

Clark Public Utilities Water Use Efficiency Program

May 2024

Introduction

In 2003, the Washington State Legislature passed Engrossed Second Substitute House Bill 1338, also known as the Municipal Water Law, to address the increasing demand on the state's water resources. The law calls for all municipal water suppliers to use water more efficiently in exchange for water right certainty in meeting future demand for the resource. The legislature directed the Washington Department of Health to adopt an enforceable water use efficiency program. The program, which became effective on January 22, 2007, is designed to ensure the long-term supply of drinking water, promote good stewardship of the water resources and ensure efficient operation and management of water systems.

The water use efficiency rule affects all municipal water suppliers, which includes all Group A community water systems with 15 or more residential connections and some non-community water systems that use water in a residential manner (RCW 90.03.015). Clark Public Utilities is a municipal water supplier and, therefore must develop a water use efficiency program, which is consistent with WAC 246-290-800(2), and integrate this program into its Water System Plan (WSP). The program must include water conservation goals and measures that will be undertaken to achieve these goals. It must provide for data collection and analysis intended to track water consumption and water loss from leaks in the system. The program must evaluate alternative rate structures and determine the feasibility of adopting a structure that will encourage water conservation. The following report, which generally conforms to the format suggested in the Water Use Efficiency Guidebook DOH Publication No. 331-375, describes Clark Public Utilities' Water Use Efficiency Program.

1. General Description of Clark Public Utilities and its Water System

Clark Public Utilities (Clark) is a customer owned utility providing electric and water service in Clark County, Washington. It is a municipal corporation organized under the laws of the state of Washington. It was formed by a vote of the people in 1938.

Clark's water utility began operating in 1951. At that time the water system was serving primarily the Hazel Dell area located immediately north of Vancouver. Over the years the utility's operation has expanded greatly within the county. Today the utility's water service area embraces over 250 square miles and includes urban, suburban and rural areas of the county, including two incorporated areas, the City of La Center and the Town of Yacolt. Clark provides water service to about 105,000 customers through about 40,500 customer accounts

or approximately 48,000 *equivalent residential units* (an ERU is assigned to each residential account, all other customer accounts are based upon the size of the service meter).

Clark Public Utilities produces water exclusively from groundwater sources. The utility currently owns and operates 32 active wells with a total pumping capacity of 51 million gallons per day, 31 reservoirs, 52 booster stations and approximately 855 miles of water distribution lines. Weather and economic conditions are the primary determinates of water sales.

Single and multiple family residences represent over 70 percent of the utility's water customers. The average equivalent residential unit consumes approximately 14,088 cubic feet or 105,381 gallons of water annually, approximately a 25% reduction in residential demand since the plans implementation. Warm and dry weather typically results in high water sales to residential customers, while cool, wet weather results in lower sales to these customers.

Details about the water system—e.g., water production capacity, seasonal variability in water consumption, water rights, water demand forecasts—are presented in the utilities' most recent Water System Plan.

2. Existing Water Conservation Program

Clark Public Utilities' existing water conservation program is described in its current Water System Plan. The overarching goal of the program is to promote efficient use of water resources. The program addresses supply- and demand-side conservation measures to advance water conservation.

Supply-Side Water Conservation Measures

Supply-side water conservation efforts are closely associated with the proper management of the water system. These conservation measures are continually refined. All sources of water and all service connections are metered. A state of the art telemetry system is employed to monitor the water system. Meters, water mains, supply wells, reservoirs, booster stations, pressure reducing valves and hydrants among other water facilities have been and continue to be regularly inspected, tested and maintained; and these and other facilities are repaired and replaced as necessary. These and other conservation measures are continually refined.

Demand-Side Water Conservation Measures

The core elements of the program follow:

- Leak abatement—toilet and faucet leak detection, and water pressure examinations.
- Installation of low-flow showerheads, devices to reduce the amount of water used to flush toilets, and faucet aerators to reduce water flow.
- Strategic customer outreach and engagement through utility communication channels, event marketing and community partnerships to promote smart water use including best practices for water conservation, smart use of landscape irrigation systems, household water leak detection and more.

3. *Water Use Efficiency Goals*

An overarching, long-term water conservation goal laid out in the Water System Plan is to promote conservation among residents of the county. One of the primary drivers of this goal demand reduction in residential use, which is the customer class that consumes about 70 percent of the water supplied to the system.

It is the utility's intent to discuss the following goals with the Clark Public Utilities Board of Commissioners during public meetings and request adoption by the Board on or before June 30th, 2024.

Supply-Side Water Conservation Goal

- Maintain annual leakage goal from the water distribution system at eight and one-half percent or less over the next six years.

Demand-Side Water Conservation Goal

- Reduce the average equivalent residential unit annual water consumption by at least one percent within six years.

4. Existing & Future Water Use Efficiency Measures

Clark Public Utilities is advancing water conservation measures mandated under WAC 246-290-466 (1) (2) (3). Appropriately calibrated meters are in place at all water supply sources and service connections. Meter data is assembled in a database and analyzed to determine trends in water usage and account for the water in the system by comparing supply volume with service volume. Utility customers are consistently encouraged to use water wisely. The following existing and new measures will be undertaken to achieve water use efficiency goals.

Supply-Side Water Conservation Goal: Maintain annual leakage from the water distribution system at eight and one-half percent or less.

