Water Use Efficiency Program
Information Packet for 2013 Goal Setting Meeting

The Water Use Efficiency Rule
Background
The State of Washington adopted the Municipal Water Supply-Efficiency Requirements Act, commonly called the Municipal Water Law (MWL) or the Water Use Efficiency Rule in 2007. To meet the requirements of this new rule, the City of Renton developed Water Use Efficiency (WUE) goals, which were approved by the City Council on November 19, 2007.

The MWL is intended to help meet the growing needs of communities, agriculture, industry, and to conserve water for fish. The rule is intended to help:

- Provide more certainty and flexibility for water rights held by water systems.
- Improve the ability to plan for future growth.
- Offer greater flexibility to solve public health problems with water right changes and transfers.
- Advance water use efficiency.
- Assure greater reliability of safe drinking water for communities.

What are the requirements of this rule?
The rule requires municipal water suppliers, such as Renton to use water efficiently and demonstrate that they are doing so. Specifically, water systems must:

- Develop goals through a public process and enact WUE measures to manage water use.
- Reduce water system leakage to 10 percent or less.
- Install meters on all customer connections by 2017 to accurately account for water use and leakage.
- Report annually on their progress in using water efficiently.

How will this affect Renton?
To comply with this rule, we are:

- Conducting a water system audit that will allow us to account for all water used.
- Setting goals for water use efficiency through a public process.
- Re-evaluating our water supply and our forecasts for future water demands.
- Reporting each year on our progress toward these goals as part of the Consumer Confidence Report we send to all customers.

Renton's Water

Water Supply Characteristics

All of our drinking water comes from groundwater. Based on production of the last five years, about 85 percent of our drinking water is supplied by five wells located in downtown Renton, which is pumped from a source known as the Cedar Valley Aquifer. Approximately 14 percent comes from Springbrook Springs, which is located at the south end of the City. These water sources are very clean and need minimal treatment.

The City also pumps from three deep wells known as the Maplewood well field located under the Maplewood golf course. These wells are a backup water source and, as such, are not utilized continuously. The Maplewood water is also very clean, but because of its natural mineral content, it must first be treated before it can be co-mingled with the water from the other sources.

In January 2012, Renton signed a long-term agreement (2012 – 2062) with Seattle Public Utilities to purchase water. This water will assure that the City has a secure supply of water, especially during peak summer usage periods. During the first year of 2012, the City bought 3.1 million gallons of supplemental water from Seattle, which represents 0.01% of the year's water supply.

Water Use Characteristics

The City's customer and water use characteristics are important considerations for identifying WUE objectives, goals and measures.

Who uses the water?

The Renton Water Utility provides water for an estimated population of 62,100 in its retail water service area. The rest of Renton citizens receive water from surrounding water providers. Renton provides water to approximately 15,505 residential customers and 1,917 non-residential (commercial, industrial, government and schools) customers. In 2012, the City's customers used an average of 6,483,012 gallons a day.

As shown in Figure 1, single-family residential customers, who made up 79 percent of total system connections, consumed 35 percent of total retail water sales. The multi-family residential customer class accounted for 10 percent of system connections and 22 percent of water use. Commercial users account for six percent of all system connections and use 18 percent of all water consumed. Industrial customers account for less than one percent of system connections and two percent of water use. While only four percent of the total number of accounts, irrigation use accounted for 13 percent of total water used. Wholesale water to Skyway, SPU water to Boeing, and water consumption at the King County Wastewater Treatment Plant site accounted for roughly eight percent of the City's consumption.

Figure 1.

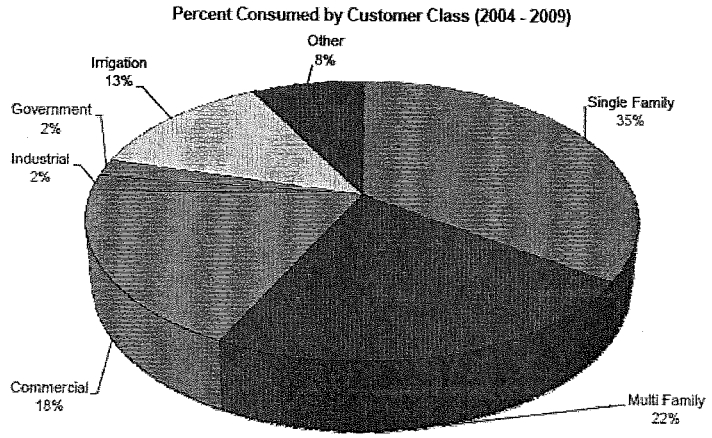


Figure 3.2
Water Consumption Percentage
by Customer Class (2004 to 2009)
Water System Plan Update
City of Renton

When does the water get used?

