

Existing Washington State permit-exempt well metering programs and metering data from permit-exempt wells

Several Watershed Restoration and Enhancement Committees have expressed interest in exploring policies related to metering permit-exempt (PE) wells. Ecology staff compiled information on existing PE well metering programs across the state for the purpose of policy and project discussions at Watershed Restoration and Enhancement Committee meetings. This document includes the following information on the structure of voluntary and mandatory PE well metering programs:

- who pays for the meter
- what entity runs the program
- how is the data reported
- frequency of data reporting

Table 1: Summary of PE Well Metering Programs

| Program | Meter Required? | Number of Wells | Who Pays? | Water Use Limits* | 2019 Average of All Users |
|--|------------------------|------------------------|------------------|--------------------------|----------------------------------|
| Lummi Peninsula | Yes | 67 | Water User | 350 GPD | 124 GPD |
| Dungeness | Yes | 164 | Program Sponsor | 150 - 530 GPD | 120 GPD |
| Kittitas | Yes | 110 | Program Sponsor | 275 - 300 GPD | 114 GPD |
| Skagit Study | No | 18 | Program Sponsor | 350** GPD | 187 GPD |
| Big Lake Skagit Mitigation | Yes | ~ 80 (unbuilt) | Water User | 318 GPD | N/A |
| King County Study | No | 8 | Program Sponsor | None | 241 GPD |

*More details and a breakdown can be found within the program description below.

**Water use assumption used in study. No limits were imposed as part of the study.

Lummi Peninsula Program

- This mandatory program was the result of the [Lummi Settlement](#).
- Each homeowner must purchase an approved remote-read meter and install it themselves on the water line serving their residence. There are specific requirements regarding the type of meter and how to install it: [Meter Installations on the Lummi Peninsula](#).
- The Department of Ecology’s Bellingham Field Office (BFO) runs the program, reads the meters, and enforces water use limits.
- Data is manually collected monthly.
 - BFO staff spends about ~15% FTE ensuring meters are properly installed, collecting data, communicating concerns, and enforcing regulations.
 - Enforcement action may include orders to: (1) stop or limit water use, (2) require repayment of the water in the next water year or years, (3) pay monetary penalties, or (4) all of these.
- If homeowner exceeds the annual allotted 0.39 AF (350 gpd), they can currently pay to use additional water. Those exceeding their allocation will receive an end-of-the-year billing from the Lummi Nation for the additional water starting at \$50. Please refer to [Section V.H.2\(c\) of the Settlement Agreement](#) for billing rate information.
- Homeowners may also purchase additional allotments for additional uses, such as Extensive Irrigation and Stockwater. The Single Domestic allocation allows for basic outdoor watering.

Table 2: Summary of Lummi Program Data for 2019

| Water Use | Water use Limit (gpd) | Count of Meters | Average water use (gpd) | Highest water user* (avg gpd) | Lowest water user* (avg gpd) |
|--|-----------------------|------------------|-------------------------|-------------------------------|------------------------------|
| Industrial | 350 | 1 | 225 | 225 | 225 |
| Irrigation and Stockwater | 700 | 2 | 92 | 152 | 31 |
| Single Domestic | 350 | 62 | 112 | 498 | 0 |
| Single Domestic, and Irrigation | 700 | 1 | 170 | 170 | 170 |
| Single Domestic, Irrigation, and Stockwatering | 1050 | 1 | 788 | 788 | 788 |
| Column Average | 630 | Total: 67 | 277 | 367 | 243 |

*water user with the highest/lowest annual average water use.

