

PERFORMANCE AUDIT



Office of the
Washington
State Auditor
Pat McCarthy

Assessing the Effectiveness of Washington's Water Use Efficiency Regulations

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Executive Summary

State Auditor's Conclusions (page 33)

When Washington created municipal water use efficiency requirements 20 years ago, many in our famously rainy state may have been skeptical of the need to conserve water. Today, however, our population is growing rapidly, and our water supplies are more constrained – most Washingtonians experienced drought conditions just over the past summer. The time is now to redouble our efforts to ensure sufficient fresh water for future generations, and this performance audit offers concrete recommendations to help do just that.

Better collection and use of data could help reduce the loss of drinkable water as it travels through municipal systems, which is one of the two main goals of the efficiency program. We found the data maintained by the Department of Health (DOH) is incomplete and often unreliable, in part because the agency does not collect all the information required by law.

DOH can also focus more of its efforts on helping small water systems, which make up 90 percent of all municipal systems in the state, understand and comply with its regulations. When we surveyed water suppliers, the most frequently mentioned barriers to compliance with efficiency requirements were insufficient funds and the difficulty of finding leaks – and most of the respondents that cited these barriers were small-system operators.

Water suppliers were also overwhelmingly concerned about the importance of conservation. Conservation is the second of the main goals of state water use efficiency requirements. We found those efforts may be better housed within the state Department of Ecology, which already has expertise in natural resource conservation. In addition, the agency was recently directed by the Legislature to update the state's response to climate change.

We only have to recall last year, when drought emergencies were declared in all of California's 58 counties, and sunken boats emerged from record-low water levels behind Hoover Dam, to know water supply is an important issue for Washington as well. This audit's recommendations offer a roadmap to reinvigorating our efforts to conserve that precious resource.

Background (page 7)

Rapid population growth and changing climate are putting growing pressure on the availability of Washington's fresh water supply. As a result, managing the state's water resources is becoming an increasingly vital responsibility of the state. Drinking water is the state's second largest use of water, supplied primarily by its 2,065 municipal water systems – predominantly those that serve at least 15 residential connections. Seattle Public Utilities is the largest, serving 177,000 connections overall. Municipal water systems account for only 12 percent of all water systems, but supply 98 percent of Washington's water system customers with drinking water. Two-thirds of municipal systems are privately owned, and the remainder are publicly owned, such as those owned by cities or counties.

In 2003, the Legislature passed the Municipal Water Law, which included statutory requirements designed to address municipal water use efficiency, tasking the Department of Health (DOH) with their implementation. The statute (RCW 70A.125.170) was designed to advance water use efficiency through two methods: first, decreasing customer use of water by expanding water systems' conservation efforts, and second, ensuring the efficient supply of water by minimizing water loss as it travels through the distribution system. DOH received some funding through 2007 to create and begin implementation of a water use efficiency program to implement the law.

This audit assessed the effectiveness of Washington's water use efficiency regulations as administered by DOH, and explored opportunities to improve the results.

The Department of Health can help municipal water suppliers minimize water loss by better managing supplier data and using industry leading practices (page 13)

Most municipal water suppliers reported water use efficiency data to DOH, as required by agency rules. However, DOH's inventory of municipal water systems was inaccurate, and DOH has not maintained current contact information for some municipal water suppliers. DOH has already begun to improve the accuracy and completeness of its inventory. The water use efficiency data DOH maintains is incomplete and often unreliable for two main reasons: DOH does not collect all supplier data required by its rules, and the agency does not use some data it does collect. In addition, DOH did not identify which water systems were exempt from metering requirements. Because its data is unreliable, DOH cannot accurately determine compliance with its water use efficiency regulations.

DOH does not use or require industry leading practices that could help improve the reliability of water loss calculations. For example, water audits and data validation could help suppliers better understand and manage water loss. Changing the standard for water loss from percentage lost to an alternative benchmark could improve water system evaluations. DOH offered training on leading practices as part of a pilot, but has not implemented the project's final recommendations.

Water use efficiency rules disproportionately affect small water systems; DOH should address small system challenges and expand assistance (page 22)

Multiple factors contribute to the burden small water systems face in complying with DOH's regulations. Small water systems make up 90 percent of all municipal water systems but serve only 7 percent of customers. Small water systems struggle to comply with water use efficiency rules because they typically lack funds to do so. DOH recognized its rules were disproportionately burdensome for small water systems when it proposed them – a burden that persists. A sized-based regulatory floor for water systems, as the U.S. Environmental Protection Agency uses, would reduce the burden on small systems.

