WATER USE EFFICIENCY PROGRAM

INTRODUCTION

The City of Snohomish (City) recognizes that water is a valuable and essential natural resource that needs to be used wisely. This Water Use Efficiency (WUE) Program provides an approach to increase water use efficiency within the City's water service area and to support the regional goals developed by the City of Everett's (Everett) Conservation Program.

BACKGROUND

THE WATER USE EFFICIENCY RULE

In September 2003, the Washington State Legislature passed the Municipal Water Supply – Efficiency Requirements Act, also known as the Municipal Water Law. The Municipal Water Law required the state to implement the WUE Rule. The intent of this rule is to help reduce the demand that growing communities, agriculture, and industry have placed on our State's water resources, and to better manage these resources for fish and other wildlife. Municipal water suppliers are obligated under the WUE Rule to enhance the efficient use of water by the system and/or its consumers.

The WUE Rule applies to all municipal water suppliers and requires suppliers to:

- Develop WUE goals through a public process and report annually on their performance;
- Maintain distribution system leakage (DSL) at or below 10 percent of production;
- Meter all existing and new service connections;
- Collect production and consumption data, calculate DSL, and forecast demands;
- Evaluate WUE measures; and
- Implement a WUE program.

WATER USE EFFICIENCY PROGRAM REQUIREMENTS

The *Water Use Efficiency Guidebook*, originally published by the Washington State Department of Health (DOH) in July 2007 and revised in January 2009, January 2011, and January 2017, identifies the water use reporting, forecasting, and efficiency program requirements for public water systems. A WUE program meeting these requirements is a necessary element of a water system plan (WSP) as required by DOH and is necessary to obtain water right permits from the Washington State Department of Ecology (Ecology). The *Water Use Efficiency Guidebook* defines the necessary components of a WUE program as the following four fundamental elements.

1. Planning requirements that include collecting data, forecasting demand, evaluating WUE measures, calculating DSL, and implementing a WUE program to meet goals.
2. A DSL standard of 10 percent or less based on a 3-year rolling average for systems with more than 500 connections.

3. Goal setting to provide a benchmark for achievement and to help define the success of the WUE program.
4. Annual performance reporting on progress towards meeting WUE goals.

EVERETT WATER UTILITIES COMMITTEE

The City is a wholesale water customer of Everett and a member of the Everett Water Utilities Committee (EWUC). The EWUC and Everett develop a regional water conservation program that is documented in Everett's WSP and updated on a 6-year cycle (it is anticipated that this will change to a 10-year cycle after the next update). The last update to the program was in 2014. Historically, the City's WUE Program has been based on the regional goals and efforts of the EWUC.

WATER USE EFFICIENCY PROGRAM

As previously described, the fundamental elements of a WUE program include planning requirements and DSL standards, as well as goal setting and performance reporting. The City's water use data, demand forecasts, and other planning requirements are contained in **Chapter 4** of its WSP. The City is committed to continue collecting water use data beyond that presented in **Chapter 4** for evaluation of its WUE Program and water use patterns, and for forecasting demands for future facility requirements. The City's WUE Program that follows includes a statement of its goals and objectives, the evaluation and selection of alternative efficiency measures, the schedule and budget, and the method of program monitoring.

WATER USE EFFICIENCY GOALS AND THE PUBLIC PROCESS

Per Washington Administrative Code (WAC) 246-290-830, WUE goals must be set through a public process and shall be evaluated and re-established as part of developing or updating a WSP. In compliance with the WUE Rule, public hearings were held on November 21, 2014 to present and discuss goals. Background on the City's WUE Program, water supply characteristics, water demand forecasts, and other elements were made available 2 weeks prior to the public forum date. All comments received at the forum were reviewed and considered by the City. The City's current WUE goals were adopted by the City in 2014. WUE goals will be evaluated and re-established when Everett's updated conservation program is made available.