Dungeness Pilot Program

- The Streamflow Restoration law passed in January 2018 (RCW 90.94) provided funding for two metering pilots. The two areas selected, Dungeness and Kittitas, already required metering of new permit exempt wells. The pilot program builds on the existing program managed by Washington Water Trust and Ecology. The 10-year pilot program provides funding for the implementing entity to pay for new meters. The purpose of the pilot program is to determine the costs and feasibility for metering such uses in other areas.
- The Clallam Conservation District runs the program, reads the meters, and provides an online platform (Water Scope) for homeowners to track use. See [publication](#) for more information on the program structure.
- Clallam Conservation District provides builders of new homes using a permit-exempt well within the rule area with a free meter, and reimburses up to \$200 for the cost of installing the meter provided it occurred on or after January 19, 2018.
- Meters are automatically read (telemetry meters) as often as once a day.
- Water limits are determined based on the mitigation package the homeowner selects. All listed costs are a one-time fee.
 - The Indoor Mitigation package costs \$1,000 and allows for up to a 150 GPD annual average water use.
 - The Outdoor Mitigation Basic package costs \$1,000 and allows for up to a 90 GPD annual average water use. The Outdoor Mitigation Extended package costs \$2,000 and allows for up to a 200 GPD annual average water use.
 - The Stockwater Mitigation (up to 5 animals) package costs \$1,300 and allows for up to a 60 GPD annual average water use. The Stockwater Mitigation (up to 10 animals) package costs \$1,800 and allows for up to a 120 GPD annual average water use. The Stockwater Mitigation (up to 15 animals) package costs \$2,200 and allows for up to a 180 GPD annual average water use.
 - Multiple packages for different categories may be combined, for example, a user may purchase the Indoor + Outdoor Basic + Stockwater (up to 10 animals) for a total of \$3,800 and 480 GPD annual average water use.

Table 3: Summary of Dungeness Program Data for 2019

| Water Use | Water use Limit (gpd) | Count of Meters | Average water use (gpd) | Highest water user* (avg gpd) | Lowest water user* (avg gpd) |
|--|------------------------------|------------------------|--------------------------------|--------------------------------------|-------------------------------------|
| Indoor | 150 | 117 | 118 | 744 | 0 |
| Indoor + Indoor | 300 | 2 | 235 | 275 | 195 |
| Indoor and 5 Animal Stock | 210 | 2 | 118 | 175 | 62 |
| Indoor and Basic Outdoor | 240 | 24 | 104 | 296 | 3 |
| Indoor and Extended Outdoor | 350 | 15 | 115 | 244 | 36 |
| Indoor and Extended Outdoor and 10 Animal Stock | 470 | 2 | 423 | 495 | 351 |
| Indoor and Extended Outdoor and 15 Animal Stock | 530 | 1 | 63 | 63 | 63 |
| Indoor and Extended Outdoor and 5 Animal Stock | 410 | 1 | 87 | 87 | 87 |
| Column Average | 332 | Total: 164 | 158 | 297 | 100 |

*water user with the highest/lowest annual average water use

Kittitas Pilot Program

- The Streamflow Restoration law passed in January 2018 (RCW 90.94) provided funding for two metering pilots. The two areas selected, Dungeness and Kittitas, already required metering of new permit exempt wells. The 10-year pilot program provides funding for the implementing entity to pay for new meters. The purpose of the pilot program is to determine the costs and feasibility for metering such uses in other areas.
- [The Kittitas County Water Resources Program \(KCWRP\), housed in the Kittitas County Public Health Department](#), runs the program, conducts a meter installation inspection, programs the cellular transmitter on the meter, and reads the meters electronically through the office, and enforces water use limits.
- Under the Pilot Project KCWRP reimburses the meters and installation costs, up to \$750.
- The County reads the meters five times per year in March, July, August, September and October.
- Package A (Indoor use only) costs \$3,895 and allows 275 gallons per day to be measured on an annual average and 825 gallons per day for a daily maximum withdrawal.
- Package B (Indoor and Outdoor) costs \$4,810 and allows 300 gallons per day to be measured on an annual average and 900 gallons per day for a daily maximum (this includes up to 500 square feet (0.01 acres) of outdoor use).

Table 4: Summary of Kittitas Program Data for 2019

| Water Use | Water use Limit (gpd) | Count of Meters | Average water use (gpd) | Highest water user* (avg gpd) | Lowest water user* (avg gpd) |
|--------------------------|-----------------------|-------------------|-------------------------|-------------------------------|------------------------------|
| Indoor only | 275 | 82 | 125 | 293 | 14 |
| Indoor and basic Outdoor | 300 | 28 | 85 | 196 | 3 |
| Column Average | 341 | Total: 110 | 105 | 245 | 9 |

*water user with the highest/lowest annual average water use

Skagit PE Well Metering Study

- In 2010, Skagit County Public Works (County), along with the support of Ecology and Golder Associates, Inc. (Golder), launched a voluntary exempt well metering study to measure water withdrawals from domestic wells in Skagit River tributaries. The goal of this study was to reaffirm the allocation of [350 gallons per day per home](#), and if necessary, recommend a more representative amount.
- The study was jointly funded by the County, Ecology, and the City of Anacortes.
- In the fall of 2010, the County surveyed residents in the Carpenter-Fisher and Upper Nookachamps sub-basins to find volunteers for the well metering study. Eighteen volunteers participated in this study, and their confidentiality was maintained throughout the study.
- Metering data was collected during the entirety of 2012 and 2013. Two separate reports were produced from the data; one for [2012](#) and one for [2012-2013](#). Golder analyzed attributes of the metered data and also estimated indoor versus outdoor water use.