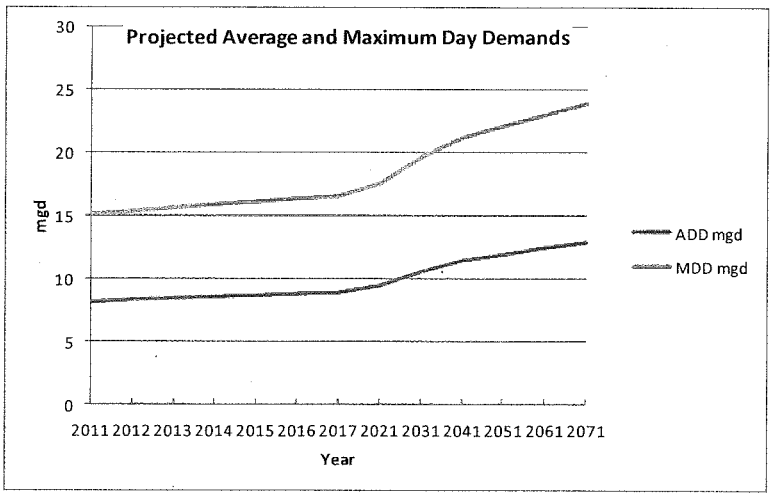
Water consumption is closely related to the weather. Year to year variations reflect drought years, hot years or wet years. The largest variations in water use are seasonal. Typically in Renton, the highest water use is during the period of June through October. During these five months, the average monthly water consumption is about 45 percent higher than the other seven months of the year. The average day consumption in 2012 was 6.48 million gallons. The peak day use in 2012, which occurred on September 7, was 11.46 million gallons. The increased summer consumption is due primarily to irrigation. The current automated meter reading project, that is underway, will allow finer detail about the timing of water consumption.

Water Demand Forecast

The City's future water demand is estimated based on current use and anticipated growth within the Renton Water System Area (RWSA), utilizing data provided in the Puget Sound Regional Council's (PSRC's) Population, Households, and Employment Forecast database.

In general, there is very little vacant land within the City's current RWSA; consequently, the growth capacity within the City's RWSA is limited. The majority of future growth is projected to occur within the Regional Urban Center and the Sunset Area Community Planned Action redevelopment boundaries. Projections of the average and maximum daily demands through 2071 are shown in Figure 2.

Figure 2.



Current Water Use Efficiency Program

Current (2007 – 2013) Goals

Our current, adopted November 19, 2007, Water Use Efficiency goals are:

1) Reduce distribution system leakage (DSL) to ten percent or less by 2010.
2) Cap the peak day demand at 16.5 mgd until 2015.
3) Continue reduction of average annual water use by 0.5 percent per year.

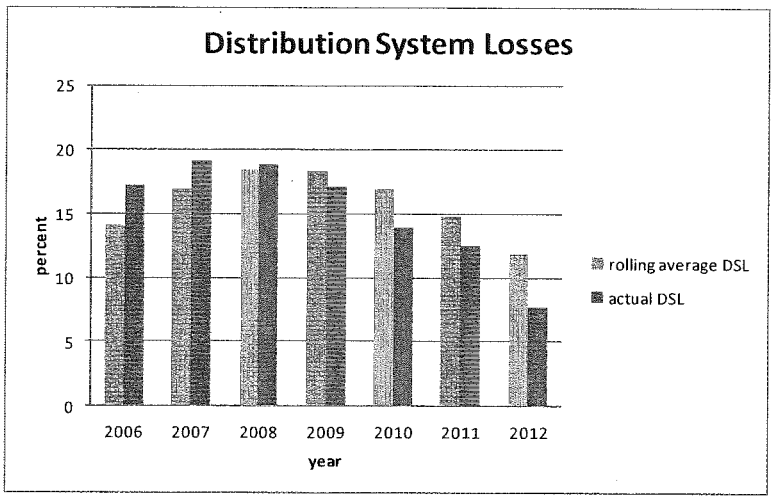
Goal Achievements

1) Our first goal addressed distribution system losses. The Municipal Water Law requires that DSL be 10 percent or less based on a three-year rolling average. If a system's losses exceed this, then it must develop a Water Loss Control Action Plan (WLCAP). Because our DSL in 2007 was above 10%, a WLCAP was developed and began in 2008. The following figure shows the progress that has been made. Our DSL for 2012 was 7.7%, although the three-year rolling average was 11.9%. This reduction was achieved by taking steps to find and eliminate sources of loss which included:

- Conducting an acoustic leak detection survey to pinpoint leaks on an estimated 24 miles of water mains and repaired 10 leaks found on existing water mains.
- Investigating possible leak reports from the automated meter reading program and repairing meter leaks.
- Systematically replacing old, rusty and leaky water pipes to maintain water quality and provide adequate flow for fire protection.

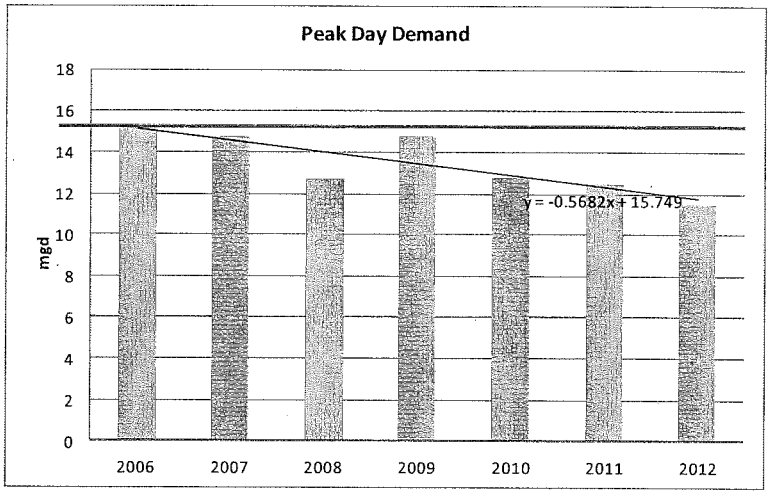
Renton should be in compliance with the three-year rolling average DSL requirement of less than 10%, by the beginning of 2014. Figure 3 shows the steady progress made with the WLCAP.

Figure 3



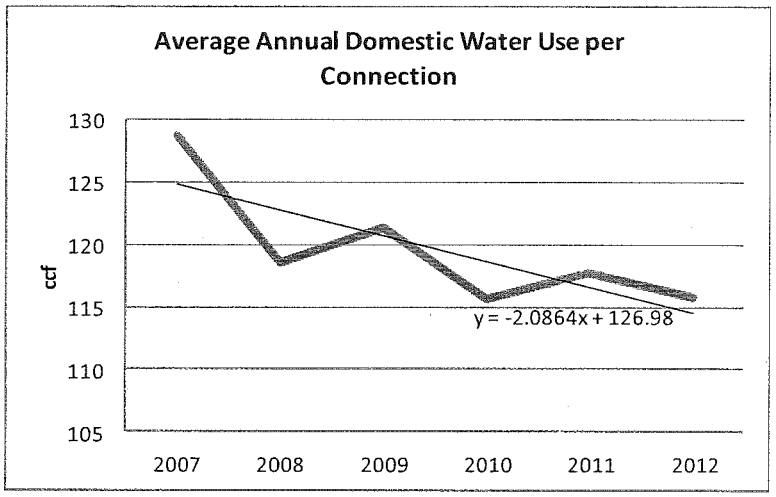
2) Our second goal, which was to limit the peak water day demand to 16.5 million gallons per day (mgd), has been achieved each year. Our highest peak day demand occurred in 2006 and has been on a fairly steady decline, Figure 4. This reduction has been achieved through local and regional education. Promotion of water wise gardening and the five-steps to healthy gardens have been included in newsletters, garden classes offered by Renton Solid Waste, and festivals. Renton has also participated in regional campaigns. Public attitudes, behavior and understanding have moved towards a more water wise perspective. Letting lawns go dormant, planting appropriately for the site, modifying when and how they water, and building healthy soils have all helped reduce summer water consumption.

Figure 4



3) The third WUE goal set in 2007 was to continue the historical trend of reduction in domestic water use per connection by one-half (0.5%) percent per year. Although annual water consumption varies greatly dependent on summer rainfall and temperature, Figure 5 shows that the trend for the average annual domestic water use per connection has been an overall decrease of 176 percent, meeting and exceeding our goal.