Water suppliers, and in particular smaller system suppliers, lack access to essential technical assistance from DOH. Portions of DOH's water use efficiency website had nonworking or outdated links; the agency has begun to correct them. Surveyed suppliers had suggestions to improve DOH's minimal hands-on technical assistance. DOH might consider using technical assistance practices currently in place in other states.

In response to increasingly limited state water resources, the Legislature could reassign responsibility for water conservation from DOH to the Department of Ecology (page 30)

DOH created rules around improving water conservation, but has focused few resources on implementing them. Water suppliers themselves recognized the importance of conservation in their survey responses. The Department of Ecology is well suited to provide water conservation oversight and assistance. Regardless of where future responsibility lies, better coordination on conservation issues could help ensure consistent policies and rules in the future.

Recommendations (page 34)

We made a series of recommendations to help DOH address issues we found in its regulation of municipal water loss. We recommended the agency collect all information from suppliers required by its rules, and ensure calculations used to determine water system compliance use only reliable data. Additional recommendations address improving assistance to suppliers, such as improving the website, developing a supplier forum, and pursuing results from DOH's water use efficiency pilot project.

We also recommended the Legislature grant DOH the authority to exempt small municipal water systems from water loss regulations, with the goal of easing the regulatory burden on these systems. Finally, we recommended the Legislature revise the water use efficiency portion of the Municipal Water Law to grant the Department of Ecology oversight of conservation planning and implementation.

Next steps

Our performance audits of state programs and services are reviewed by the Joint Legislative Audit and Review Committee (JLARC) and/or by other legislative committees whose members wish to consider findings and recommendations on specific topics. Representatives of the Office of the State Auditor will review this audit with JLARC's Initiative 900 Subcommittee in Olympia. The public will have the opportunity to comment at this hearing. Please check the JLARC website for the exact date, time, and location (www.leg.wa.gov/JLARC). The Office conducts periodic follow-up evaluations to assess the status of recommendations and may conduct follow-up audits at its discretion. See **Appendix A**, which addresses the I-900 areas covered in the audit. **Appendix B** contains information about our methodology. **Appendices C and D** contain summaries of water use efficiency laws and rules.

Background

Washington's rapid population growth and changing climate mean water management is an increasingly vital responsibility of the state

Rapid population growth and warmer temperatures from changing climate are putting increasing pressure on the availability of fresh water in many parts of North America. In Washington, the population has grown by more than 15 percent over the past decade; the five largest cities have roughly 20 percent more residents than in 2010. Washington's overall population reached nearly 8 million people in 2023.

At the same time, the Pacific Northwest, with its Western and Mountain neighbors, is experiencing more frequent drought conditions. In late July 2023, the Washington State Department of Ecology (Ecology) issued a drought emergency for watersheds in parts of 12 counties. Ecology may declare a drought when there is less than 75 percent of normal water supply and the agency determines there is risk of undue hardship. Ecology reported that May and June 2023 were the state's fourth warmest and 11th driest since 1895, receiving less than half the usual rainfall.

Scientists expect temperatures to continue to rise as the global climate changes, meaning pressure on water supplies across the state is likely to worsen. In addition to harmful effects of drought on the state's businesses and farms, warmer temperatures threaten mountain snowpack. Flooding from rapidly melting snowpack in early spring can damage roads and communities, as well as compromise the quality and safety of the water supply. Conversely, reduced snowpack also diminishes streamflow in late summer, threatening water needed for irrigation and salmon migration. Actively managing and conserving Washington's water resources are fast becoming even more important and necessary responsibilities for the state.

