



CITY OF KIRKLAND
Department of Public Works
123 Fifth Avenue, Kirkland, WA 98033 425.587.3800
www.ci.kirkland.wa.us

MEMORANDUM

To: David Ramsay, City Manager

From: Van Ingram-Lock, Management Analyst
Erin Leonhart, Public Works Facilities & Administrative Manager
Daryl Grigsby, Public Works Director

Date: December 13, 2007

Subject: WATER USE EFFICIENCY RULE – CONSERVATION GOAL SETTING

RECOMMENDATION:

It is recommended that, consistent with Water Use Efficiency Rule requirements, Council:

1. Conduct a public hearing to be held at the January 2nd Council meeting about setting Kirkland's conservation goal of 88,000 gallons per day (approximately 1.5% of projected 2013 demand) in savings by 2013; and
2. Approve the attached resolution (Attachment 1) adopting this water conservation goal.

BACKGROUND AND DISCUSSION:

As presented at the November 7, 2007 Council meeting, in 2003 the Washington State Legislature passed the Municipal Water Law (HB1338) to address the increasing demand on our state's water resources. The Law identifies additional elements related to water rights, system capacity, service area consistency and conservation that are required in all water system plans. Also included in the Law was a directive for the Washington State Department of Health (DOH) to adopt a rule that establishes water use efficiency requirements for all municipal water suppliers. The outcome of this was the Water Use Efficiency (WUE) Rule.

One element of the Rule requires municipal water suppliers to establish a water conservation goal which must be reviewed through a public process and adopted by City Council no later than January 22, 2008. This goal must be re-established every six years via a public process. Progress towards the goal must be reported annually to the State and City customers.

PUBLIC PROCESS

The Water Use Efficiency Rule requires that the public have the opportunity with two weeks' advance notice to comment on the conservation goals proposed by the City. Information about Kirkland's proposed conservation goal has been available on the City website (Attachment 2) and a public notice was published on December 18, 2007. Public comments will be accepted before the January 2nd Council meeting and during the hearing.

HOW WERE THE CASCADE AND MEMBER GOALS DEVELOPED?

Since 2004, the City of Kirkland has been a member of the Cascade Water Alliance (Cascade) along with 7 other water providers (Bellevue, Redmond, Issaquah, Sammamish Plateau, Covington, Skyway and Tukwila). As a member, Kirkland began buying water through Cascade (previously, Kirkland bought water directly from Seattle) and Cascade assumed the responsibility of administering a regional conservation program on behalf of its members. The conservation program is built upon the premise that water is a valuable and essential natural resource that needs to be used wisely, in addition conserving water helps:

...meet future needs. As our region grows, the demands on our water supply continue to grow. Conservation stretches our current supply until new water resources are developed.

...with supply in the summer when demand is highest and precipitation is the lowest. Nature's capacity to produce water is limited and unpredictable. Abundant precipitation generally falls only from autumn until spring. During the summer when water use peaks, however, we rely on minimal rain and snowmelt.

...to ensure an adequate supply for growing human and environmental needs including fish and animals.

In May 2007, the Cascade Board adopted, by resolution, a conservation goal for the collective Cascade service area. The goal states that "Cascade will dedicate resources necessary to achieve a cumulative combined Member savings of 1 million gallons per day on an annual basis and 1.45 million gallons per day during peak season by 2014."

Kirkland's proposed conservation goal, which is based on Kirkland's portion of Cascade's regional goal, is to achieve 88,000 gallons per day (gpd) in savings by the end of the six year (2008-13) water conservation program. Details of Kirkland's portion of the regional program are shown in Attachment 3 from the Cascade Conservation Program.

KIRKLAND TOTAL WATER CONSUMPTION, 2002-2006		
YEAR	TOTAL GALLONS PER YEAR	AVG GALLONS PER DAY
2006	1,440,934,484	3,947,766
2005	1,379,278,340	3,778,845
2004	1,429,148,622	3,915,476
2003	1,474,144,188	4,038,751
2002	1,405,728,368	3,851,311

Cascade's conservation goal was developed from the Conservation Program based upon the 2005 Cascade Conservation Potential Assessment (CPA). The CPA analyzed conservation opportunities and estimated water savings and costs associated with 22 conservation measures. The CPA included a market research survey carried out within the Cascade service area. The survey provided information about residential customer knowledge, attitudes, equipment, and behaviors related to water conservation. From the results of the survey, it was possible to determine an assumed customer participation level. To this,

industry standards were utilized to determine the potential savings. The process of moving from the CPA analysis to the Conservation Program consisted of the following steps:

- Determine the conservation budget.
- Allocate the Cascade budget to each Member.
- Develop Members' CPA spreadsheets.
- Select measures for inclusion in Conservation Program.
- Select Members' measure implementation intensity.
- Validate compliance with the State Water Use Efficiency Rule.
- Combine results for each Member into the Conservation Program.