Figure 5



The sources of these savings are the result of variety of efforts. Table 1 presents the "hardware" efforts that the City has employed since adopting our current goals in November 2007.

Table 1

Annual Conservation Program Savings					
	Total savings in million gallons/yr				
Hardware/Incentive	**2008**	**2009**	**2010**	**2011**	**2012**
Washing machines	3.05	2.84	2.86	1.38	
Aerators		3.1			0.102
Shower Heads					0.202
Toilets					1.03
Incentives					0.237
Irrigation					0.023
Millions of gallons per year total annual savings from fixtures and incentives					14.82

Proposed 2013 – 2018 Water Use Efficiency Goal

It is proposed that the City of Renton adopt the six-year regional Water Use Efficiency goal: ***"reduce per capita water use from current levels so that the total average annual retail water use of the members of the Saving Water Partnership is less than 105 MGD from 2013 through 2018 despite forecasted population growth."***

A new goal must be adopted every six years, for Renton that means by November 2013. The Saving Water Partnership (SWP) collaborates to set a single regional goal for SWP members. Renton became a member of the SWP in 2012 and has been participating in their programming. The proposed goal will be implemented through targeting of the following six customer program areas with specific measures and actions.

- Communications
- Youth and Community Education
- Landscape
- Landscape Irrigation Efficient Equipment
- Residential Indoor Efficient Equipment
- Industrial, Commercial, and Institutional Efficient Equipment

These targeted customer groups will be addressed with the following nine customer water use efficiency strategies:

- Promote water efficiency among residential, commercial, institutional customers in a fair and cost effective manner using education, training, partnerships, and financial incentives.
- Increase youth participation in water conservation education by assessing what's working well in school districts and expanding it throughout the region.
- Conduct outreach to communities to provide materials and information on leak identification and repair, including multi-language "how-to" videos.
- Provide information and low cost giveaway items for community events, festivals, and customer service counters.
- Explore new options to improve conservation communications, especially with non-English speaking customers.
- Create a seasonal on-line conservation message repository for utility newsletters and other communications.
- Promote changes in behavior that will lead to more water-efficient practices.
- Monitor and encourage a customer ethic that values water conservation.
- Comply with State Water Use Efficiency Rule.

Details of each of these six targeted programs are presented in the 2013-2018 Water Conservation Strategies and Actions document: Preserving the Customer Conservation Ethic: 2013-2018 Regional Water Conservation Strategies and Actions of the Saving Water Partnership. Located at: *http://www.savingwater.org/docs/2013WaterConsProgActionsStrategies.pdf*

Individual programs are presented in Table 2. Current and Proposed Efficiency Activities.

Table 2

Type	Program	Local or Regional	Sector[1]				Ongoing Program	2013-2018 Program
			SF	MF	ICI	Youth		
Education	Classroom presentations delivered by NatureVision	Regional				X		X
	School presentations by request	Local				X	X	
	Fairs and Festivals	Local & Regional	X	X		X	X	X
	Fix leaks videos	Regional	X	X			(X)	X
Landscape	Seasonal messaging	Regional	X					X
	Natural Yard Care workshops	Local	X				X	X
	Savvy Gardener Workshops	Local & Regional	X				(X)	X
	Festival displays and giveaways	Local & Regional						
	Garden Hotline	Regional					(X)	X
	Brochures	Local & Regional					X	X
Irrigation	Irrigation professional classes	Regional		X	X			X
	Automatic irrigation systems scheduling tools	Regional	X	X	X		(X)	X
	Irrigation audit	Regional		X	X		(X)	X
Residential Indoor	Water bill consumption history	Local	X	X	X		X	X
	Toilet leak detection tablets	Local & Regional	X	X	X		X	X
	Toilet rebates	Regional	X	X	X		(X)	X
	Low-flow shower heads	Regional	X	X				X
ICI	Commercial laundry machine rebate	Regional		X	X		(X)	X
	Commercial kitchen rebates	Regional			X		(X)	X
	Cooling and Refrigeration Systems	Regional			X		(X)	XX
	Medical Equipment	Regional			X		(X)	X
	Process Water Improvements	Regional			X		(X)	X
	Other Smart Water Use Technologies	Regional			X		(X)	X

Footnotes: 1) SF = single family; MF = multi-family; ICI = industrial commercial and institutional; Youth relates to school based
2) (X) means ongoing since Renton joined Water Saving Partnership in 2012