In 2014, the City purchased 1.47 percent of Everett's total production, and adopted an equivalent percentage of the regional goal. The City's goal is thus to save 17,493 gallons per day (gpd) on an annual basis at full implementation of the 6-year program (2019).

The City will achieve these goals and objectives through the implementation of the WUE Program that follows.

EVALUATION AND SELECTION OF WATER USE EFFICIENCY MEASURES

The City's evaluation of WUE measures and selected levels of implementation are presented within this section. The measures fall within three categories of implementation: 1) mandatory measures that must be implemented; 2) measures that must be evaluated; and 3) additional measures selected by the City that must be either evaluated or implemented.

The City served an average of 3,323 water service connections in 2016. Based on the number of connections, at least six WUE measures must be evaluated or implemented. Measures that are mandatory cannot be credited towards the system's WUE measures. Since the City implements the minimum number of required measures, a cost-effective evaluation is not required.

Mandatory Measures

Source Meters

The volume of water produced by the system's sources must be measured using a source meter or other meter installed upstream of the distribution system. Source meters currently are installed and operating at each intertie along Everett's Transmission Line No. 5. If any new interties are installed or activated in the future, they will be equipped with a source meter.

Service Meters

All public water systems that supply water for municipal purposes must install individual service meters for all water users. Service meters are currently installed and operating at all connections throughout the distribution system. All future connections that are installed or activated will be equipped with a service meter.

Meter Calibration

The City must calibrate and maintain meters based on generally accepted industry standards and manufacturer information. Compliance will be maintained by the City by performing maintenance on the source and service meters every 5 to 10 years at a minimum. Meter calibration verification testing is performed on an as-needed basis, typically annually.

Water Loss Control Action Plan

To control leakage, systems that do not meet the DSL standard must implement a Water Loss Control Action Plan (WLCAP). The City must implement a WLCAP since the rolling 3-year average DSL was 14.6 percent in 2016. It is known that there are leaks in the Water Treatment Plant (WTP) Transmission Main that are likely contributing to this high DSL rate. Since the Water Treatment Plant is no longer in service as of 2017, and the transmission main is no longer conveying primary water supply to the system, it is expected that DSL will be greatly reduced in future years.

In addition, the City will increase recordkeeping and estimating of authorized water consumption, such as construction, water main flushing, and firefighting activities, to minimize DSL. The system's oldest water mains and those with a history of continued maintenance or breaks have been identified for replacement as part of the City's Capital Improvement Program, shown in **Chapter 9** of the WSP. It is anticipated that the 2016 DSL of 14.6 percent can be reduced to less than 10 percent through these improved recordkeeping practices and replacement of the City's aging water main.

Customer Education

Annual customer education regarding the importance of using water efficiently is a required element of all WUE programs. Customer education is provided in the City's annual Consumer Confidence Report (CCR) to customers and includes information on the system's DSL, progress

towards meeting WUE goals, and tips for customers on using water more efficiently. A copy of the City's 2017 CCR is contained in **Appendix K**.

Measures That Must Be Evaluated

Rate Structure

A rate structure that encourages WUE and provides economic incentives to conserve water must be evaluated, but is not required to be implemented. The City's current utility rates are designed to encourage water conservation through uniform block rates. The water rates are set so that customers that use over 400 cubic feet in a 2 month billing cycle are billed an additional $4.89 for every 100 cubic feet of water consumed in excess of 400 cubic feet. Additionally, all customers are charged an increased sewer rate for water consumption beyond 400 cubic feet. The City will consider implementing inclining block rates or seasonal rates to further encourage WUE.

Reclamation Opportunities

The City has evaluated reclamation opportunities but has determined that reuse opportunities will not be beneficial because the cost to construct improvements to the existing wastewater treatment plant and separate conveyance systems is much more than the financial savings resulting from the potential water savings.

The City's wastewater treatment plant does not treat wastewater to a level that can be used for reclaimed purposes. Significant upgrades to the wastewater treatment plant and the installation of purple pipe would be necessary to provide reclaimed water to customers. The City's highest water users consist of businesses such as a rehabilitation center, a mill, food processing plants, and grocery stores that rely on potable water and likely would not purchase reclaimed water. Customers that could utilize reclaimed water include large irrigators such as parks, schools, and cemeteries.