A complex water landscape serves Washington's communities and industries with fresh water

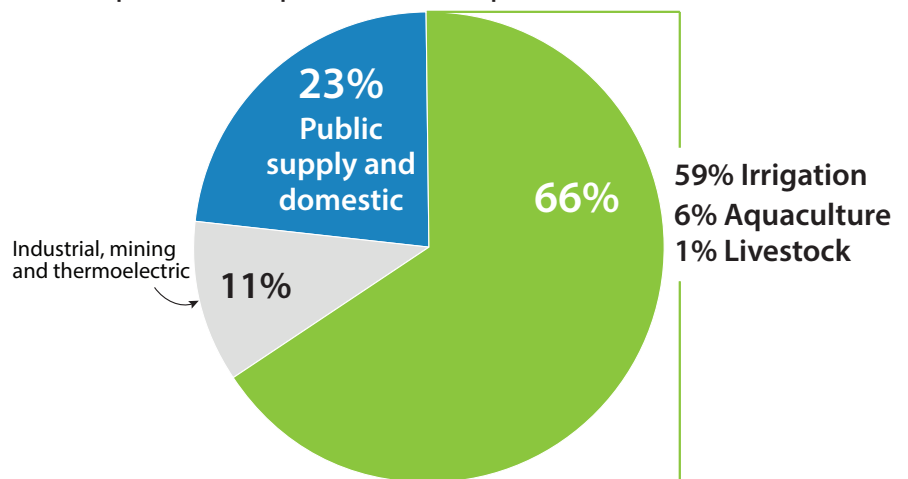
Irrigation and drinking water are the state's largest water uses

As Exhibit 1 shows, agriculture – including irrigation, livestock and aquaculture – uses a total of about 66 percent of the state's fresh water withdrawals, according to the most recent data from the U.S. Geological Survey. Irrigation alone accounts for around 59 percent. Another 11 percent is primarily used for industrial and mining activities. The remaining 23 percent is used for public supply and domestic consumption, or more simply put, drinking water.

The state's drinking water is largely provided by about 17,700 water systems that are regulated by the Washington State Department of Health (DOH) for quality and safety. Those water systems fall into two categories, Group A and Group B, illustrated in Exhibit 2.

Group A systems are large, serving at least 15 service connections or at least 25 people for more than 60 days a year. Group B systems, though far more numerous – making up three-quarters of all water systems – are small, each one serving fewer than 15 connections. These systems do not meet the threshold for Group A, and are largely unregulated except for water quality and safety.

Exhibit 1 – About 66 percent of Washington's fresh water withdrawals support agriculture and related purposes, with 23 percent for public consumption



Source: U.S. Geological Survey data, 2018.

Exhibit 2 – Group A large water systems are fewer in number but each serves more connections

Group A large water systems: 24% of all systems

- 🔥 Provides 98% of drinking water
- 🔥 15+ connections
- 🔥 Highly regulated

Group B small water systems: 76% of all systems

- 💧 Provides 2% of drinking water
- 💧 Fewer than 15 connections
- 💧 Regulated for water quality only

Unknown number of exempt and unidentified wells

Note: Drinking water percentages are estimates based on U.S. Geological Survey data.
Source: U.S. Geological Survey, DOH water use efficiency rules and water system data.

Municipal water systems provide most of the state’s residents with fresh, consumable water

Municipal water systems are the focus of this audit. Municipal systems are a subset of Group A systems that meet specific criteria, including that they must serve 15 or more residential service connections (see sidebar). Statewide, 2,065 (about 12 percent) of Washington’s 17,700 water systems are municipal systems. However, that 12 percent supply drinking water to 98 percent of water system customers. The remaining two percent of customers receive drinking water from either Group A non-municipal systems or Group B small systems.

Municipal systems vary in both size and ownership type. Two-thirds are owned by private companies, investors or homeowners’ associations. The remaining third are owned by governments or special districts. Typical municipal water system owners include:

- Cities and towns
- Special districts (water or sewer, ports, PUDs, fire, schools)
- Counties
- State government
- Federal government

Municipal water systems vary dramatically by size. The smallest serve 15 residential connections, the point at which they qualify to be a municipal water system. Nearly 90 percent of municipal systems are considered small, with fewer than 1,000 service connections. In contrast, 59 systems are the state’s largest, each serving 10,000 or more connections, providing water to more than 70 percent of all municipal water system customers. Fifty-four of those 59 systems are publicly owned; the largest system – Seattle Public Utilities – serves more than 177,000 connections, 165,000 of which are residential.

Municipal water suppliers serve residents all over the state, as shown in the map in **Exhibit 3** on the following page. In some largely rural counties, municipal suppliers may serve a lower percentage of the population. This is in part because more people are likely to have individual wells or be served by small, Group B water suppliers.

