

Water Loss Control Tools, Techniques and Tips

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HELPING TO ENSURE SAFE AND RELIABLE DRINKING WATER

Mission

**To protect the health
of the people of
Washington State
by ensuring safe
and reliable
drinking water.**



Water Use Efficiency Program Requirements

- 💧 **Set goals in a public forum**
- 💧 **Robust planning requirements**
- 💧 **Meter installation by 2017**
- 💧 **Achieve a 10% leakage standard**
- 💧 **Submit WUE & metered data in an annual performance report**

Key Implementation Tools

Online Annual WUE Reporting

The screenshot shows the web interface for the WUE Annual Reporting Database. At the top left is the Washington State Department of Health logo. The top right identifies the Division of Environmental Health and Office of Drinking Water. A breadcrumb trail indicates the current page: [DOH Home](#) > [EH](#) > [ODW](#) > [Water System Data](#) > [Water Use Efficiency Report Form](#). A [WUE Help](#) link is also present.

Quick Links

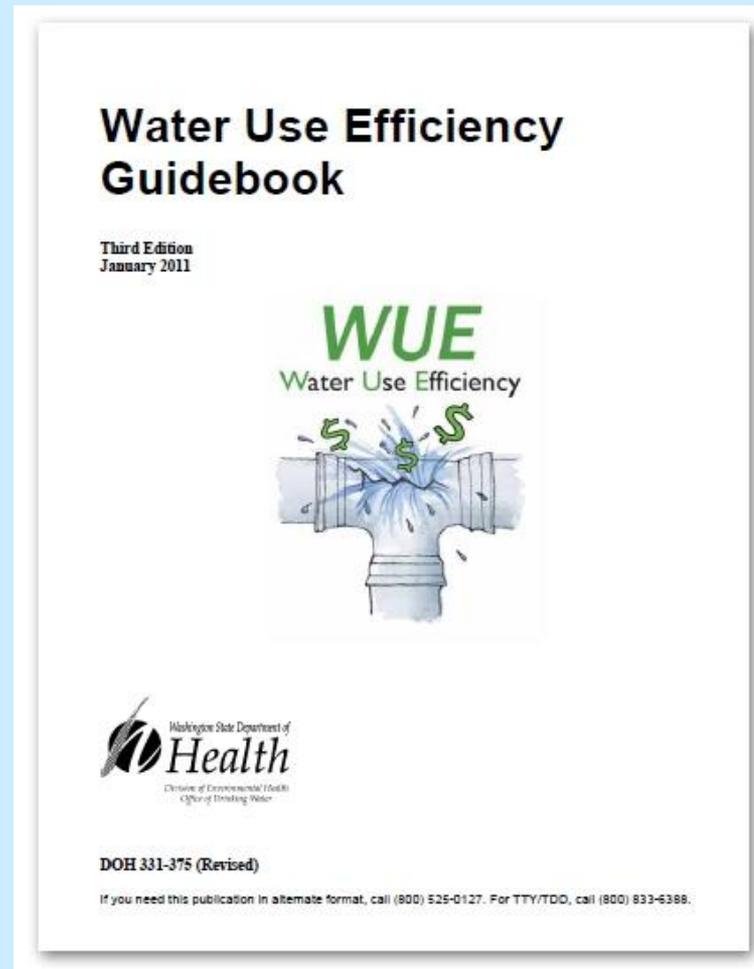
- [WUE Home](#)
- [WUE Guidebook](#)
- [Print a WUE Annual Reporting Worksheet](#)
- [Search for Completed WUE Report \(Sentry Internet\)](#)
Note: This link goes to Sentry Internet
- [Submit WUE Report](#)

