

## Appendix F

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# Water Use Efficiency Program

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# WATER USE EFFICIENCY PROGRAM

## INTRODUCTION

The City of Woodland (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.

## 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 the WUE goals.

## Water Supply Characteristics

Water in the City's system is currently supplied by one City-owned source, the Ranney Collector Well as shown in **Table 1**. A more detailed description of the source of supply is provided in **Chapter 2** of the City's WSP.

**Table 1**  
**Supply Facilities Summary**

Facility	Pressure Zone	Year Installed	Existing Capacity (gpm)	Pump Type	Pump Motor Size (hp)	Water Treatment
Ranney Collector Well	179 Zone	1968	2,100	(3) Vertical Turbine	(3) 100	Oxidation, Filtration, Fluoridation, Corrosion Control pH Adjustment, Disinfection

The City currently holds one surface water certificate (SWC), one ground water certificate (GWC), and one ground water permit. A summary of these water rights is presented in **Table 2**. Additional water rights information for each source may be found in **Chapter 6** of the WSP, and on the certificates, permits, and water rights self-assessment that are included in **Appendix I**.

**Table 2**  
**Existing Water Rights**

Water Right	Priority Date	Document	Source Name	Instantaneous Rate (gpm)		Annual Volume (afy)	
				Additive	Non-additive	Additive	Non-additive
SWC 9985	8/5/1966	Certificate	Lewis River	1,248	0	756	0
GWC 6595-A	11/8/1967	Certificate	Ranney Well	152	1,248	0	756
G2-29241P	6/17/1995	Permit	Ranney Well	1,400	0	1,430	0
<b>Total</b>				<b>2,800</b>	<b>gpm</b>	<b>2,186</b>	<b>afy</b>

Notes:

SWC 9985 authorizes 2.78 cubic feet per second, which is equal to 1,248 gallons per minute (gpm), as shown in this table.

The annual volume under SWC 9985 and GWC 6595-A is limited to 756 acre-feet per year (afy).

The instantaneous rate under all three water rights is identified as 2,800 gpm under G2-29241P report of examination.

Development schedule under G2-29241P has been extended and requires completion of construction by January 1, 2021.

## 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

this 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, a public hearing will be held to present and discuss goals. Background on the City's WUE Program, water supply characteristics, water demand forecasts, and other elements will be made available 2 weeks prior to the public forum date. All comments received at the forum will be reviewed and considered by the City. The City's current WUE goals will be adopted by the City in 2020. The new WUE goals are as follows:

- Reduce the average day demand per equivalent residential unit (ERU<sub>ADD</sub>) by 10 gallons per day (gpd) over the course of the planning period (2020 to 2040).
- Maintain system-wide DSL at 10 percent or less for the duration of the planning period.

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 2,169 water service connections in 2018. 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 metering is currently achieved at the Water Treatment Plant by measuring and adding decant to the reservoir volume and the waste volume to the lagoons. There are currently no source interties to 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. The City's Utilities Department monitors usage and compiles a list of unusual usage and Public Works investigates. Meters are calibrated and/or replaced as needed.

### *Water Loss Control Action Plan*

The City has been below the standard DSL (10 percent or less loss) for several years; therefore, there is not a formal Water Loss Control Action Plan. However, as leaks are detected, they are repaired based on water loss and priority.

The City keeps records estimating the amount of authorized water consumption, such as construction, water main flushing, hydrant testing, and firefighting activities, to minimize DSL. The system's older water reservoir (0.5 million gallons) has been identified for repair and eventual replacement as part of the City's Capital Improvement Program, shown in **Chapter 9** of the WSP.

### *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 2019 CCR is contained in **Appendix L**.

## *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 base charge plus usage. There is zero usage volume included in the base charge; all consumption is charged.

### *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 distribution pipe would be necessary to provide reclaimed water to customers. The City's highest water users consist of businesses such as a seafood processing plants, agriculture, and industrial, as well as some commercial and residential mobile home parks 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 and they are not the City's highest consumers.

### *Selected Measures*

The City has chosen to implement two different WUE measures, which are existing measures. For the purposes of system planning in this WSP, the City's billing classes have been combined into eight different groups: Single-Family Residential; Multi-Family Residential; Motel; Mobile/RV Park; Commercial; City; Churches and Schools; and Other. If a single WUE measure is implemented for different customer classes, it counts as multiple WUE measures. Multiplying the two different WUE measures across the customer classes in which they will be implemented, the City will implement a total of 16 WUE measures. This exceeds the requirement of six WUE measures based on the number of service connections.