CITY OF KIRKLAND'S RECOMMENDED CONSERVATION GOAL

Staff is recommending that Kirkland's portion of the Cascade conservation goal (88,000 gallons per day (gpd), equivalent to approximately 1.5% of 2013 demand, in savings by 2013) be adopted as the Kirkland goal for the purpose of the Water Use Efficiency Rule. By means of comparison, other Cascade members and their water savings goals at the end of the six year (2008-2013) water conservation program are:

- City of Redmond - achieve 178,000 gallons per day on an average annual basis (equivalent to 1.6% of 2013 demand) and 245,000 gallons per day during peak season
- Sammamish Plateau Water and Sewer District - achieve 129,000 gallons per day on an average annual basis (equivalent to 2.7% of 2006 demand)

It is important to note that the organizations above have local conservation programs in addition to the Cascade program. Kirkland has historically relied upon the regional water provider for conservation services. Kirkland does not currently have staff or funding to support an in-house program. If there is an interest in the future of increasing conservation activities, this can be addressed by recommending increases to the Cascade program or funding a Kirkland staff position within the Water Utility.

Attachment 1 – Water Use Efficiency Goals, Public Information Packet

Attachment 2 – Tables from Cascade Conservation Plan

Attachment 3 – Resolution

City of Kirkland
Water Use Efficiency Goals
Public Information Packet

City of Kirkland
Public Hearing
January 2, 2008, 7:30pm
Kirkland City Hall
123 Fifth Ave; Kirkland, WA



1. Purpose/Water Use Efficiency Rule

Washington State's new Water Use Efficiency Rule requires municipal water suppliers to establish a water conservation goal. The City of Kirkland water conservation goal must be approved by the Kirkland 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. Kirkland has chosen to use the Kirkland City Council as the public process venue. The information will be presented at the City Council meeting on January 2, 2008 at 7:30 p.m. at the Kirkland 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. Public comments will be accepted before the Council meeting (425-587-3907 or VIngram-Lock@ci.kirkland.wa.us) and during the hearing. All comments received will be reviewed by City staff and considered by the Kirkland 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 Kirkland'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 available on line with this public briefing document at www.ci.kirkland.wa.us/depart/Public_Works.htm.

Overview of Water Sales and Sources of Supply

Kirkland provides water to approximately 9,753 households and 694 businesses. In 2006, the City's customers used approximately 4.3 million gallons per day (mgd) of water. As shown in Figure 1, 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, 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)