WUE
Water Use Efficiency

Welcome
to the
WUE Annual Reporting Database

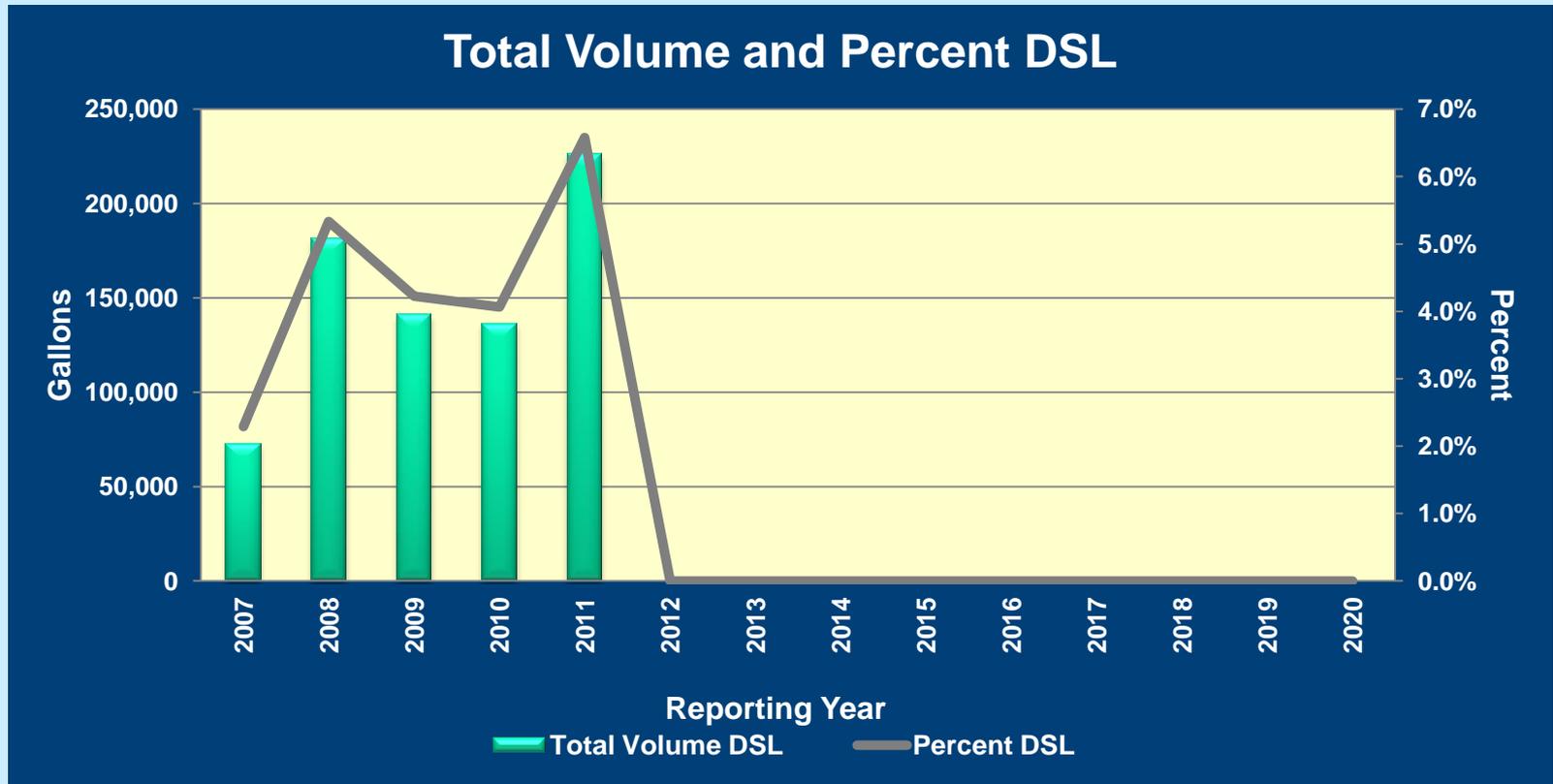
[Submit WUE Report Now](#)

Key Implementation Tools



Key Implementation Tools

WUE Data Collection Tool



Alliance for Water Efficiency State Scorecard, 2012

- 💧 **Nationwide assessment of state laws/policies related to WUE**
- 💧 **Intended to highlight good state WUE policies and create healthy competition among states**
- 💧 **20 question survey, 40 possible points, each state received a grade**

Alliance for Water Efficiency State Scorecard, 2012

💧 AWE rankings for PNWS states

	Total Points	National Ranking	Grade
WA	21.5	4th	B
OR	15.5	Tied 12th	B -
ID	3.0	Tied 37th	D

How WA Water Utilities Spend WUE Budgets

💧 Primarily used for:

