City of Bellevue
Proposed Water Conservation Goal
Public Briefing Document

1.0 Background

Purpose / Water Conservation Rule

Washington State's new Water Use Efficiency Rule requires municipal water suppliers to establish a water conservation goal. The City of Bellevue's water conservation goal must be approved by the Bellevue City Council no later than January 22, 2008, and then re-established at a minimum every six years. The goal must be measurable in terms of reduced or maintained water production or usage. Progress towards the goal must be reported annually to the State and City customers.

Public Process

The water conservation goal must be established using a public process. The public process is intended to provide an opportunity for consumers and the public to comment on the City's proposed goal. Bellevue has chosen to use the Environmental Services Commission (ESC) as the public process venue. The ESC is a voluntary group of seven residents that advise the City Council on water, wastewater, storm and surface water, and garbage and recycling programs. The ESC will hold a special meeting on October 4, 2007, at 6:30 p.m. at the Bellevue City Hall to serve as the public hearing for the proposed water conservation goal. The City will make a brief presentation regarding the proposed goal and public comments will be accepted. All comments received at the hearing will be reviewed by City staff and considered by the Bellevue City Council.

As part of the public process, this document provides background information related to the City's proposed water conservation goal. Three related documents provide further details: 1) the Conservation Chapter of the City of Bellevue's Water Comprehensive Plan; 2) Cascade Water Alliance's Resolution #2007-02 about adopting Cascade's Water Conservation Goal; and, 3) Cascade Water Alliance's 2005 Conservation Potential Assessment. Those three documents are provided along with this public briefing document.

Overview of Water Sales and Sources of Supply

Bellevue provides water to approximately 60,000 households and 2,000 businesses. In 2006, the City's customers used approximately 14 million gallons per day (mgd) of water. As shown in Figure 1 below, over half of the water is used by single-family households, a fifth of the water is used by multi-family customers and approximately one quarter of the water is used by commercial customers. As shown in Figure 2 below, water use is not constant over the year, but rather increases during the summer months, primarily due to irrigation. Part of the objectives of the City's water conservation program is to reduce this summer peak.

Figure 1 – Water Sales by Customer Type
(based on 2006 sales data)

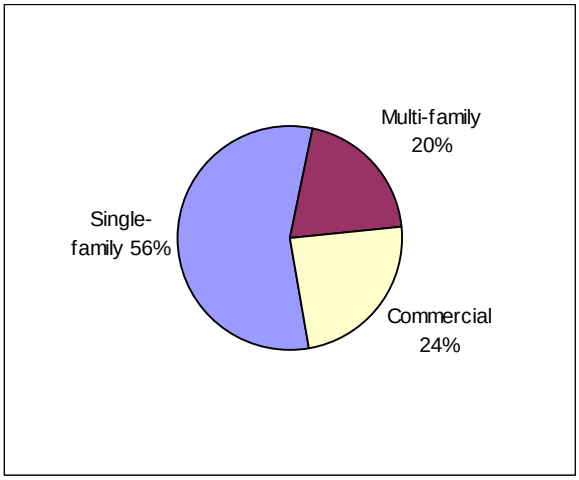
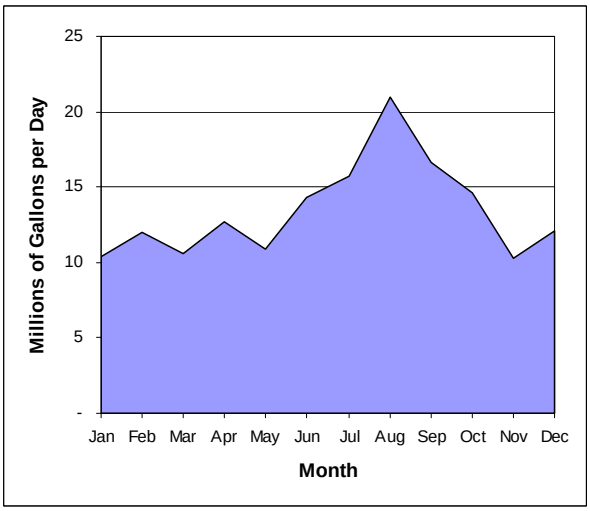


Figure 2 – Summer Peaking



Bellevue receives its water from Cascade Water Alliance (Cascade), which is an association of eight cities and water districts in King County that jointly plan for their water supply. Members include the Cities of Bellevue, Kirkland, Issaquah, Redmond, and Tukwila, as well as Covington Water District and Sammamish Plateau and Skyway Water and Sewer Districts. Cascade members supply nearly 50 percent of retail water sales in King County outside of the City of Seattle.