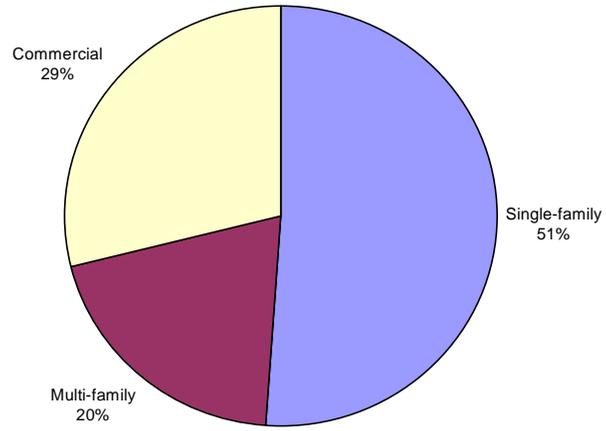
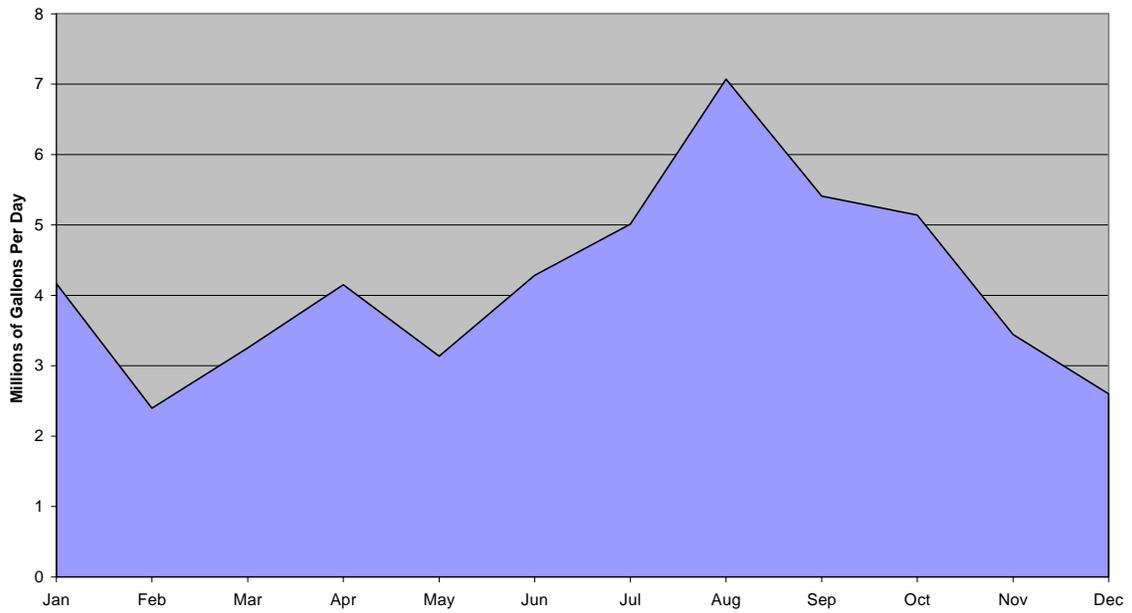


Figure 2 - Summer Peaking
(based on 2006 consumption data)



Kirkland 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 Kirkland, Bellevue, 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.

2. Existing Water Conservation Efforts

Kirkland's Comprehensive Water System Plan outlines the Conservation Program used in Kirkland's partnership with Cascade. During 2004 and 2005, Cascade developed its Conservation Potential Assessment. This planning document has been used by Cascade in 2006 and 2007 to develop policies regarding Cascade's delivery of conservation programs to its members and to develop water use efficiency goals for the organization. Cascade is still finalizing development of its Conservation Plan; however, most conservation programs have been identified by Cascade and are identified in Section 4 of this document.

Kirkland is an active participant in regional water conservation efforts such as clothes washer rebates and conservation messaging in theaters and on buses. These regional efforts have included participation with City of Seattle when it was Kirkland's contracted water supplier and now with Cascade as Kirkland's current contracted water supplier.

3. Proposed Water Conservation Goal

On May 23, 2007, the Cascade Board of Directors (including City of Kirkland Councilmember Mary-Alyce Burleigh) 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 on Kirkland's portion of Cascade's regional goal, is to achieve 88,000 gallons per day (gpd) in savings by the end of the six year (2008-2013) water conservation program. This translates to an average of 14,000 gpd of new savings each year.

4. Proposed 2008-2013 Water Conservation Program

The Cascade conservation programs planned for the City of Kirkland are summarized in Attachment 1 (from the draft Cascade Conservation Plan). The spreadsheet shows the various conservation measures that are planned to be implemented, the estimated number of participants, the savings that are anticipated, and the estimated program costs.

The Cascade programs for Kirkland include the following measures:

1. Public Outreach
2. Clothes Washer Rebates
3. Toilet Rebates
4. Water Efficient Urinal Rebates
5. Showerheads and Faucet Aerators
6. Ice Machine Rebates
7. Irrigation Audits & Controller Rebates
8. Rain Sensors for Irrigation Systems
9. Toilet Leak Detection & Repair
10. Decreased Shower Use
11. Decreased Partial Clothes Washer Loads
12. Dormant Lawns

5. Water Use Efficiency Performance Reports

The Water Use Efficiency Rule requires an annual report be developed and sent to the City's water customers before July 1st of each year beginning in 2008. This report will likely be distributed with the annual Water Quality Report. The report will estimate annual conservation savings and the progress made towards achieving the goal.

2.5 City of Kirkland

A summary of how the Conservation Program is anticipated to be implemented in Kirkland is provided in Table 2-11. The savings for each year are shown in Table 2-12 and Figures 2-15 and 2-16. The Kirkland analysis spreadsheet is provided in Appendix E.

