and remodeling in the service area. Fixture changes that might have occurred as a result of price or education about more efficient plumbing fixtures are not part of this total, but instead are credited to price or 1% Program savings.

Seattle-Only Low-Income and Seattle-Only Accelerated Savings are not tallied as part of the Regional 1% Program. Rather, they are savings funded solely by Seattle and obtained within the Seattle direct service area in addition to (on top of) the 1% Program savings. Seattle Ordinance #120532 (I-63 Settlement Ordinance) directs SPU to go beyond the regional program and accelerate savings for Seattle customers, with an emphasis on low-income participants. SPU continued to offer the "Everyone Can Conserve" low-income conservation assistance program in 2010 per the requirements of Ordinance #120532. Funding comes 100 percent from direct service ratepayers (no wholesale customer rate dollars are expended for this program), and the region benefits from these water savings.

System Operation Savings (i.e., a reduction in non-revenue water from the previous year) are obtained from reductions in water used for in-city reservoir cleaning and overflowing, water main and tank flushing, water main leaks, metering inaccuracies, and a variety of actions not related to specific customer demand reduction activities. This water is not being sold to customers, so it is not considered a component of the 1% Program. Non-revenue water fluctuates from year to year, in some years increasing and in others decreasing. Between 1992 and 2004, non-revenue water has shown no obvious trend, varying mostly between 10 and 13 mgd. This has been due primarily to different amounts of water used for reservoir cleaning and overflowing to optimize water quality. However several recent changes have contributed to non-revenue water falling to new lows since 2005. As more and more reservoirs are covered, the need for cleaning and overflowing is significantly reduced. In addition, the installation of meters at the outflows of some of the remaining open reservoirs has improved overflow monitoring. As a result, non-revenue water dropped to new lows, averaging about 7 mgd since 2006. Non-revenue water in 2010 was 8 mgd. Though a little higher than last year, this is still a very low level of non-revenue water and represents just seven percent of total water produced by SPU.



This half-page ad ran in On-Site, a newspaper for property managers, to promote the rebate program.

RESIDENTIAL INDOOR HIGHLIGHTS

Table 4: Residential Hardware Savings

Measure	Fixtures Installed - Life of Program 2000-2010	2010 Fixtures Target	2010 Fixtures Installed	2010 Savings (gallons/day)
Washing Machines	78,770	6,500	6,648	106,744
Multifamily Toilets	32,838	2,400	2,250	57,150
Single-Family Toilet Rebates	5,773	400	452	7,836
Single-Family Showerheads	180,392	NA	NA	NA
Multifamily Showerheads & Aerators	36,693	NA	2,117	3,799
Multifamily Coin-Operated Washers	1,073	NA	49	1,158
Non-Rebate Savings ¹	NA	NA	NA	17,759
Total Savings				194,445

¹ Non-rebate savings reflect the influence of SWP educational and promotional outreach efforts that encouraged customers to purchase and install water-saving equipment. SWP rebates are used as a tool to encourage purchase, but some customers, for a variety of reasons, make purchases without applying for rebates. These non-rebate savings are estimated as a small percentage of customers who applied for rebates.



WashWise rebates were promoted on Metro buses throughout the regional service area.



Crystal Bay Apartments in Highline Water District was one of the first customers to choose WaterSense toilets. Residents gave the fixtures rave reviews.



Customers redeemed this coupon at participating retailers for an instant \$30 discount on a WaterSense labeled toilet.

Detailed Program Accomplishments

This chapter takes a more detailed look at conservation program activity and results in each major customer sector.

2010 PROGRAM HIGHLIGHTS:

- The **commercial program completed 111 projects, the largest number since 2001.** Three successful seminars took place to promote water conservation in the commercial sector, and the Greening Ethnic Businesses program increased the participation of Mexican restaurants.
- The **WashWise Program** processed more than 6,500 rebates, achieving more than 100,000 gallons per day of savings. The program likely received a boost in participation from the state and federal government **Cash for Appliances Washington** program, which offered an additional \$100 rebate on clothes washers from mid-April through November. The SWP was instrumental in helping to create this Federal-State-Local rebate opportunity.
- The **Multifamily Toilet Retrofit Program** replaced more than 2,200 fixtures. For the first time, all toilets funded by the program were EPA WaterSense-labeled models.
- The SWP moved from pilot mode to program execution with the **\$30 Single Family Toilet Rebate** program. Over nine months, 452 applications were processed. Rebate applications were available in four languages on the regional website, www.savingwater.org.
- The **Free Rain Sensor Program** engaged more than 150 participants in making their irrigation systems more efficient.
- The SWP **Savvy Gardener** classes continued to grow, attracting more than 500 participants. Evaluations show consistently high satisfaction with these offerings.
- The SWP participated in a number of **criteria, codes, standards and specifications development actions** intended to improve water-efficiency at the state and national level. The SWP was active in the development of specifications for EPA WaterSense toilets, urinals, faucets, and showerheads. A significant effort continued to enforce the existing federal standards for showerheads. Although unsuccessful, SWP staff was able to build support for state legislation which would have mandated high-efficiency 1.28 gallon per flush residential toilets in new construction after Jan 1, 2014. The bill will be reintroduced in future legislative sessions. SWP also provided comments on changes to the voluntary Leadership in Energy and Environmental Design (LEED) specifications for water-efficiency. New LEED criteria switched from offering bonus points for water-efficiency to a mandatory requirement that LEED-certified

projects contain one or more water-efficiency measures in order to get their voluntary certification. This insures that all LEED projects will have some water-efficiency elements in their design.