Selected Measures

The City has chosen to implement four different WUE measures, many of which are existing measures. For the purposes of water system planning in this WSP, the City's billing classes have been combined into seven different groups: single-family residential; multi-family residential; mixed use; commercial; wholesale; irrigation; and other. The "other" user group consists of City accounts, the school district, and accounts serving parks/open space. If a single WUE measure is implemented for different customer classes, it counts as multiple WUE measures. Multiplying the four different WUE measures across the customer classes in which they will be implemented, the City will implement a total of 23 WUE measures. This exceeds the requirement of six WUE measures based on the number of service connections.

Additional Customer Education/Outreach

Customer education is provided through school outreach activities involving classroom presentations, teacher workshops, and classroom educational materials. Additional education is provided on the City's website and in educational brochures that are available at City Hall and local events such as the Kla Ha Ya Days Festival and seasonal farmers markets. The City will continue to educate customers throughout each year as described in this program. Additional

advertising efforts will be made throughout the retail water service area to promote the water conservation workshops sponsored by the EWUC. Since this measure will continue to be implemented for all customer classes, it counts as seven WUE measures for the City's program.

Meter Reading Notification

The City will continue to notify customers in all customer classes of meter readings that are inconsistent with the customer's consumption history. Since this measure will continue to be implemented for all customer classes, it counts as seven WUE measures for the City's program.

Indoor and Outdoor Conservation Kits

The City will continue to offer free indoor and outdoor conservation kits to all customers within the retail water service area. These kits include a water efficient shower head, two faucet aerators (bathroom), a dual spray swivel faucet aerator (kitchen), Teflon tape, an outdoor hose nozzle, a moisture meter, and a lawn watering timer. Additional advertising efforts will be made to promote the availability of these kits, including placing notices in utility bills, adding links on the City website, and displaying the kits at public events. Since this measure will continue to be implemented for all customer classes, it counts as seven WUE measures for the City's program.

Lawn Watering Calendars

The City will continue to distribute voluntary lawn watering calendars annually. Since this measure will continue to be implemented for single- and multi-family residential customer classes, it counts as two WUE measures for the City's program.

WATER USE EFFICIENCY PROGRAM SCHEDULE AND BUDGET

The WUE measures described previously and selected for implementation by the City are summarized in **Table 1** with their corresponding schedule and budget. The successful implementation of this WUE Program is expected to meet the goals and objectives of this program, as shown in **Chart 1**.