Municipal water systems are Group A systems that serve water:

To 15+ residential connections

Or

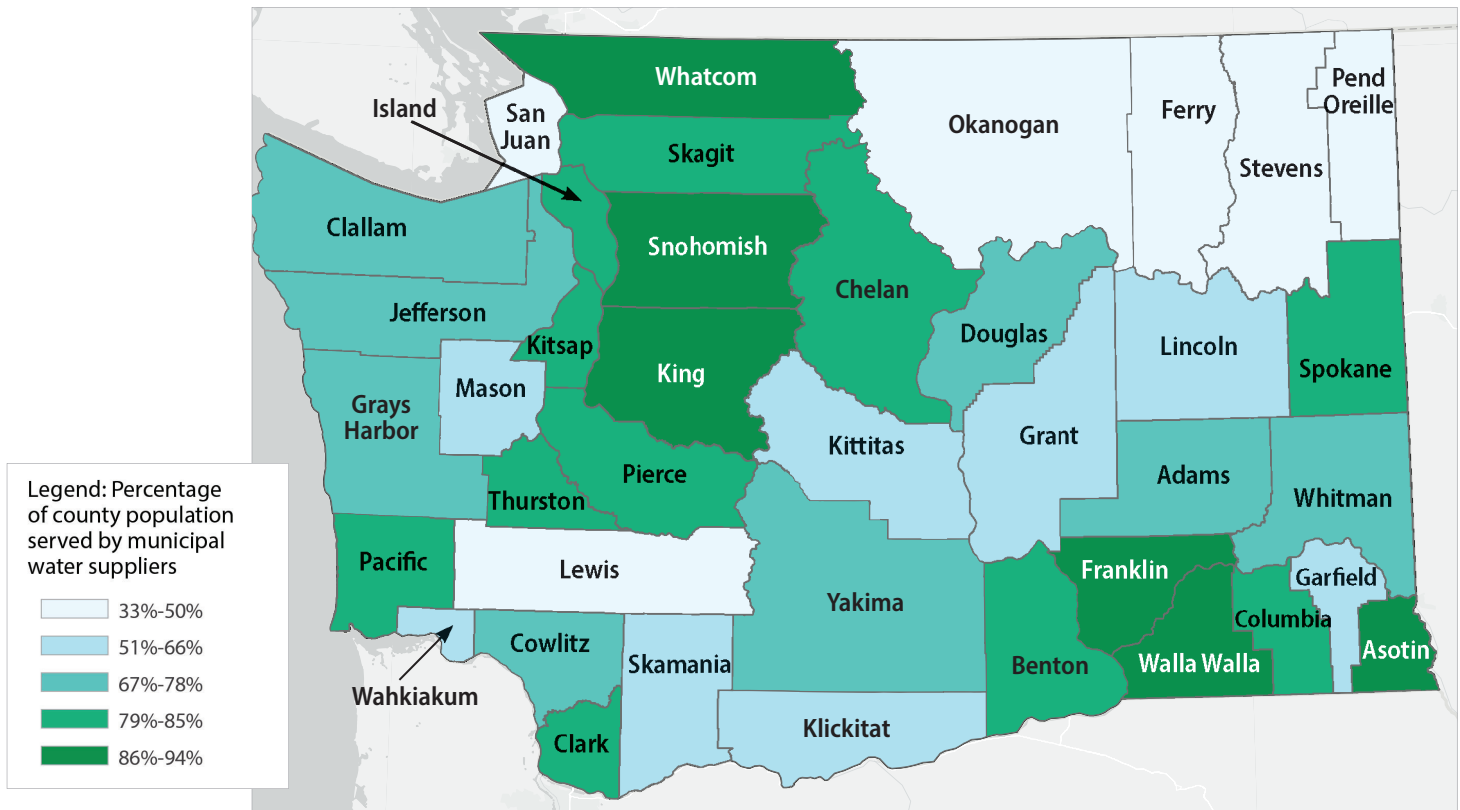
For residential purposes to a non-resident population (such as vacation homes) of 25+ for more than 60 days annually

Or

For governmental purposes (such as irrigating parks)

Exhibit 3 – In densely populated counties, higher percentages of residents are served by municipal water suppliers

Darkest color indicates highest percentage of municipal water customers



Sources: DOH water system data, OFM population data.

