

Water Use Efficiency Annual Performance Report - 2022

WS Name: WASHINGTON STATE UNIVERSITY

Water System ID# : 93200 WS County: WHITMAN

Report submitted by: Jeff Lannigan

Meter Installation Information:

Estimate the percentage of metered connections: 50% to 75%

If not 100% metered – Did you submit a meter installation plan to DOH? Yes

Within your meter installation plan, what date did you commit to completing meter installation? 6/30/2021
12:00:00 AM

Current status of meter installation:

WSU installed seven additional water meters in 2022, and has identified priorities and started design to address the remaining unmetered facilities. Housing facilities make up the large majority of the remaining unmetered connections, and this work was deferred due to funding constraints related to Covid 19. Facilities has established a plan to fund these meters, which will bring the total campus metering to 95% complete by the end of 2024. The remaining unmetered connections will be addressed as funding allows, timing TBD.

Production, Authorized Consumption, and Distribution System Leakage Information:

12-Month WUE Reporting Period 01/01/2022 To 12/31/2022

Incomplete or missing data for the year? Yes

If yes, explain:

Water use is not fully metered, therefore Authorized Consumption is estimated using a comparable water use intensity analysis.

Total Water Produced & Purchased (TP) – Annual volume gallons	438,148,032 gallons
Authorized Consumption (AC) – Annual Volume in gallons	348,890,238 gallons
Distribution System Leakage – Annual Volume TP – AC	89,257,794 gallons
Distribution System Leakage – DSL = $[(TP - AC) / TP] \times 100 \%$	20.4 %
3-year annual average - %	22.7 % 2020, 2021, 2022

Goal-Setting Information:

Enter the date of most recent public forum to establish WUE goal: 06/29/2022

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):

Other goals are to limit annual aquifer pumping increases to 1% of the pumping volume based on a 5 year moving average starting with 1986 (642 mgd). At no time shall the accumulated total pumping exceed 125% of the 1981 to 1985 average (702 – 877mgd), to improve irrigation systems to automatic systems (70-90% in ten years) and to eliminate 20 gpm of cooling water to the drain in 3 years.

Customer (Demand Side) Goal Progress:

1. WSU has established a Water Conservation Task Force, a combination of operations, engineering, and demand-side staff to evaluate water use data on a monthly basis, identify unusual usage, investigate actual demands to resolve the issues, and track subsequent usage to assure resolution has been achieved. This has been effective in identifying leaks, building system issues, and faulty meters and assuring efficient water use.
2. Water use at WSU Pullman has tracked steadily downward over the last 30 years, even while campus has grown 40% over the same period. WSU has met or exceeded the established water savings goal.
3. The water use goals established in 2015 and re-established in 2022 have been achieved.

Additional Information Regarding Supply and Demand Side WUE Efforts

For the reporting period listed above, WSU total water produced was 438 million gallons, a decrease of 10 million gallons from 2021. This is largely attributed to wetter spring and reduced irrigation demand in 2022. Irrigation systems are fully automatic and centrally controlled to maximize efficiency, and single-pass domestic water cooling has been eliminated wherever possible.

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.

In 2022 WSU's metering efforts continued to identify priorities to assure WSU's limited resources are spent to maximize the associated benefit in quantifying water use, and meters were added at seven campus buildings. Significant efforts were also invested in 2022 to automate the meter reads from campus facilities and effectively store the data in a historian for later analysis. The design effort is complete to meter all unmetered Housing facilities and the corresponding irrigation, but the execution of this work was delayed due to funding impacts related to COVID-19 – WSU Facilities will now fund the work and these meters will be installed by the end of 2024. Although around 50% of the total number of connections are currently metered, this represents 84% of square footage on campus; implementing the metering at Housing facilities and other high-priority facilities in the coming two years will bring this number by area to 95%. A water conservation task force has been established to continually identify, troubleshoot, and correct areas of high water use. WSU also continues to be an active participant in commissioning and funding studies of water resource issues through its involvement in the Palouse Basin Aquifer Committee (PBAC).

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	22,735,000
February	25,736,000
March	22,288,000
April	24,868,000
May	25,786,000
June	27,521,000
July	70,453,976
August	84,134,016
September	58,541,056
October	33,733,944
November	21,144,960
December	21,116,080

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