- SWP members collaborated to meet the requirements of the **State Department of Health Water Use Efficiency Rule**, which requires annual reporting of water conservation goals and progress.



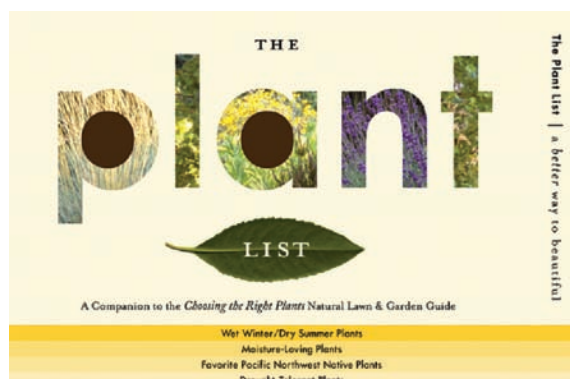
The Cool-Tunes manual was unveiled at this successful workshop on cooling tower efficiency.

AWARDS

Thanks to our customers and partners, the SWP received these awards:



Toilet Round-Up Events promotion received a Totem Award from the Puget Sound Chapter of the Public Relations Society of America (2001)



The Plant List brochure received a Conservation award from the American Water Works Association (2006)



The Water Busters game received a Conservation award from the American Water Works Association (2006)



SWP WaterSense Toilet promotion earned the Environmental Protection Agency National WaterSense Partner of the Year (2008)

Al Dietemann, Seattle Public Utilities, received the Partnership for Water Conservation Water Conservation Leadership Award (2007)

Deborah Rannfeldt, Woodinville Water District, received the Partnership for Water Conservation Michael Mercer Water Conservation Educator Award (2009)

1% Program Team Leader, Al Dietemann, received the Environmental Protection Agency National Water Efficiency Leader Award (2007)

MARKET TRANSFORMATION SUCCESSES

The SWP moved the market by using incentives or distributing the following products. These products are now mainstream:

- High-efficiency residential clothes washers
- High-efficiency residential showerheads
- Soaker hoses
- Compost
- High-efficiency pre-rinse sprayheads used in commercial kitchens.

1% Program Highlights

2000

- 1% Program launches. Logo, brand and 684-SAVE hotline
- WashWise clothes washer single-tier rebates
- Free irrigation audits
- Business rebates
- Partnerships with energy utilities, vendors, and agencies

2001

- Regional web site Savingwater.org
- 4,600 toilet rebates at Toilet Round-Up events
- 100,000 aerators installed via Conservation Kits with energy utilities
- Multifamily toilet rebates
- Low-income toilet rebates
- Rain sensor promotion for automatic irrigation systems

2002

- WashWise clothes washer three-tier rebates
- NW Natural Yard Days
- 29 Nurseries distribute 33,000 Naturals Guides
- Online map of Cedar River Watershed

2003

- “Mulch Now, Play Later” campaign
- Targeted marketing to residential high peak water users
- Youth education “Water Busters Game” becomes an internet hit

2004

- “Overwatering Soaks You” campaign
- Irrigation contractor training classes offered in partnership with the landscape industry
- 1,000 Visitors to Salmon Days conservation booth
- 2,000 Commercial dishwashing sprayheads installed

2005

- 50,000th WashWise clothes washer rebate
- High-performance toilets promoted using FlushStar[®] List
- Successful partnerships created with garden writers
- Mass distribution of “The Plant List” and “Right Plant, Right Place” campaign in cooperation with local nurseries
- Greening Ethnic Businesses Program launches

2006

- Partnerships with TV, radio, and weatherman Steve Pool – weekly watering index
- 1,000 Subscribers to the New Savvy Gardener e-newsletter
- Regional customer survey evaluates changes in attitudes and water use
- Commercial new construction incentives added to traditional retrofit incentives for going “beyond codes”

2007

- 79,000 Single family showerheads distributed in cooperation with utility and agency partners
- Weatherman Steve Pool announces tips twice a week and directs people to his Watering Forecast
- Single family water use benchmarking and billing attribution analysis completed

2008

- 9,000 Multifamily showerheads, aerators and efficient light bulbs distributed in cooperation with CWA and energy utilities
- Enhanced landscape contractor training
- 140 commercial customers attend Integrated Conservation Workshop and Green Properties Forum
- WaterSense product promotion wins WaterSense Partner of the Year Award for SWP

2009

- 3,000 Commercial toilet rebates in one year
- \$30 Single Family WaterSense Toilet Rebate Program
- “Fall is for Planting” campaign
- TV personalities Ciscoe Morris and Meeghan Black promote conservation at Spring Garden Fair
- New Commercial Kitchen Group partnership consolidates rebates for kitchen equipment across utilities
- Irrigation training classes offered in Spanish

2010

- Multifamily Program switches to rebating only WaterSense toilets
- Federal stimulus funding of Cash for Appliances brings an extra \$100 customer rebate for WashWise clothes washers
- Fix-a-leak web videos created and widely promoted to customers
- Successful partnership with irrigation contractors and CWA on rain sensors and controllers
- Post-2010 conservation program planning and design
- Led development for national voluntary standards for water-efficiency