Table 2-11 - Kirkland Program Details

Conservation Measure		Participants		Devices/Rebates		Savings (at full implementation)		Costs	
		Total	Avg Annual ¹	Total	Avg Annual ¹	Annual gpd	Peak Season gpd	Total Over Plan Period	Avg Annual ¹
SF	Toilet rebates - 1.6 gpf	0	0	0	0	0	0	\$0	\$0
	Toilet leak detection and repair	2,013	335	5,636	939	9,982	9,982	\$5,636	\$939
	Decreased shower use	249	41	n/a	n/a	1,585	1,585	\$0	\$0
	Clothes washers rebates	880	147	880	147	13,219	13,219	\$44,000	\$7,333
	Decreased partial clothes washer loads	246	41	n/a	n/a	898	898	\$0	\$0
	Free irrigation audits – automatic systems	84	14	84	14	1,307	3,910	\$35,262	\$5,877
	Irrigation controller rebates	99	17	99	17	773	2,313	\$24,833	\$4,139
	Irrigation system rain sensor rebates	89	15	89	15	258	771	\$8,940	\$1,490
	Allow lawn to go dormant	413	69	n/a	n/a	13,697	40,978	\$0	\$0
MF	Toilet rebates - 1.6 gpf (\$80 rebate)	585	98	995	166	10,770	10,770	\$79,560	\$13,260
	Toilet rebates - 1.0 gpf (E) ²	220	37	374	62	5,330	5,330	\$37,400	\$6,233
	Toilet leak detection and repair	1,714	286	2,914	486	5,569	5,569	\$2,914	\$486
	Free showerheads - 2.0 gpm	201	34	302	50	1,697	1,697	\$906	\$151
	Decreased shower use	229	38	n/a	n/a	955	955	\$0	\$0
	Free bathroom faucet aerators – 1.0 gpm	201	34	463	77	1,300	1,300	\$532	\$89
	Clothes washers rebates	758	126	152	25	7,464	7,464	\$7,584	\$1,264
	Decreased partial clothes washer loads	169	28	n/a	n/a	201	201	\$0	\$0
	Irrigation controller rebates	8	1	8	1	339	1,015	\$4,199	\$700
	Irrigation system rain sensor rebates	8	1	8	1	113	338	\$840	\$140
ICI	Toilet rebates - 1.6 gpf	35	6	140	23	5,179	5,179	\$13,968	\$2,328
	Toilet rebates - 1.0 gpf (E) ²	14	2	58	10	2,823	2,823	\$5,787	\$964
	Urinal rebates - 1.0 gpf	12	2	17	3	361	361	\$873	\$146
	Urinal rebates - waterless	6	1	9	1	434	434	\$873	\$146
	Clothes washers rebates	1	0	17	3	1,936	1,936	\$5,187	\$864
	Ice machines rebates	6	1	6	1	892	892	\$4,480	\$747
	Irrigation controller rebates	10	2	10	2	1,276	3,817	\$5,027	\$838
	Irrigation system rain sensor rebates	10	2	10	2	425	1,272	\$1,005	\$168
TOTAL	n/a	n/a	n/a	n/a	88,784	125,010	\$289,805	\$48,301	

1. Most measures will be implemented evenly over the six-year planning period; therefore, their actual annual numbers should match the average annual numbers.

Table 2-11 & 2-12 Kirkland’s Proposed Conservation Goal and Savings



9-24-07 DRAFT

2.5 City of Kirkland

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TOTAL	n/a	n/a	n/a	n/a	88,784	125,010	\$289,805	\$48,301	

1. Most measures will be implemented evenly over the six-year planning period; therefore, their actual annual numbers should match the average annual numbers.