Figure 3 below shows the location of the Cascade members and sources of supply. Currently, Cascade's regional source of supply is the South Fork Tolt and Cedar Rivers through an agreement with the City of Seattle. Cascade is working to develop new sources of water for the area's growing population. Thanks to great progress in 2006, Cascade is set to begin construction on the Tacoma-Cascade Regional Pipeline, which will link Tacoma's second supply system to member districts. The project is scheduled to begin in the fall of 2007.

Figure 3 – Cascade Water Alliance Map

Water Conservation History

While the requirement to set a water conservation goal is new, water conservation itself is not new to the City. The City has had an active water conservation program since 1987. Per capita water use has decreased 16% since the pre-conservation baseline period as a result of water conservation program efforts, the City's water conservation rate structure, and water efficiency codes.

Bellevue's water conservation program is comprised of both regional and local programs. Regional programs are implemented throughout broader geographic regions and most recently have been primarily managed by Cascade Water Alliance. Local programs complement regional efforts, are implemented only in the City's service area and are managed by City staff. The City's current water conservation program includes approximately 15 water conservation measures targeting the full range of customer types and targets both indoor and outdoor savings.

Bellevue's water conservation program has been designed to accomplish the following:

Comply with the State of Washington's Department of Health water conservation planning requirements.

Promote the efficient use of water within Bellevue's water service area.

Identify activities that will slow the increase of average and peak water use demands.

Implement water conservation measures that provide value to Bellevue customers in a cost effective manner.

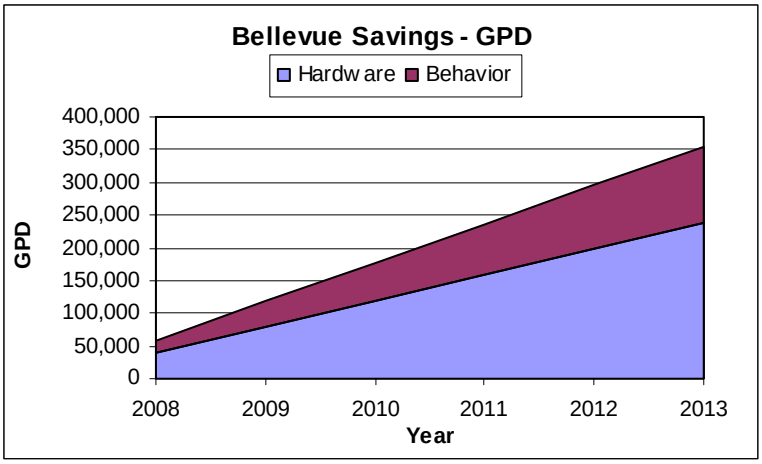
Work in partnership with Cascade to foster consistency with Cascade's regional water conservation objectives and supply management goals.

2.0 Proposed Water Conservation Goal

On May 23, 2007, the Cascade Board of Directors approved a resolution adopting a regional water conservation goal for Cascade. The Cascade goal, which covers the combined service area of all eight Cascade Members, was developed based on Cascade and City staff estimates of individual members' expected savings and goals that were then combined into Cascade's goal. A public process was not a requirement for Cascade's goal setting. A copy of Cascade's resolution is provided with this briefing document.

The City's proposed water conservation goal, which is based primarily on Bellevue's portion of Cascade's regional goal, is to achieve 355,000 gallons per day (gpd) in savings by the end of the six year (2008-2013) water conservation program. This translates to an average of 59,000 gpd of new savings each year. Figure 4 below shows how the savings start at 59,000 gpd in 2008 and grow to 355,000 gpd by 2013.

Figure 4 – Bellevue Savings



3.0 Proposed 2008-2013 Water Conservation Program

Bellevue's proposed goal is supported by Bellevue's proposed 2008-2013 Water Conservation Program, a summary of which is provided in Table 1 below. Similar to previous water conservation efforts, the program contains both regional and local programs, targets all sectors, targets both indoor and outdoor savings, and targets both hardware and behavior savings. Bellevue's proposed water conservation program is estimated to cost $315,000 annually.