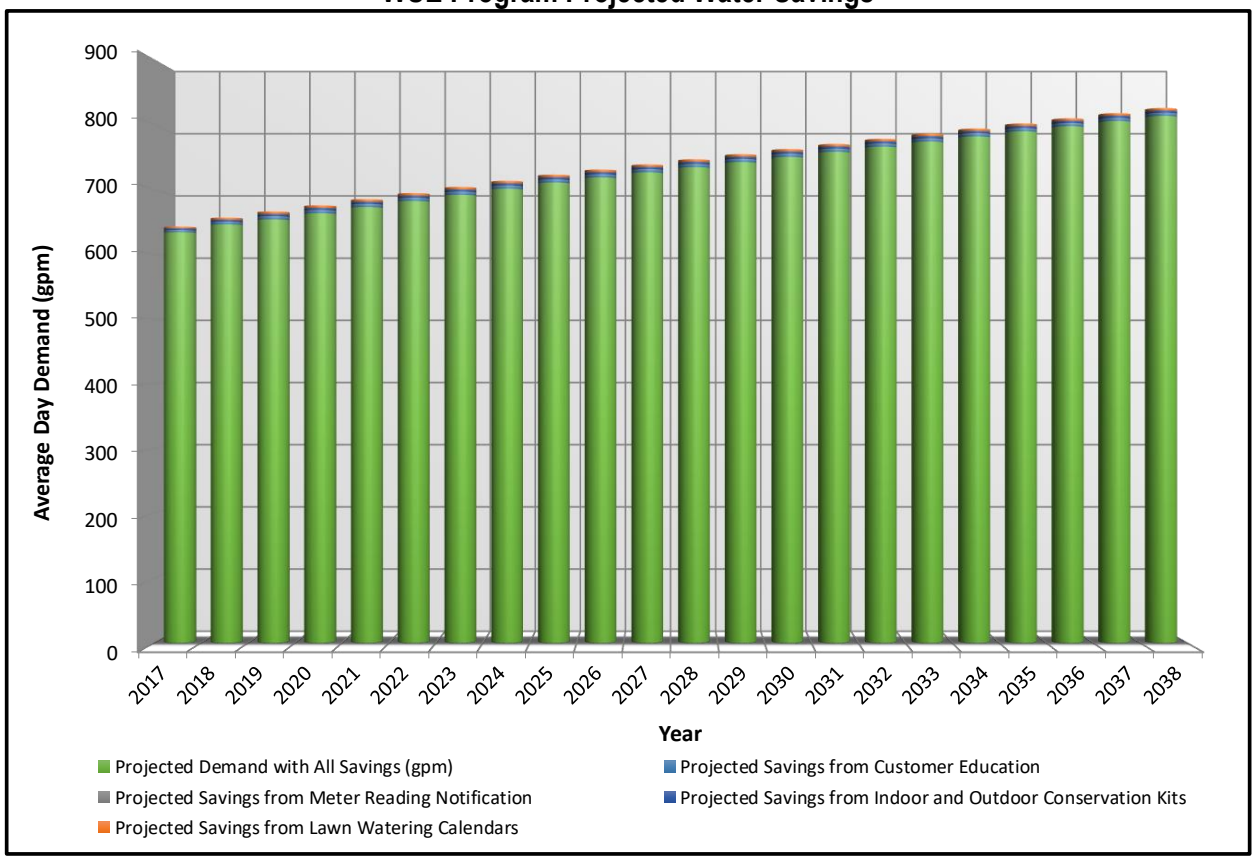
Table 1
WUE Program Schedule and Budget

WUE Measure	Schedule	Budget Amount
Mandatory Measures		
Source Meters	Ongoing	O&M Funded
Service Meters	Ongoing	O&M Funded
Meter Calibration	Ongoing	O&M Funded
Water Loss Control Action Plan	Ongoing	Annual Water Main Replacement Program (WSP Chapter 9)
Customer Education	Ongoing	$1,000/yr
Measures That Must Be Evaluated		
Rate Structure	Ongoing	In Place
Reclamation Opportunities	N/A	N/A
Selected Measures		
Additional Customer Education/Outreach	Ongoing	In Place/Regional Program
Meter Reading Notification	Ongoing	In Place
Indoor and Outdoor Conservation Kits	Ongoing	$2,000/yr
Lawn Watering Calendars	Ongoing	$500/yr

O&M = Operations and Maintenance

Chart 1

WUE Program Projected Water Savings



WATER USE EFFICIENCY PROGRAM EVALUATION AND REPORTING

The City will continue to evaluate overall demand, per capita and per equivalent residential unit water use, and the amount of DSL on an annual basis. The City will evaluate the performance of its WUE Program and implemented measures by analyzing demand data and determining the long-term trend towards reducing water usage and meeting WUE goals. Source meter records will be reviewed on an annual basis to determine the effectiveness of each of the implemented WUE measures and to determine if the estimated water savings are being met. If the program monitoring shows that progress towards meeting the WUE goals is not being accomplished, more rigorous program implementation or additional program items will be considered, along with a cost-effective evaluation of measures.

The City will continue to provide annual WUE performance reports to its consumers in the CCR, and will detail the results of water use monitoring and progress towards achieving the system's WUE goals. A copy of the City's current CCR is included in **Appendix K** of the City's WSP.