▪ Meters

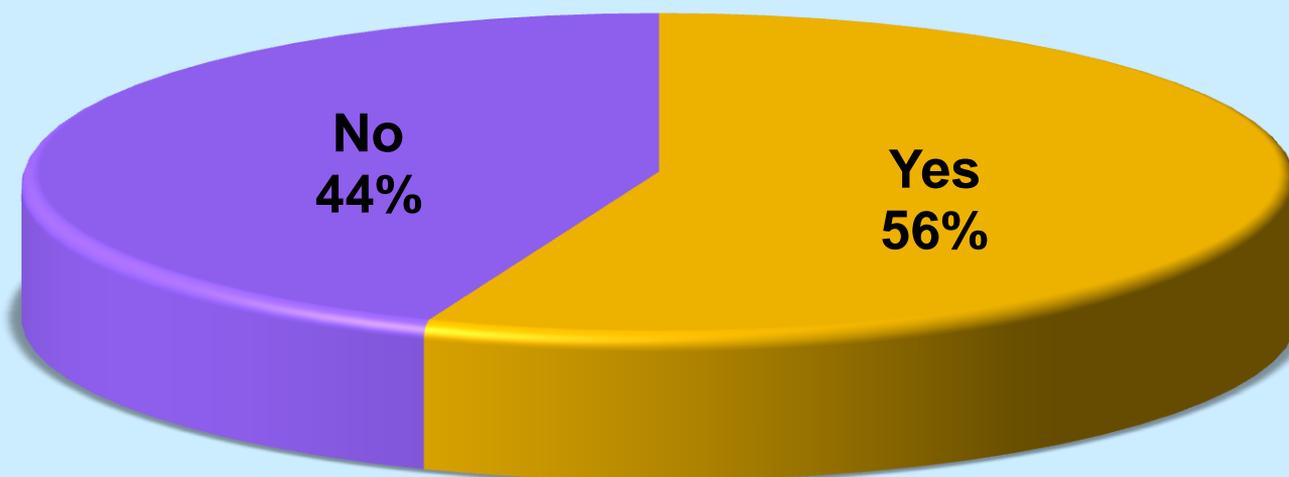
- Installation/repair
- Avg cost = \$1,000/home
- Replace with new AMR/AMI technology

▪ Finding and fixing leaks

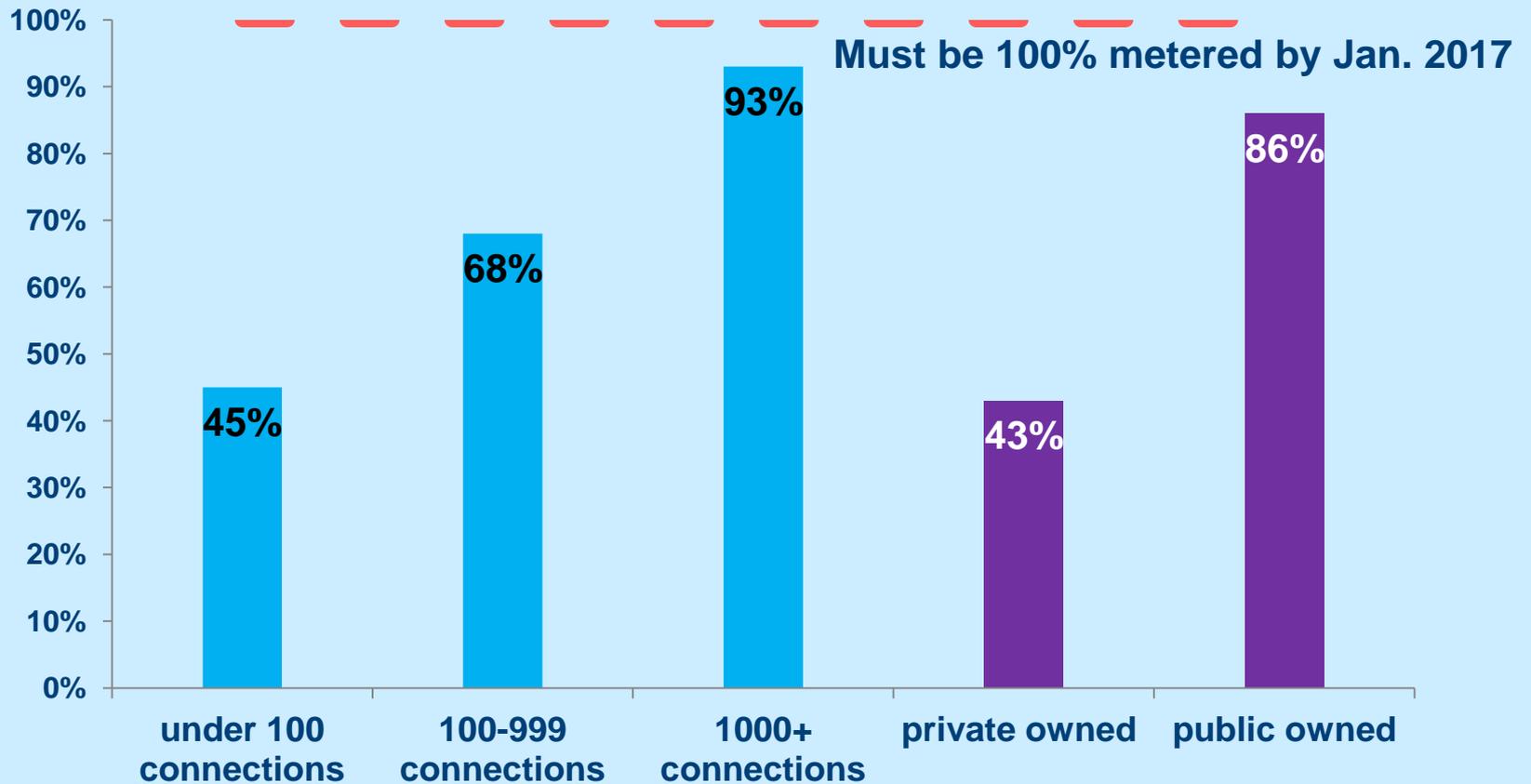
- Recovers lost revenue
- Have more control over fixing leaks than customer use behavior



