Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

Date Submitted: 6/18/2024

Water Use Efficiency
Annual Performance Report - 2023

WS Name: BELLINGHAM-WATER DIVISION CITY OF

Water System ID# : 05600 WS County: WHATCOM

Report submitted by: *Torhil Ramsay*

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 *01/01/2023* To *12/31/2023*

Incomplete or missing data for the year? *No*

If yes, explain:

Total Water Produced & Purchased (TP) – Annual volume gallons	*3,048,930,000*	gallons	
Authorized Consumption (AC) – Annual Volume in gallons	*3,425,804,664*	gallons	
Distribution System Leakage – Annual Volume TP – AC	*-376,874,664*	gallons	
Distribution System Leakage – DSL = [(TP – AC) / TP] x 100 %	*-12.4 %*		
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 2023, 18 single-family households were assessed for water conservation measures; 19 toilets and 8 clothes washers were replaced, saving an estimated 56,000 gallons of water. 52 commercial customers were also assessed, resulting in 119 fixtures replaced, saving an estimated 404,898 gallons of water. Additional education measures included youth education, outdoor water conservation advertising and an online pledge. We also continued to promote voluntary summer watering and Manage Weeds Naturally programs. Our water division runs regular reports to check for high consumption and potential leakage and reaches out to customers. Our Peak Day Demand (PDD) was 12.84 MG on July 21, 2023; down from the previous year's 15.9 MG. We will continue to target efforts to reduce summer water consumption and continue outreach to residential and commercial customers.

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.

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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)?

Month	Volume of Water Produced in gallons
January	312,604,908
February	147,128,608
March	264,245,212
April	243,859,968
May	254,946,076
June	371,694,664
July	403,515,332
August	273,889,176
September	376,590,324
October	326,286,576
November	178,362,096
December	262,828,500

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