



Date Submitted: 6/24/2022

Water Use Efficiency Annual Performance Report - 2021

WS Name: BELLINGHAM-WATER DIVISION CITY OF
 Water System ID# : 05600 WS County: WHATCOM
 Report submitted by: *Riley Grant*

Meter Installation Information:

Estimate the percentage of metered connections: 100%
 If not 100% metered – Did you submit a meter installation plan to DOH? No
 Within your meter installation plan, what date did you commit to completing meter installation?
 Current status of meter installation:

Production, Authorized Consumption, and Distribution System Leakage Information:

12-Month WUE Reporting Period 01/01/2021 To 12/31/2021
 Incomplete or missing data for the year? No
 If yes, explain:

Total Water Produced & Purchased (TP) – Annual volume gallons	3,046,140,000 gallons	
Authorized Consumption (AC) – Annual Volume in gallons	3,324,553,274 gallons	
Distribution System Leakage – Annual Volume TP – AC	-278,413,274 gallons	
Distribution System Leakage – DSL = [(TP – AC) / TP] x 100 %	-9.1 %	
3-year annual average - %	0.0 %	2015, 2016, 2017

Goal-Setting Information:

Enter the date of most recent public forum to establish WUE goal: 10/12/2020
 Has goal been changed since last performance report? No
Note: Customer goal must be re-established every 6 years through a public process.

Customer WUE Goal (Demand Side):

Maintain average peak day demand between June 1 and August 31 of each year to below 14 mgd during the 2020-2025 program period.

Customer (Demand Side) Goal Progress:

In 2021, 80 single-family customers received water audits; 31 toilet rebates and 2 clothes washers rebates were issued, for an estimated annual water savings of 99,692 gallons. Eleven commercial and institutional customers received water audits and direct installs of aerators, shower heads and pre-rinse spray valves at commercial and institutional locations totaling an estimated annual savings of 198,120 gallons. The multi-family residential program continued to be on hold due to complications of completing audits during the global pandemic. Additional education measures included youth education, outdoor water conservation advertising and an online pledge. The average Peak Day Demand (PDD) for June-August 2020 was 16.5 mgd, a significant increase from past years, partially attributed to the extreme heat dome experienced in July 2021. The new work plan focuses on targeted efforts to reduce summer PDD in accordance with the established goal. The transition to monthly billing began at the end of 2021 with all accounts transitioning in early 2022. Future efforts will include targeted efforts to reach the highest summer water users, tracking high water use notifications, initiating an industrial rebate program, and adjusting water rates to promote conservation.

Additional Information Regarding Supply and Demand Side WUE Efforts

In 2020, the water meter on the demand side of the system was verified to report inaccurate flows during times of low demand. Current system condition is a 60" main that is reduced down to a 48" pipe where an electromagnetic insertion style flow meter is located. This flow meter is considered one of the most accurate for this size of pipe. Further reductions of pipe size would affect the ability to maintain storage levels at times of high demand. The typical recommended flow range for this meter is 2-20 ft/s. We conducted multiple flow checks on this meter and find flow velocities range from 0.4 to 2.0 ft/s. Of these flow checks 22% were below 1.0 ft/s (8.2 mgd) and 100% of the test flows were below 2.0 ft/s (16.3 mgd). We also did flow checks where we maintained flows below 1.0 ft/s and could not obtain repeatable data to allow for percentage corrections. System layout limits the ability of simple or low-cost system modification.

Describe Progress in Reaching Goals:

- Estimate how much water you saved.
- Report progress toward meeting goals within your established timeframe.
- Identify any WUE measures you are currently implementing.
- If you established a goal to maintain a historic level (such as maintaining daily consumption at 65 gallons per person per day for the next two years) you must explain why you are unable to reduce water use below that level.

The following questions will help DOH better understand water usage, water resources management and drought response. The data will be used to provide technical assistance, not for regulatory purposes.

All questions are voluntary

Month	Date of Measurement	Static Water Level (feet below measuring point)	Dynamic Water Level (feet below measuring point)
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

Water level data:

Please provide the following information (if known) to help us better utilize the water level data.

Well tag Id number:

Well depth:

Water level accuracy (within 0.01 ft < 1 ft ~ 1 ft)

Completion type (e.g., cased open interval, cased open-ended, cased open-ended with perforations, etc...)

Location coordinates (latitude, longitude) and accuracy of the coordinates (< 1ft, ~1ft, >1000ft)

Water level parameter name (e.g. depth below measuring point, depth below top of casing, depth below ground surface)

Elevation of top of casing OR elevation of measuring point if different than top of casing (as specified in question 7)

Monthly/Seasonal Water Usage:

What was your maximum daily water demand for the previous year (in gallons per day)? 17,260,000

Month	Volume of Water Produced in gallons
January	215,640,000
February	195,860,000
March	214,160,000
April	229,340,000
May	255,260,000
June	317,430,000
July	373,500,000
August	327,870,000
September	253,490,000
October	225,810,000
November	211,280,000
December	226,500,000

Water shortage response:

Did you activate any level of water shortage response plan the previous year?

- Yes No There was no need to

If you activated a water shortage response plan the previous year, what level did you activate? (Check all that apply)

- Advisory Conservation Voluntary Conservation
 Mandatory Conservation Rationing Other

What factors caused your water shortage the previous year?

- Drought Fire Landslides Earthquakes
 Flooding Water Supply Limitations Other

Do not mail, fax, or email this report to DOH