Fully Metered Water Systems in 2010



Fully Metered Water Systems by Size/Ownership in 2010



Compliance With Leakage Standard

How to comply:

- **10% or less**
- **20% or less for systems with 500 or fewer connections (must get permission from DOH)**
- **Develop and implement a water loss control action plan**

The Story on Leaks: Apparent Losses

Poor data collection and equipment skew annual leakage percentage:

- Old, inaccurate meters (source, service, and intertie)
- Unreliable or lost data (change in personnel)
- Inconsistent data collection, or not at all
- Broken meters
- Billing software glitches



Evaluate Data Collection

Ask yourself these questions:

- **Are you tracking unmetered authorized use?**
 - Flushing of mains, fire dept., cleaning tanks
- **Are your meters old or in disrepair?**
 - Replace with *good quality* meter
- **Are you collecting source and customer metered data on same yearly schedule?**
 - Choose a schedule that works for you

Case Study: **City of Bingen**

- 💧 **Population: 720 residential**
- 💧 **Location: Klickitat County, shore of Columbia River**
- 💧 **3-year avg. water loss: 43.8%**
(39% in 2008, 54% in 2010)
 - **Two newspaper articles**
 - **City council: “Unacceptable”**



Case Study: **City of Bingen (cont.)**

💧 **Industrial customer oversight**

- Meter multiplier of 1,000 not factored in for almost 7 years
- Double whammy: High leakage **and** lost revenue

💧 **Actions taken**

Meter accuracy testing, zone meters, new 6" and 8" meters at port, ERWoW leak survey, industrial customer water audits

Case Study: **City of Mercer Island**

- 💧 **Population:** 22,700
- 💧 **Location:** King County, shore of Lake Washington
- 💧 **Source:** Purchase 100% of water from Seattle
- 💧 **3-year average water loss: 7.9%**
(Down from 10.4% in 2007 to 3.0% in 2009)