In 2003, the Legislature designated the Department of Health (DOH) to implement its municipal water use efficiency regulations

The statute addressed both water conservation and water loss

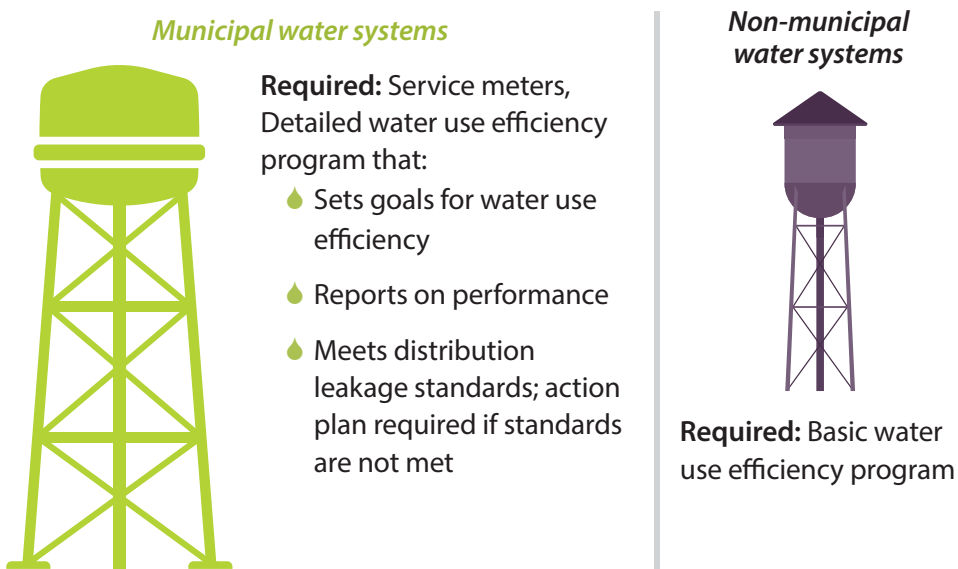
The 2003 Municipal Water Law gave additional flexibility in managing water rights to some water suppliers, who are the owners or managers of what were defined as municipal water systems. The law created new requirements for municipal water suppliers that were designed to advance water use efficiency through two methods: first, by expanding water systems' conservation efforts to decrease customers' water use, and second, by ensuring the efficient supply of water by minimizing water loss as it travels through the distribution system.

The law placed responsibility for regulating both components of water use efficiency with DOH. The agency was tasked with developing rules to ensure municipal water suppliers:

- Developed water conservation goals
- Funded and implemented conservation activities
- Reported conservation performance
- Evaluated the feasibility of adopting rate structures that encourage conservation
- Limited water loss to a standard no lower than 10 percent of water produced or purchased, or a standard based on an alternative measure

Responsibilities for municipal water suppliers versus non-municipal water suppliers, who own or manage the two types of Group A systems, are illustrated in Exhibit 4.

Exhibit 4 – Municipal water suppliers are subject to the state’s water use efficiency regulations, administered by DOH



Source: DOH water use efficiency rules and Water Use Efficiency Guidebook.

DOH received funding through 2007 to create its rules and begin implementing its water use efficiency program

DOH received some funding in the 2003-05 budget to develop its water use efficiency program. The Legislature appropriated a small amount of funding through the state general fund, while the bulk of the funding (nearly \$1 million) came from a temporary annual fee of 25 cents per residential connection that DOH collected. Both of those funding streams ended in 2007. DOH officials said the

agency paid for the program after funding ended in part through review fees of water system plans and, more recently, through state Foundational Public Health Funding support. Since 2007, DOH has allocated staff funding amounting to 0.55 full-time equivalent employee to the program, split between seven positions.

This audit assessed the effectiveness of Washington’s water use efficiency statute, and explored opportunities to improve its results

This audit was designed to answer the following questions:

1. To what extent do Washington’s municipal water suppliers comply with water use efficiency requirements?
2. What opportunities exist for the Department of Health and municipal water suppliers to help improve water use efficiency in Washington?

