



CITY OF KIRKLAND
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MEMORANDUM

To: David Ramsay, City Manager

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

Date: October 25, 2007

Subject: WATER USE EFFICIENCY RULE – INTRODUCTION
(RULE REQUIREMENTS AND PROPOSED CONSERVATION GOALS)

RECOMMENDATION:

It is recommended that City Council provide input regarding new Water Use Efficiency Rule requirements and proposed conservation goals. A public hearing will be held and a resolution setting conservation goals will be presented at a subsequent meeting.

BACKGROUND AND DISCUSSION:

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.

The Department of Health developed three elements (Planning Requirements, Distribution Leakage Standard and Goal Setting/Performance Reporting) with the goal of ensuring safe, reliable drinking water by:

1. Contributing to long-term water supply reliability and public health protection;
2. Promoting good stewardship of the state's water resources; and
3. Ensuring efficient operation and management of water systems.

Table 1 following this memorandum provides a summary of WUE requirements, their compliance dates, and how they will impact Kirkland. The Rule imposes water system planning requirements that will need to be incorporated at the next update of the Water Comprehensive Plan in 2013. In addition, the Rule establishes several requirements that take effect independently of the Plan, some of which are already in place in Kirkland. 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. Staff recommends that this occur at the December 11th Council meeting with the required notice being provided in the local newspaper as well as on the City website.

HOW WERE THE CASCADE AND MEMBER GOALS DEVELOPED?

Since 2004, the City of Kirkland has been a member of 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.

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 primarily 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. This would represent a 2.2% reduction from 2006 consumption (see table below), in spite of an estimated 1% per year increase in population. Details of Kirkland's portion of the regional program are shown in the attached table from the Cascade Conservation Program (Table 2-11).

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. 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) 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 full implementation (end of the six year (2008-2013) of the 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 three organizations above have conservation programs in addition to the Cascade program. The City of Kirkland has relied on the regional water provider for conservation services since we were a direct customer to Seattle Public Utilities. We currently do not 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.

Table 1 Water Use Efficiency Rule Impact to the City of Kirkland

Category	Compliance Date	New Requirement	Impact to Kirkland
Data Collection & Demand Forecast	Water System Plans submitted after January 22, 2008.	1. Provide monthly and annual production/purchase numbers for each source.	Monthly data will be provided when Comp Plan is next submitted for approval in 2013 as required.
		2. Provide annual consumption by customer class.	None, Kirkland already meets requirement.
		3. Provide annual quantity supplied to other public water systems .	Will need to be provided when Comp Plan is next submitted for approval in 2013 as required.
		4. Provide " seasonal variations " consumption by customer class.	Will need to be provided when Comp Plan is next submitted for approval in 2013 as required.
		5. Provide demand forecast including all implemented or "cost effective" evaluated measures.	None, Kirkland already meets requirement.
		6. Evaluate reclaimed water opportunities.	Will need to be provided when Comp Plan is next submitted for approval in 2013 as required.
		7. Consider water use efficiency rate structure .	None, Kirkland already meets requirement.
Meters	Fully metered by January 22, 2017. Submit metering plan by July 1, 2008.	1. Meter all sources .	None, Kirkland already meets requirement.
		2. Meter all service connections .	None, Kirkland already meets requirement.
		3. For systems not fully metered : Create meter installation plan, perform activities to minimize leakage until fully metered, and report annually on installation and leak minimization actions.	None, Kirkland already meets requirement.

Category	Compliance Date	New Requirement	Impact to Kirkland
Distribution System Leakage	First report completed by July 1, 2008. First compliance determination made by July 1, 2010.	1. Calculate annual volume and percent using formula defined in the Rule.	None, Kirkland already meets requirement.
		2. Report annually: annual leakage volume, annual leakage percent, and, for systems not fully metered, meter installation progress and leak minimization activities.	
		3. Develop water loss control action plan (if leakage is over 10% for 3 year average).	
Goals	Goals established by January 22, 2008.	1. Establish measurable conservation goals (and re-establish every 6 yrs). Provide schedule for achieving goals. Goals must be in terms of water production or usage.	Staff is recommending goals to be approved at the November 7 th Council meeting and the public process is slated to occur at the December 11 th Council meeting.
		2. Use a public process to establish the goals.	
		3. Report annually on progress.	
Efficiency Program	Water System Plans submitted after January 22, 2008.	1. Describe existing conservation program.	None, Kirkland already meets requirement.
		2. Estimate water saved over last 6 years due to conservation program.	
		3. Describe conservation goals .	Will need to be provided when Comp Plan is next submitted for approval in 2013 as required.
		4. Implement or evaluate 1-12 measures , depending on size.	Recommended conservation goals when approved will meet this requirement.
		5. Describe conservation programs for next 6 years including schedule, budget, and funding mechanism.	Will need to be provided when Comp Plan is next submitted for approval in 2013 as required.
		6. Describe how customers will be educated on efficiency practices.	
		7. Estimate projected water savings from selected measures.	
		8. Describe how efficiency program will be evaluated for effectiveness.	
		9. Estimated leakage from transmission lines (if not included in distribution system leakage).	None, Kirkland already meets requirement.
Performance Reports	First report completed by July 1, 2008.	1. Develop annual report including: goals and progress towards meeting them, total annual production, annual leakage volume and percent, and, for systems not fully metered, status of meter installation and actions taken to minimize leakage.	Kirkland will need to develop this report and its distribution strategy. The first report is due July 1, 2008.

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



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 2-12 - 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)

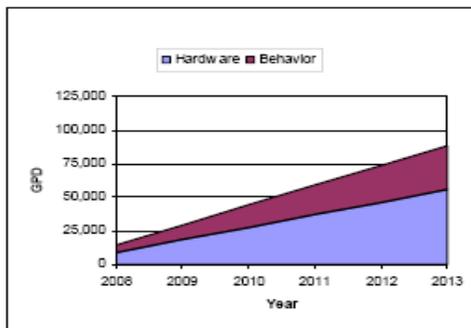


Figure 2-16 – Kirkland Savings (Peak Season Basis)