- Utilize contractors using the latest technology to detect mainline leaks.
- Improve recording/tracking of mainline flushing and new construction flushing.
- Record end line flushing and main/service leaks.
- Convert all water meters to AMR and change from bi monthly to monthly readings.
- Test and verify accurate supply well metering.
- Continue to work with, encourage, and educate local fire districts to meter or otherwise measure the amount of water used in training exercises, hydrant testing and firefighting.
- Record and document process water from water production including wash down and backwash water that is discharged from water treatment facilities.
- Continue to replace deteriorating water mains.
- Continue to repair leaks found in the water system.
- Continue to conduct water distribution system audits.
- Actively pursue water theft from system related to inappropriate meter and connection.

Use incentives and policies where applicable to reduce unauthorized water use.

- Regular inspection, testing and repair of water facilities.

Demand-Side Water Conservation Goal: Reduce the average equivalent residential unit annual water consumption by at least one percent within six years.

- Continue inclined block rate schedule to reduce summer demand for water consumed by all customer classes. This method of pricing involves applying a higher charge for water once the amount consumed exceeds certain thresholds, depending upon the size of the meter and the customer class.
- Continue to post on-bill comparisons of current and past water consumption by billing period.
- Targeted customer engagement to promote wise water use and conservation.
- Leak abatement program.

5. *Water Use Efficiency Customer Engagement*

Water conservation is a seasonal public outreach topic several times a year with information provided to customers through a variety of traditional, digital and experiential marketing and communications channel including direct mail, paid advertising, earned media and community engagement events.

6. *Distribution System Leakage Evaluation*

Clark Public Utilities accounts for water within its system by examining supply well and service meter data, and tracking the use of water for non-revenue producing purposes (e.g., water system maintenance and firefighting) and, thereby, determines how much water is lost from leaks in the water system and unauthorized use of water. Unaccounted for loss of water averages about eight percent annually. The utility will continue to conduct water audits and calculate water loss in rolling three-year periods, to determine whether the average percentage of water loss is above or below the 10 percent standard. If the average exceeds this standard, the utility will adjust the leakage control action plan accordingly.

7. Water Rate Structure Evaluation

Prior to 2008, Clark Public Utilities had a flat water rate structure, i.e., a fixed rate for all classes of customers regardless of how much water they consumed. One-time service connection fees and system development charges are also assessed based upon the customer class and meter size, which enables the utility to recover some of the cost of providing water to a growing customer base. However, even with the additional one-time charges, the flat rate applied to water consumed did not equitably recover the cost of providing water during peak demand periods, a time when water consumption can reach three times the annual average consumption by all customers. Moreover, the flat rate did not provide incentive to conserve water.

The residential customer class accounts for approximately 70 percent of water consumption in our system. Average monthly residential water consumption is approximately 1,030 cubic feet. Average monthly production during peak demand periods can be three times average demand periods. In order to meet production for all customers, it costs the utility roughly 60 percent more to provide water during high demand months than the low demand months. The block rate was set to correspond closely to average residential usage (1,200 cu. ft.) multiplied by the peaking factor (3) for high demand production. This data established the block usage of 3,600 cu. ft. per month for a residential customer or one ERU. For non-residential customer classes, meter sizes were assigned an ERU multiplier based on the ratio between the area of the actual meter requested and the area of a 5/8" diameter meter, which was used as the base meter. The rate for water consumed over the block was given a multiplier of 60 percent over the current rate.

Recognizing the drawbacks of the flat rate structure in recovering the cost of providing water to customers and its disincentive for customers to conserve water, Clark Public Utilities adopted an inclined block water rate that customer class and meter size into account. It is a tiered rate that reflects the increased cost of supplying water to the system during the peak demand periods, when demand for water is typically three times the average over the year. When a customer uses more than the amount of water allotted under its block, the rate increases by 60 percent—from \$1.38 to \$2.21. This new rate structure was adopted by the Clark Public Utilities Board of Commissions and became effective, January 1, 2008. In 2009 the rate structure changed again, increasing 16% to \$1.60 and adding an intermediate block

from 1,801 cubic feet to 3,600 cubic feet of \$2.08 per 100 cubic feet. The third block increased to of \$2.56 (60% greater than block 1) at 3,601 cubic feet and higher. In 2012 the rates increased again keeping the same three blocks or tiers. Those rates per 100 cubic feet were \$1.85, \$2.40, and \$2.95 respectively and are Clark Public Utilities current rates. In 2024 a cost of service analysis is planned to review services and rates

8. *Projected Water Savings Estimate*

Average per capita water use has declined by approximately 25 percent since the inception of the utility's water conservation program in 1993. That Water System Plan identified the gallons per capita day (gpcd) used for demand projections as 128 gpcd. In 2006 the average daily demand was 111 gpcd for residential customers, and today in 2024 the per capita water use is 93 gpcd.

9. *Reclaimed Water Opportunities*

Clark continues to explore water reuse opportunities, particularly those involving reclaiming high quality effluent from upgraded wastewater treatment facilities, consistent with WAC 246-290-100 (4) (f) (vii).

10. *Water Use Efficiency Program Evaluation*

Clark Public Utilities will complete Performance Report DOH Form No. 331-376 annually. The report will include information about total water production, water system loss through leakage and water savings targets achievements stated in the water use efficiency goals. The report will be submitted to the Washington State Dept of Health by July 1 of each year. Progress toward meeting Water Use Efficiency Goals will also be provided to customers in the annual Consumer Confidence Report mailed by July 1st of each year.