Audit Results

The Department of Health can help municipal water suppliers minimize water loss by better managing supplier data and using industry leading practices

Results in brief

Most municipal water suppliers reported water use efficiency data to the Department of Health (DOH), as required by agency rules. However, DOH's inventory of municipal water systems was inaccurate, and DOH has not maintained current contact information for some municipal water suppliers. DOH has already begun to improve the accuracy and completeness of its inventory. The water use efficiency data DOH maintains is incomplete and often unreliable for two main reasons: DOH does not collect all supplier data required by its rules, and the agency does not use some data it does collect. In addition, DOH did not identify which water systems were exempt from metering requirements. Because its data is unreliable, DOH cannot accurately determine compliance with its water use efficiency regulations.

DOH does not use or require industry leading practices that could help improve the reliability of water loss calculations. For example, water audits and data validation could help suppliers better understand and manage water loss. Changing the standard for water loss from percentage lost to an alternative benchmark could improve water system evaluations. DOH offered training on leading practices to participants of a pilot, but has not implemented the project's final recommendations.

Most municipal water suppliers reported water use efficiency data to DOH, as required by agency rules

DOH's regulations require municipal water suppliers to annually report information about both conservation efforts and efforts to minimize water loss. To facilitate the reporting process, DOH provides an online form that suppliers use to submit their information. Suppliers provide data about several areas of their operations, such as total water production (including purchases) and consumption, percent of metered service connections, and conservation goals.

DOH offers guidance on its website about how to complete the reporting form, with a companion worksheet to help suppliers gather the necessary data to fill out the report. DOH makes municipal water suppliers' reports available to the public on its website.

Nearly all suppliers submitted reports for 2021

Suppliers are required to report the previous year's information by July 1 of each year. Just over 90 percent of municipal water suppliers complied with reporting requirements, submitting their calendar year 2021 annual reports to DOH in 2022 (the most recent data available). Systems we categorized as small (those with less than 1,000 connections) had the lowest rate of reporting. Small systems and the challenges they faced in complying with water use efficiency requirements are discussed in the next chapter.

DOH's inventory of municipal water systems was inaccurate

Municipal water suppliers own or manage the state's 2,065 municipal water systems. According to DOH's data, there are 880 municipal water suppliers, with some owning or managing more than one system. An accurate list of municipal water systems would allow DOH to understand which systems must adhere to its water use efficiency regulations. DOH collects water use efficiency information provided by water suppliers and maintains that information in several data sets. The audit found a number of inconsistencies, suggesting that DOH has not clearly and accurately identified all the state's municipal water systems. For example, in one data set, 251 Group A systems were not classified as municipal water systems despite meeting the statutory definition of serving 15 or more residential connections. Another set, meant to contain only information about municipal water systems included four Group B systems, which by definition cannot be municipal.

DOH has not maintained current contact information for some municipal water suppliers

A complete and accurate contact list of municipal water suppliers would allow DOH to easily inform them about matters such as noncompliance, or to provide helpful information. We used the agency's contact list to email a short questionnaire to the 880 suppliers listed, asking for their perspectives about water use efficiency and DOH's program. About 5 percent of addresses were invalid, affecting our survey results (see sidebar).

About our supplier survey

It asked six questions of water suppliers, concerning the best ways to ensure adequate fresh water in the future and challenges they faced in complying with current regulations, if any. About 5 percent of contact data in the agency's list proved invalid; these surveys never reached the intended person. From the remainder, we received 105 replies, for a 13 percent response rate.

DOH has already begun to improve the accuracy and completeness of its inventory

During the audit, we informed DOH staff about the discrepancies between data sets and about the incorrect email addresses. They acknowledged the problems and began to correct issues, including correcting the invalid email addresses. Program staff said they rely on regional office staff to identify which water systems are municipal; turnover at those offices has led to inconsistencies in the data sets. They also said they reminded regional office staff about the process to identify municipal water systems.

The water use efficiency data DOH maintains is incomplete and often unreliable

DOH does not collect all supplier data required by its rules and does not use some data it does collect

The water use efficiency statute required DOH to develop rules around reporting to ensure that suppliers regularly evaluated and reported their water conservation performance. DOH's rules specify the information that suppliers must report in their annual performance reports. However, DOH's reporting form does not ask suppliers to report all information its rules require, nor does it provide space for suppliers to report some information. For example, rules require suppliers to describe the activities undertaken to minimize distribution system leakage; however, the form does not include a field for this topic.