Table 5: Summary of Skagit Study Data for combined 2012-2013

| Water Use | Water use Assumption (gpd) | Count of Meters | Average Total Use (gpd) | Average Indoor Use (gpd) | Average Outdoor Use (gpd) |
|-----------------------------|-----------------------------------|------------------------|--------------------------------|---------------------------------|----------------------------------|
| Combined 2012 – 2013 | 350 | 18 | 187 | 131 | 56 |

Big Lake Mitigation Program (Skagit Basin)

- The [Big Lake Mitigation Program](#) is a mitigation program that provides a legal and reliable year-round water supply for homes using permit-exempt wells within the Nookachamps subbasin while also protecting streamflows.
- Water is available to all new water users within the mitigation area. These new water users who are seeking a Skagit County building permit will be required to install a remote-read meter on their wells.
- Ecology and Skagit County jointly manage the water bank. The county is the lead and integrates the mitigation program into their building permitting processes. Ecology is responsible for water bank accounting and provides technical assistance to the county, as requested. Skagit County and Ecology will jointly issue a “Proof of Mitigated Water Supply” document to eligible new users. This document is recorded with the property title and confirms the legal water availability for a domestic unit.
- Ecology will collect and manage the water-use data. To date, there is no available data.
- Each new home is allocated 175 GPD for indoor domestic purposes and 143 GPD for outdoor irrigation, enough to irrigate about 75 square feet (0.13 acres) of lawn. These quantities are informed by average indoor and outdoor use within the basin. The actual amount debited from the water bank will depend on whether the home is on septic or sewer, since this influences the consumptive portion of total water use.

King County PE Well Metering Study

- King County conducted a small voluntary permit-exempt well metering study in 2007-08 on Vashon-Maury Island. Some metering volunteers continued to report use.
- Through King County funding, 8 people installed meters. This is about 1% of the total number of permit-exempt wells on the Island.

Table 6: Summary of King County Study Data for 2007-2019

| Water Use | Count of Meters | Average water use (gpd) | Highest water user* (avg gpd) | Lowest water user* (avg gpd) |
|-----------------------------|-----------------|-------------------------|-------------------------------|------------------------------|
| 2007 | 8 | 267 | 548 | 32 |
| Combined 2008 - 2009 | 7 | 171 | 339 | 38 |
| 2010 | 6 | 191 | 404 | 37 |
| 2011 | 5 | 122 | 152 | 30 |
| Combined 2012-2019 | 3 | 125 | 238 | 40 |
| Column Average | Total: 8 | 175 | 336 | 35 |

*water user with the highest/lowest annual average water use

Other Ecology NWRO Metering Activities

In addition to the permit-exempt well metering programs described above, Department of Ecology requires metering and water use data reporting on certain surface and groundwater rights. The following describes some of the Ecology Northwest Regional Office metering activities.

- Water right holders must install water meters for:
 - All new surface water uses
 - All existing surface water uses greater than one cubic foot of water per second
 - All new water right permits issued in the 16 fish-critical watersheds (groundwater and surface water)
- The water right holder is responsible for the cost and installation of meter.
- New water right meters installed must be telemetered and can cost up to \$500.
- The Department of Ecology runs the program. In the Northwest Regional Office, about 300 water right holders must report their data yearly. Remaining water right holders must collect data accordingly, and report it upon request.
- Data collection frequency depends on water use.

| Water Use | Frequency of Data Collection |
|-------------------|------------------------------|
| Less than 10 gpm | Monthly |
| 10 to 49 gpm | Bi-weekly |
| 50 to 449 gpm | Weekly |
| More than 450 gpm | Weekly |

- Ecology staff analyzes data, contacts water right holders for technical assistance and compliance, and sends reporting reminders. An estimated 35% of FTE is dedicated to metering compliance.
- Five municipalities account for over 80% of all water use in WRIAs 7, 8, and 9.
- 2019 Reported Water Right Meters in 030 Planning Basins
 - **WRIA 7:** 68
 - **WRIA 8:** 116
 - **WRIA 9:** 91
 - **WRIA 15:** 254