Table 1 – Bellevue's Proposed 2008-2013 Water Conservation Program

Regional or Local	Type	Program	Sectors[1]				Current Program	2008-2013 Program	Savings (gpd) Achieved at End of 2013[2]	Annual Costs[3]
			SF	MF	ICI	Youth				
Regional	Indoor Hardware	1. Clothes Washer Rebates	X	X	X		Yes	Yes	355,000	$235,000
		2. Toilet Rebates		X	X		Yes	Yes		
		3. Urinal Rebates			X		Yes	Yes		
		4. Free Showerhead & Bathroom Faucet Aerators		X			Yes	Yes		
		5. Ice Machine Rebates			X		Yes	Yes		
	Outdoor Hardware	6. Free Irrigation Audits	X				Yes	Yes		
		7. Irrigation Controller Rebates	X	X	X		Yes	Yes		
		8. Irrigation System Rain Sensor Rebates	X	X	X		Yes	Yes		
	Behavior	9. Toilet Leak Detection & Repair	X	X			No	Yes		
		10. Decreased Shower Use	X	X			No	Yes		
		11. Decreased Partial Clothes Washer Loads	X	X			No	Yes		
		12. Allow Lawn to go Dormant	X				No	Yes		
	Education & Outreach	13. Public Awareness Campaign	X	X			Yes	Yes		
Local		14. Waterwise Garden & Volunteer Program	X				Yes	Yes		$80,000
		15. Natural Yard Care Classes & Outreach	X				Yes	Yes		
		16. Cedar River Watershed Tours & Workshops				X	Yes	Yes		
		17. 4th Grade Science Water Curriculum				X	Yes	Yes		
		18. 6th Grade "Powerful Choices for the Environment" Program				X	Yes	Yes		
Total									**355,000**	**$315,000**

1. SF is single-family. MF is multifamily. ICI is industrial, commercial and institutional. Youth relates to school-based educational programs.
2. The savings can not be precisely allocated between the regional and the local programs since much of the local education and outreach work helps foster participation in the regional programs.
3. Funding for the City's proposed water conservation program is included in the 2007-2008 budget. The $235,000 for regional program costs represent the City's portion of the budget for the 2008-2013 draft Cascade Water Alliance water conservation program.

The local programs complement the regional programs, focusing on educating youth, reducing residential peak season water use, and fostering participation in the regional programs.

The regional programs are part of Cascade's 2008-2013 water conservation program. The Cascade water conservation program is consistent across all eight members and yet allows flexibility for each member recognizing differences between members. Cascade's program was developed by a committee representing all eight members.

The foundation for Cascade's water conservation program is Cascade's 2005 Water Conservation Potential Assessment (CPA), which is an analysis of savings potential and associated costs for dozens of water conservation measures for each member related to their specific service area characteristics (e.g., sector mix, population, etc.). The committee used the CPA to select the most appropriate measures to include in Cascade's program based on several factors, including cost effectiveness. Members then decided how intensively to implement each selected measure in their specific service area.

Below are brief descriptions of the programs listed in Table 1 above. The City plans for the program to remain flexible over time and it should be recognized that the details may change over the course of the six years. New conservation opportunities may arise that are not anticipated and/or planned measures may not prove to be as fruitful as expected. However, the City anticipates that any adjustments will maintain the over all cost-effectiveness of the program and achieve the conservation goal proposed. More information about the regional programs can be found in Cascade's 2005 Water Conservation Potential Assessment. Additional information about the local programs can be found in the City of Bellevue's Water Comprehensive Plan, Conservation Chapter. Those documents are provided along with this public briefing document. Water conservation programs include:

1. Clothes Washer Rebates: Provides partial rebates for residential customers and laundromats to replace less efficient clothes washers with more efficient models.

2. Toilet Rebates: Provides partial rebates for multi-family and commercial customers to replace less efficient toilets with either 1.6 gallons per flush (gpf) or 1.0 gpf toilets.

3. Urinal Rebates: Provides partial rebates for commercial customers to replace less efficient urinals with either 1.0 gpf urinals or waterless urinals.

