Water Conservation/Efficiency Goals
for the
2022 Water System Master Plan Update

1. WATER CONSERVATION GOALS

Previous goals and how well they were met:

- As a demand-side goal set in the ***2014 Water System Plan***, the City set out to reduce the ERU (equivalent residential unit, the total usage divided by # residences) value of 160 gpd/unit by 10% over 10 years. The City's primary tactic for reaching this goal was the additional use of Class A reclaimed water from its Water Reclamation Facility to replace irrigation use of potable water.
    - In 2021, the usage per ERU was **146 gpd/ unit, or a 9% reduction over 10 years**. Notably, usage per ERU was more than 10% lower in 2018 and 2019 but increased slightly in 2020 and 2021, potentially due to more residents spending more time in their homes because of the COVID-19 pandemic.
    - Estimated water savings due to decreasing usage per ERU was approximately 260 million gallons over 9 years.
- As a supply-side goal set in the ***2014 Water System Plan***, the City would reduce DSL (distribution system leakage) to the DOH threshold of 10% over the subsequent 6 years. This would be an average reduction of 1% DSL per year.
    - DSL went from **13.7% for 2014 to 9.1% for 2021**, which achieved the goal of reducing DSL below the DOH standard of 10%.
    - The estimated amount of water that was saved by decreasing DSL compared to the 2010 DSL is approximately 90 million gallons.

Proposed goals with the 2022 Plan Update:

- As a demand-side goal, the City will attempt to continue reducing the ERU value by 5 percent over the next 10 years.
    - The City's approach to reaching this goal is through conservation education and continually increasing use of reclaimed water.
- As a supply-side goal, the City will continue to reduce DSL by 3% over the next 10 years.
    - This will be by continuing to fix leaks and replacing AC and Galvanized pipe.

2. WATER USE EFFICIENCY (WUE) MEASURES

The ***2014 Water System Plan*** listed the following "WUE Measures" the City would implement:

> Implement Source Meters, Service Meters and Meter Calibration (Mandatory Implementation)

- Standard procedure.

> Implement Program Promotion and Customer Education (Mandatory Implementation)

- Utility bills are mailed monthly and include information on historical water use, and ways to save water and energy.
- The City also provides information on conservation on their website and at City Hall.
- In the annual Water Quality report, water conservation tips are also provided including simple ways that customers can reduce their daily water consumption.

> Implement a Water Loss Control Action Plan to Control Leakage (Mandatory Implementation if DSL >10 percent)

- In 2013-14, the City's 3-year rolling average DSL was **14.9 percent**, not meeting the 10% DOH maximum. As such, the City implemented a Water Loss Control Action Plan (WLCAP) to remain in compliance which included the following actions:
  - Assess data accuracy, and
  - Assess data collection methods and errors.

> Evaluate Conservation Pricing (Mandatory Evaluation, Supplementary Implementation)

- The City has an inclined block water rate structure to incentivize water use efficiency.

> Bills Showing Consumption History (Supplementary Implementation)

- Standard procedure.

> Evaluate Reclaimed Water (Mandatory Evaluation, Supplementary Implementation)

- The City pumps Class A reclaimed water into the City for reuse, primarily for the City Shop (including in the water truck), the Reuse Demonstration Site at Carrie Blake Park, and augmentation of Bell Creek stream flows.

> Notifying Customers About Leaks on Their Property (Supplementary Implementation)

- Standard procedure.

All the above WUE measures were and continue to be implemented. Proposed new, expanded or enhanced WUE measures with the 2022 Plan Update include:

> Implement Program Promotion and Customer Education at least once per year

- Monthly utility bills are either paper or electronic; any bill can now be paid online.
- Bills include information on the customer's historical water use and ways to save water and energy. The City also provides information on water conservation in most monthly newsletters that accompany bills, on its website, and in flyers at City Hall. In the annual Water Quality report, water conservation tips are provided including simple ways that customers can reduce their daily water consumption.
- When the Dungeness watershed is experiencing state-declared drought (three out of the past seven summers), additional water-saving outreach is conducted:

- A new flyer, "About the Drought," was used in 2015, 2019, and 2020 and is available when needed in the future. A webpage on Drought was developed first in 2015 and is now available anytime: https://www.sequimwa.gov/856/Water-Conservation-Drought
- Tips on conserving are included in the City's monthly newsletter, on its website, and emailed out to list-serve subscribers.
- Also note that the City's monthly newsletter is reprinted in the Sequim Gazette.

> Evaluate Distribution System Leakage (DSL)

- The City currently performs annual leak detection surveys as a part of system O&M. Leaks are repaired whenever found and the City budgets annually for both leak detection and leak repair. The City's storage tanks are in good condition and are inspected regularly. Meters are calibrated and replaced as necessary depending on size. The City is currently undertaking a number of CIP projects to replace water mains which includes $200,000 per year for the replacement of asbestos cement (AC) water mains since they can be brittle and prone to leakage. Water theft is not considered to be a significant source of DSL at this time.
- The City's current 3-year rolling average DSL for 2019-2021 is **9.1 percent**, which meets the DOH standard of 10% maximum DSL and avoids the requirement for a Water Loss Control Action Plan (WLCAP).

> Conservation Pricing

- The City's current inclined block water rate structure was adopted by Ordinance 2021-028.
- In summary, the City's base charge does not include any water usage. For residential customers, monthly usage rates are $0.00950 per cubic foot (cf) for the first 600 cf, $0.02777 for 601-1,600 cf, and $0.03509 for 1,601 or more cf. Irrigation, Commercial, and public agency customers have the same rate structure up to 1,600 cf, but do not pay a higher rate for more usage.

> Use Reclaimed Water

- In 2021, the City used 32.6% of its reuse water for projects around the City, which averaged approximately 221,000 gpd. This is up from 20% and 120,000 gpd in 2006. Reclaimed water was mainly used by the Water Reclamation Facility (WRF), the Water Reuse Demonstration Site at Carrie Blake Park, and for other projects by the City (dust control, vehicle washing, etc.).
- Future projects for reclaimed water use are discussed in the City's *2008 Engineering Report* and include various aquifer recharge projects, additional storage, additional augmentation of Bell Creek, and possible augmentation of Gierin Creek.

Summary: The WUE regulations require systems of our size (2,500-9,999 connections) to implement all mandatory and at least six supplementary WUE measures. By DOH counting, the City implements 12 supplementary measures, more than exceeding the minimum requirement.

3. PROJECTION OF WATER SAVED

Water use per ERU has been decreasing, and the goals listed above aim to continue that trend. Within the next ten years the City's conservation program is projected to reduce the average day demand by approximately 100,000 gallons and reduce the maximum day demand by approximately 270,000 gallons. The City will evaluate its progress against its WUE goals when the WUE Plan is updated and new goals are set.

The City may consider additional incentives to reduce water use, such as rebate programs for showerhead or faucet replacements, or toilet/urinal retrofits. The City would perform a quantitative evaluation, including the marginal cost of water, to assess the cost-effectiveness prior to implementing a rebate program.

4. ADDITIONAL INFORMATION

For further information and reference, water use efficiency is discussed in several places in the 2022 Water System Plan Update. In particular, refer to the following sources:

- Water supply characteristics information: see Chapters 1, 2, and 3
- Water demand forecasts information: see Chapter 3
- Water use efficiency and resource analysis: see Chapter 4
- Annual WUE reports and links to the 2022 Draft Plan Update: https://www.sequimwa.gov/356/Water