

5. WATER USE EFFICIENCY PROGRAM

This chapter summarizes the Utility's current and proposed actions to comply with conservation planning requirements and to promote water efficiency. The discussion of current actions includes an assessment of the Utility's compliance for the period between 2011 through 2014.

5.1 WATER USE EFFICIENCY PROGRAM

Water is a limited resource. Drinking water competes with other uses such as agriculture, industry, recreation and habitat requirements so the implementation of water efficiency programs by public water systems help ensure a safe and reliable supply of drinking water.

Water conservation also helps prevent potential health and sanitation risks. Water conservation is defined to be any beneficial reduction in water losses, waste and use. These beneficial reductions in turn will contribute to long-term reliability of our water supply, prevent public health risks, and offer cost savings by protection against:

- Temporary water service interruptions during peak usage.
- Long-term or repeated water disruptions due to limited water supply.
- Contamination of the water supply due to leaky pipes.

Other benefits of water conservation are associated with efficiency. By reducing the amount of treated water, water systems can reduce energy use, amounts of treatment materials and other associated operation costs.

5.2 COMPLIANCE WITH WUE REQUIREMENTS

The conservation planning requirements that must be addressed in water system plans are contained in the following information sources:

- State of Washington Water Use Efficiency Rule (January 2007)
- DOH Water Use Efficiency Guidebook (January 2011)

There are seven categories of requirements: 1) meters; 2) data collection; 3) demand forecast; 4) efficiency program; 5) distribution system leakage; 6) goals; and 7) performance reports. Table 5.1 summarizes the requirements and shows Lewis County is in compliance with these requirements.

TABLE 5.1 – COMPLIANCE WITH WATER USE EFFICIENCY RULE REQUIREMENTS		
CATEGORY	REQUIREMENT	LEWIS COUNTY COMPLIANCE STATUS
Meters	1. Meter all sources.	Yes, all sources are metered.
	2. Meter all service connections.	Yes, all service connections are metered.
Data Collection	1. Provide annual consumption.	Yes, provided in Section 3.5.4.
	2. Provide annual total for each customer class.	
	3. Water supply characteristics.	Yes, provided in Section 2.5.4 and Chapter 6.
Demand Forecasting	1. Population	Yes, provided in Section 3.4.
	2. Current land use, zoning and capacity.	Yes, provided in Section 3.3.
	3. Projected water use efficiency savings.	Yes, provided in Section 3.6.
	4. Forecast demand for 6-year and 20-year projections with no conservation.	Yes, provided in Section 3.6.2.
	5. Forecast demand for 6-year and 20-year projections with conservation savings.	
Efficiency Program	1. Describe existing water conservation program.	Yes, provided in Section 5.3.
	2. Identify and describe establishment of conservation goals	
	3. Evaluate goals for cost-effectiveness.	
	4. Describe the WUE measure proposed to meet the goal for the next 6 years.	
	5. Describe education of customers about efficiency practices.	Yes, provided in Section 5.4.
	6. Estimate projected water savings from the proposed WUE measure.	
	7. Describe how the efficiency program will be evaluated for effectiveness.	
	8. Evaluate distribution system leakage.	
	9. Evaluate rate structures that encourage water demand efficiency.	
	10. Describe the water supply characteristics to convey the importance of water use in the community.	
Distribution System Leakage	1. Calculate annual total production and authorized consumption using Rule guidelines.	Yes, provided in Section 3.5.3 and reported annually to DOH.
	2. Calculate annual distribution system leakage using Rule guidelines.	
	3. Reduce leakage.	Yes, see Appendix E for Water Loss Control Action Plan.
	4. Develop water loss control action plan if leakage is over 20% for a rolling 3-year average.	
Goals	1. Establish measurable conservation goal.	Yes, measurable goals were established in public process for this WSP.
	2. Use a public process to establish goal.	

	3. Report annually on progress.	Yes, in annual WUE reports.
Performance Reports	1. Submit WUE report to DOH by July 1.	Yes, Lewis County has submitted annual performance reports since 2011.
	2. Share the WUE information with customers.	
	3. Make WUE report available to the public upon request.	

5.3 CURRENT CONSERVATION PROGRAM

Lewis County established programs and practices to decrease the amount of water loss and to increase the efficient use of treated water. Water loss was a high priority when Lewis County began operation of the system in 2011. The current conservation program includes the following activities:

1. **Distribution System Meter.** The Utility has a meter at the Plant that measures finished water sent into the distribution system. The meter was checked for accuracy and calibration in October 2013.
2. **Service Meters.** All services are metered. However, the meters are over 20 years old so Lewis County began replacing all service meters in 2012. All service meters are to be replaced by June 2015.
3. **Rate Structure.** Lewis County established a bimonthly base rate and usage rate for water service in April 2011. This replaced the bimonthly flat rate that included up to 9,000 gallons of water.
4. **System Leak Detection.** Lewis County retained a professional leak detection survey of the water distribution system in August 2011. Problem areas were repaired and completed in 2012.
5. **Leak Detection and Repair.** Lewis County conducted surficial investigations of leaks, and responded promptly to leak repairs. A procedure to repair leaks was developed to use the county CodeRed notification system and to cross train county personnel so as to have a repair crew readily available.
6. **Tank Inspection.** The 250,000 gallon metal water tank and 60,000 gallon concrete clearwell were inspected by professional divers in July 2013.
7. **High water usage notification.** Lewis County notified customers of abnormally high water usage on their water bill. These high usages are usually indicative of a leak on the customer side of the meter. Procedures were also developed for fee waivers and payment plans to encourage customers to repair leaks immediately.
8. **Response to Customer Service Leaks.** Lewis County developed a procedure to respond to customers' enquiries about potential leaks by conducting a check at the service meter, meeting with the customer, and providing instructions for a simple home leak test.

9. **Water Supply Characteristics.** Lewis County uses the annual Consumer Confidence Report to inform customers of the characteristics of their water supply.
10. **Customer Outreach.** Lewis County issues newsletters to provide information about the water utility, water conservation and other information. Newsletters are also available on the county website.
11. **Capital Improvement Projects.** Lewis County constructed 8,580 lf of new water main complete with service connections to replace old leaky mains and service connections in 2012.
12. **Hydrant Replacements.** Lewis County replaced and repaired fire hydrants with a history of known leaks.
13. **Billing Software.** Lewis County has installed a new utility module of CAMS (Cost and Project Accounting Management System) to process bills, work orders and invoices with an interactive database that can format bills to show water usage patterns.
14. **Water Audit.** Lewis County completed a water audit using the AWWA M-36 water audit program.

5.4 CONSERVATION PROGRAM FOR 2014 - 2020

Lewis County is adopting a water use efficiency goal to reduce distribution system leakage to less than 20% of total production by 2034 as calculated on a rolling three-year average.

According to the Municipal Water Law, we need to implement one measure of water use efficiency. Lewis County will continue to distribute conservation literature through bimonthly billings, newsletters, annual Customer Confidence Report (CCR) and on the county website.

5.5 WATER LOSS CONTROL ACTION PLAN

Current conservation efforts have reduced the water loss volumes since 2011. However, the three-year average still exceeds 20% so a water loss control action plan was developed for the system. The water loss control action plan is in Appendix E.