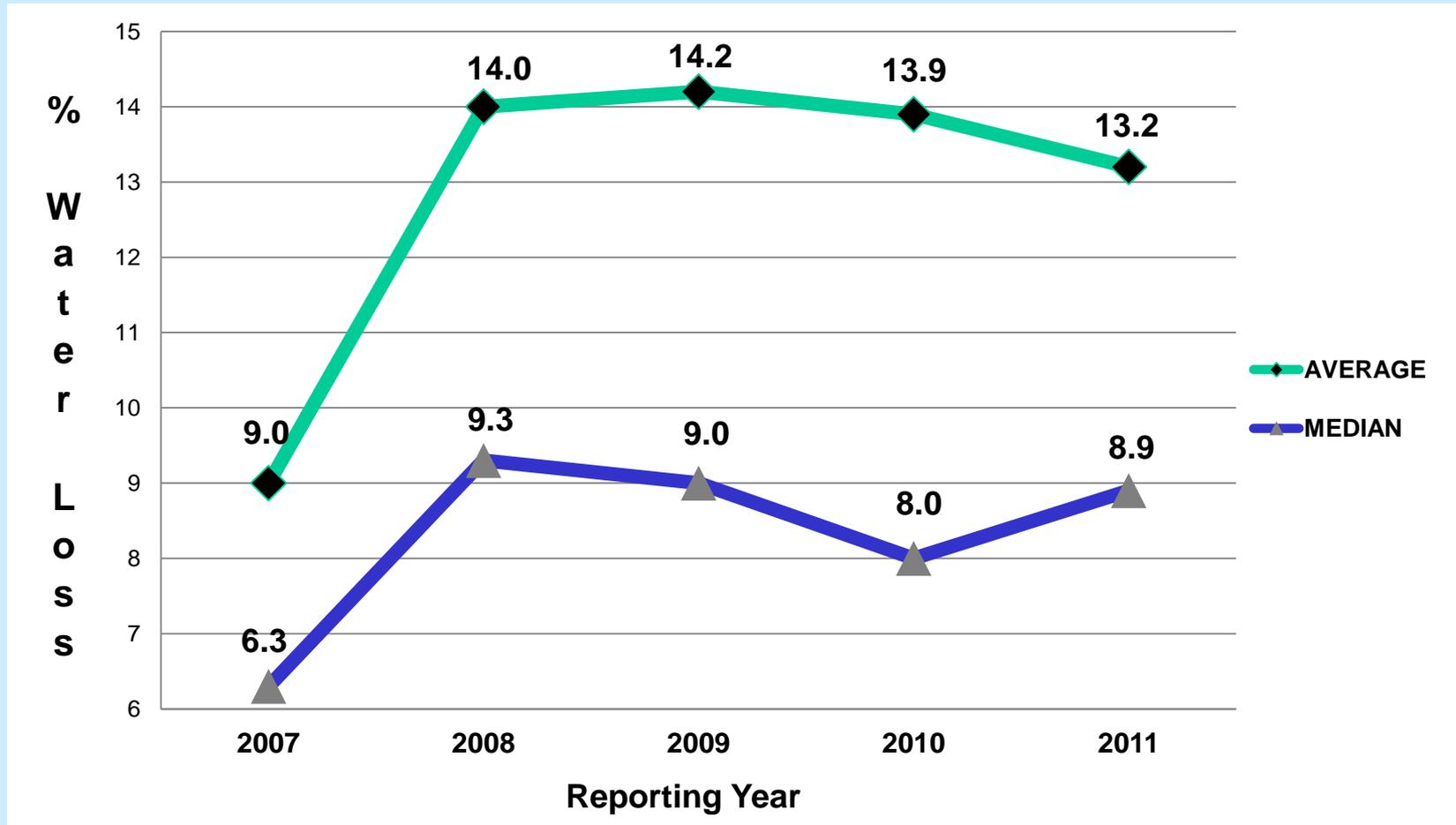
Case Study:
City of Mercer Island (cont.)

💧 **2010, Water Loss = -1.2%**

💧 **Actions taken**

- **Intertie meter calibration with Seattle**
 - Who pays for meter calibration?
 - How frequently?
- **Replaced six (12"-16") meters ingoing/outgoing storage tank, \$50K**

State Average Annual Leakage Performance



What is a Water Loss Control Action Plan?

- 💧 Documented effort to reduce leakage by implementing water loss control methods
- 💧 Timeframe for achieving the leakage standard
- 💧 Budget to fund the plan
- 💧 Technical or economic concerns that prevent compliance

City of Port Angeles

Six-Year Leak Performance

Year	Total Production	Authorized Consumption	Leakage Volume	Leakage Percentage	3-year Leak Percentage
2007	1,141,000,000	899,000,000	242,000,000	21.20%	-
2008	1,088,620,000	886,245,277	202,374,723	18.60%	-
2009	1,006,112,000	849,119,719	156,992,281	15.60%	18.50%
2010	932,698,000	783,860,342	148,837,658	16.00%	16.70%
2011	909,663,992	761,117,781	148,546,211	16.30%	16.00%
2012	846,687,000	729,078,972	117,608,028	13.90%	15.40%

City of Port Angeles, contd. How to Increase Your Revenue

- 💧 Sold less and pumped less water in 2012 than in 2011**
- 💧 Revenue went up by about \$200,000**
- 💧 How did they do it?**

City of Port Angeles, contd.

How to Increase Your Revenue

- 💧 **Replaced 305 large meters**
 - 1.5- to 8-inch meters
 - Asked wastewater department to pay for half the cost of replacing meters
- 💧 **No customer rate increase!**

How We Enforce the 10% Leakage Standard

- 💧 **Review the annual WUE report**
- 💧 **If 3-year average exceeds 10%**
 - **Send a violation letter**
 - **Offer technical assistance on how to complete a water loss action plan**
 - **Review/approve the plan, as necessary**

What's New for WUE in WA

💧 Water Loss Control Web Site

▪ Emphasis on:

- New water loss technology
- Water audit software
- Funding options for repairing leaks
- Educational opportunities
- New meter technology
- State regulatory compliance rates

Questions?

💧 **For more information:**

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