4. Free Showerheads and Bathroom Faucet Aerators: Provides free 2.0 gallons per minute (gpm) showerheads and 1.0 gpm bathroom faucet aerators for multi-family customers to replace less efficient fixtures.

5. Ice Machine Rebates: Provides partial rebates for commercial customers to replace water-cooled ice machines with air-cooled models.

6. Free Irrigation Audits: Provides free landscape water use audits to single-family customers with automatic irrigation systems to identify hardware and scheduling improvements, and other techniques such as lawn maintenance, mulching, and soil amendments that could conserve water.

7. Irrigation Controller Rebates: Provides partial rebates for single-family, multi-family and commercial customers for evapotranspiration-based controllers, which link irrigation to weather conditions.

8. Irrigation System Rain Sensor Rebates: Provides partial rebates for single-family, multi-family and commercial customers for rain sensors, which turn off automatic irrigation systems when it is raining.

9. Toilet Leak Detection and Repair: Provides free toilet leak detection tablets for residential customers to determine if their toilets leak and provide detailed information on how to fix leaks.

10. Decreased Shower Use: Encourages residential customers to shorten their showering time by one minute.

11. Decreased Partial Clothes Washer Loads: Encourages residential customers to eliminate partial loads of laundry.

12. Allow Lawn to go Dormant: Encourages single-family customers to voluntarily not water their lawn in the summer, and instead let it go dormant. Allowing lawns to go dormant does not eliminate lawn watering completely; dormant lawns still require some water to stay alive.

13. Public Awareness Campaign: Promotes the need for water conservation, as well as several specific programs, especially behavioral programs, via various paid and unpaid methods.

14. Waterwise Garden and Volunteer Program: Features interpretive signage, how-to yard care guides, staff, and volunteers providing water conservation information and classes on site planning, plant selection, soil building, and efficient watering at the Waterwise Demonstration Garden at the Bellevue Botanical Garden.

15. Natural Yard Care Classes and Outreach: Seasonal classes with local horticultural professionals encourage single-family customers to adopt natural yard care practices that reduce landscape water use. Seasonal tips and how-to articles are also provided through the City's community outreach channels, such as the City's web site and It's Your City publication.

16. Cedar River Watershed Tours and Workshops: Supports tours of the Cedar River Watershed for elementary school children, which focus on water conservation, as well as water-related topics.

17. 4th Grade Science Water Curriculum: Provides elementary schools with a science curriculum called "Shared Waters" used in fourth grade that teaches students about water conservation, as well as other water-related topics. Additionally, a water conservation kit and a five-minute shower timer are provided.

18. 6th Grade "Powerful Choices for the Environment" Program: Supports this four-day in-depth conservation program focusing on water conservation, as well as other energy-related issues, through hands-on activities, classroom presentations, and computer analysis.

4.0 Savings Comparison Between Current and Proposed Programs

Table 2 below provides a comparison of savings between Bellevue's current and proposed programs. As described earlier, Bellevue's proposed 2008-2013 water conservation program is anticipated to generate an average of 59,000 gpd of new savings each year. Bellevue's current program has been documented to average 24,000 gpd of new savings each year. The increased savings from the current program to the proposed 2008-2013 program is due to two factors: 1) increased savings from hardware programs; and, 2) new tracking of savings achieved through behavior measures.

Table 2 – Savings Comparison

Program Type	Average New Savings Each Year (gpd)	
	Current Program	Proposed 2008-2013 Program
Hardware	24,000	40,000
Behavior/Education & Outreach	Data not available	19,000
Total	**24,000**	**59,000**

5.0 Evaluation

Evaluation of the water conservation program is important to ensure anticipated savings are being achieved and to modify the program if necessary to achieve the savings. Bellevue has always placed strong emphasis on evaluation. This emphasis is even more critical since under the new Water Use Efficiency Rule the City is required to report annually to the State and City customers on progress towards meeting its water conservation goal.

The performance of the water conservation program will be evaluated annually, if not more frequently. The evaluation will vary to some degree for different types of programs, such as hardware programs versus behavior programs. The evaluation is anticipated to include aspects such as tracking actual activity levels compared to planned activity levels and verifying installation rates.