### *Additional Customer Education/Outreach*

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 Planters Day Festival and seasonal farmers markets. The City will continue to educate customers throughout each year as described in this program. Since this measure will continue to be implemented for all customer classes, it counts as eight 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 eight 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 3** 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**.

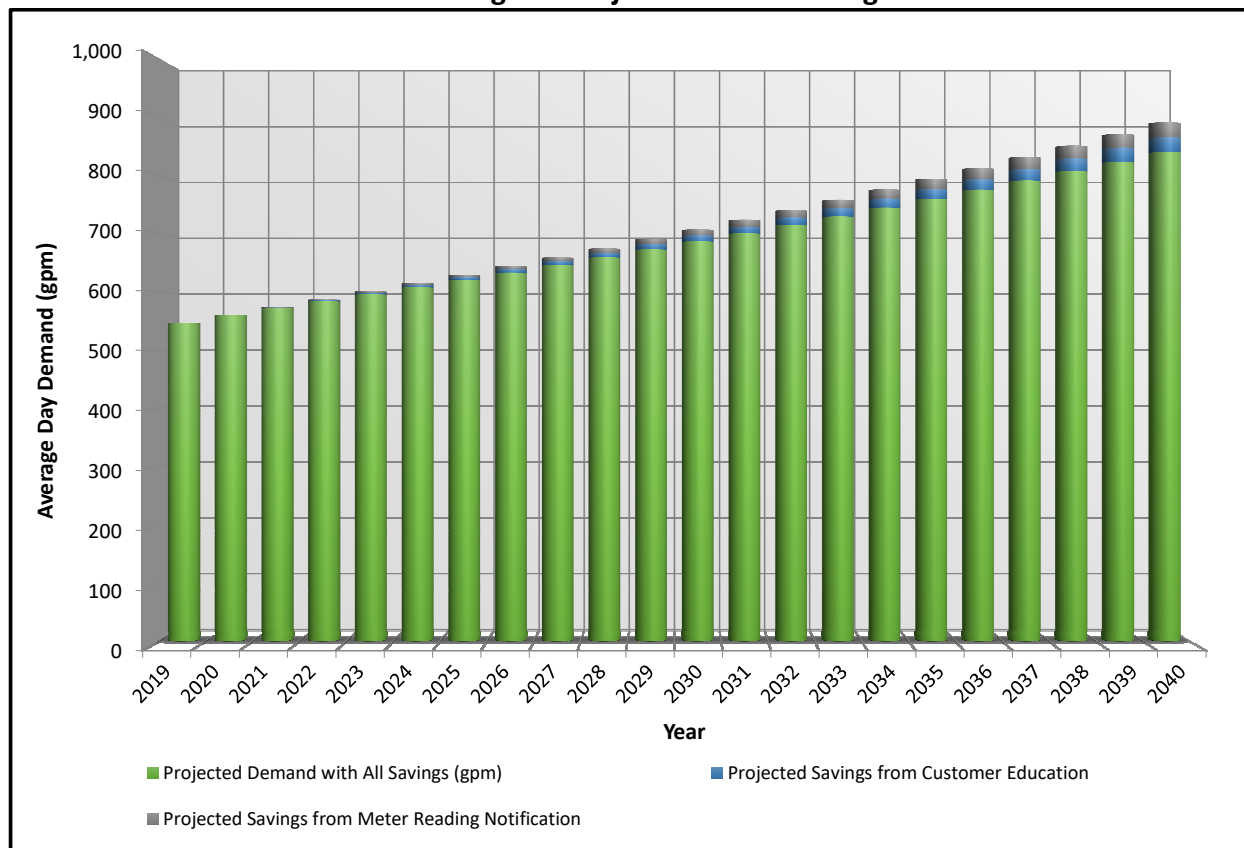
**Table 3**  
**WUE Program Schedule and Budget**

Mandatory WUE Measures		
Measure	Schedule	Budget
Source Meters Installed	Ongoing	O&M Funded
Service Meters Installed	Ongoing	O&M Funded
Meter Calibration Compliance	Ongoing	O&M Funded
Water Loss Action Control Plan	Ongoing	Repair/Replace 0.5 MG Reservoir
Customer Education	Ongoing	\$100
WUE Measures That Must Be Evaluated		
Measure	Schedule	Budget
Rate Structure	Ongoing	In Place
Reclamation Opportunities	Ongoing	N/A
Selected WUE Measures		
Measure	Schedule	Budget
Additional Customer Education	Ongoing	\$100
Meter Reading Notification	Ongoing	In Place

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 2019 CCR is included in **Appendix L** of the City's WSP.

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