Table 2-12 - Kirkland Cumulative Savings

Category	2008	2009	2010	2011	2012	2013
Annual Basis						
Hardware	9,316	18,632	27,949	37,265	46,581	55,897
Behavior	5,481	10,962	16,444	21,925	27,406	32,887
Total	14,797	29,595	44,392	59,190	73,987	88,784
Peak Season Basis						
Hardware	10,807	21,614	32,421	43,228	54,035	64,842
Behavior	10,028	20,056	30,084	40,112	50,141	60,169
Total	20,835	41,670	62,505	83,340	104,175	125,010

Figure 2-15 – Kirkland Savings (Annual Basis)

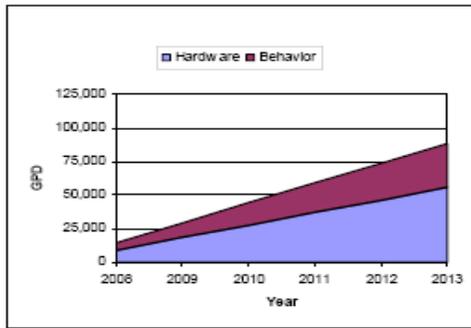
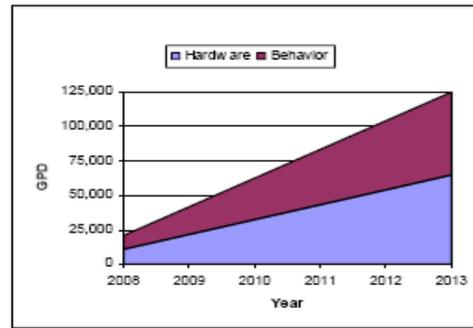


Figure 2-16 – Kirkland Savings (Peak Season Basis)



RESOLUTION R-4681

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF KIRKLAND
ADOPTING WATER CONSERVATION GOALS.

WHEREAS the Washington State Legislature adopted the Municipal Water Law, (House Bill 1338,) requiring that the Washington State Department of Health establish water use efficiency requirements designed to ensure efficient use of water while maintaining water system financial viability, improving affordability of supplies, and enhancing system reliability; and

WHEREAS the Washington State Department of Health has developed Water Use Efficiency Requirements that are now codified within WAC Chapter 246-290; and

WHEREAS the rule requires that municipal water suppliers develop and implement a water use efficiency program which includes sufficient cost-effective water use efficiency measures to meet the water use efficiency goals adopted by the local water purveyors; and

WHEREAS WAC 246-290-830 institutes a process for the local water purveyor to establish Water Use Efficiency Goals that must be designed to enhance the efficient use of water by the water system and its customers; and

WHEREAS the rule requires that the Water Use Efficiency Goals be set in a public forum that provides opportunity for consumers and the public to participate and comment on the Water Use Efficiency Goals, that public notice must occur at least two weeks prior to the public forum, that the elected governing board of the public water system shall review and consider all comments received, and that various materials be available for the public fully documenting the basis for the goals; and

WHEREAS the rule requires that the Water Use Efficiency Goal include an implementation schedule for each water use efficiency measure selected, and

WHEREAS the City of Kirkland is a Member of the Cascade Water Alliance and through the Membership Agreement Cascade shall develop and carry out water conservation programs that are uniform among Members and Cascade shall implement a Cascade conservation management plan that provides a mandatory base conservation program that functions to reduce both average and peak demands; and

WHEREAS Cascade Water Alliance is developing its Water Conservation Program and has completed a Conservation Potential

Assessment that analyzed a number of conservation programs for all of the Cascade members that included a variety of programs for different customer classes, for indoor and outdoor uses, and that were hardware solutions and behavior changes; and

WHEREAS the City of Kirkland and Cascade recognize that water is a valuable and essential natural resource that needs to be used wisely; and

WHEREAS Cascade Water Alliance has determined that conservation alone will not meet its future supply requirements, that significant investments in developing water supply and a transmission system are required; and

WHEREAS Cascade Water Alliance has established a Conservation Goal of saving 1.0 million gallons per day on an annual basis and 1.45 million gallons per day during the peak season by 2014; and

WHEREAS Kirkland represents approximately 14% of the water use of Cascade Water Alliance; and

WHEREAS Cascade Water Alliance has established a mix of programs that will be implemented over the next six years; and

WHEREAS the Kirkland City Council held a Public Hearing on January 2, 2008, for which notice was provided at least two weeks prior to the hearing, at which the public was given an opportunity to participate and provide comment, and the comments were reviewed and considered by the City Council, now, therefore

NOW, THEREFORE, be it resolved by the City Council of the City of Kirkland that the proposed water conservation goals as set forth on Exhibit "A" attached hereto and incorporated by this reference herein are hereby approved and adopted and shall be effective on the date this resolution is adopted.

Passed by majority vote of the Kirkland City Council in open meeting this ____ day of _____, 2008.

Signed in authentication thereof this ____ day of _____, 2008.

MAYOR

Attest:

City Clerk