In addition, DOH's reporting form allows suppliers to submit reports without entering all required data. For example, reports can be submitted without data for total annual production or total use, the two data points used to determine water loss. Furthermore, DOH does not transfer some information suppliers report, such as conservation goals, into its data sets, where staff could use the data to monitor and assess water supplier performance.

Exhibit 5 (on the following page) sets out seven required reporting areas where the form does not support DOH's own rules.

Exhibit 5 – DOH does not collect all water supplier information that its rules require

Required annual report elements [WAC 246-290-840 (2)]	Field in DOH reporting form?	Field must be filled in to submit report?	Data transferred from form to DOH database?
Total annual production	✓	X	✓
Annual water distribution system leakage (production minus use)	✓	Automatically calculated by DOH database	✓
Water use efficiency goals	✓	X	X
Schedule for achieving the goals	X	Not applicable	Not applicable
Progress toward achieving goals	✓	X	Partially *
Status of meter installation	✓	✓	✓
All actions taken to minimize leakage	X	Not applicable	Not applicable

*Note: The reporting form contains two places where suppliers can provide information about progress in reaching their goals. DOH stated information from one is in the database.

Source: Water use efficiency regulations, DOH’s reporting form, DOH data.

DOH did not identify water systems that were exempt from metering requirements

Accurately metering water production and usage allows suppliers to charge their customers based on their consumption of water, to recognize when water is leaking from their distribution system, and to understand the results of efforts to reduce water use. Metering is an essential part of long-term sustainable water management. A quarter of respondents to our survey identified metering as one of the most important efforts the state has undertaken to help secure its future water supply.

DOH regulations required municipal water systems to install service meters for each connection by late January 2017. Where source meters measure the overall supply of a water system (production plus purchases), service meters measure individual usage at each connection.

Some suppliers whose customers were considered “clustered entities” (see sidebar) were exempted from the rule: they may instead measure all water use through a single service meter. In its data, however, DOH never identified which municipal water systems fit the criteria for clustered entities, and therefore does not know which systems qualified for the exemption.

Clustered entities include:

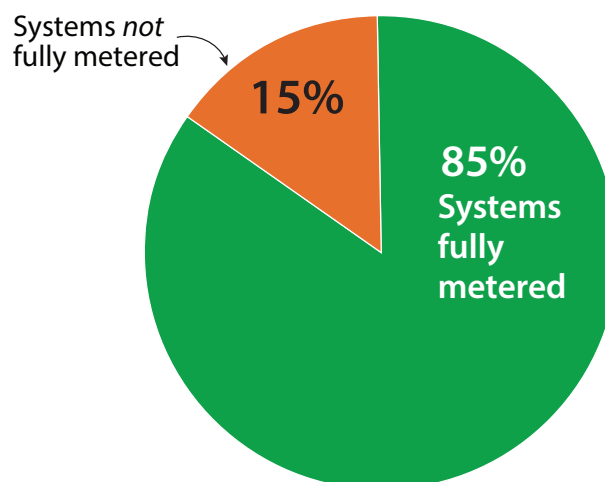
- Campgrounds
- Recreational vehicle parks
- Mobile home parks
- Buildings with multiple units, such as apartment buildings
- Complexes with multiple buildings served as a single connection, such as business parks

Because its data is unreliable, DOH cannot accurately determine compliance with its water use efficiency regulations

Because DOH has not identified which water systems are clustered entities and thus exempt from metering requirements, the agency cannot accurately estimate to what extent municipal water systems are fully metered. As part of our analysis to determine the extent to which systems were fully metered, we attempted to identify clustered entities based on key words in their names, such as “mobile,” “apartment,” or “RV.” We removed systems that met our criteria from the analysis. Of the remaining systems that reported 2021 data, we found 85 percent were fully metered, illustrated in Exhibit 6.

Even though the deadline for completing the installation of service meters was early 2017, 15 percent of municipal water systems remain not fully metered. DOH staff said they believed the compliance rate was closer to 100 percent.

Exhibit 6 – 85 percent of 1,758 municipal water systems were fully metered in 2021



Note: Clustered systems and systems that did not submit reports are not included.

Source: Analysis of DOH metering data.

DOH determines water system compliance with the water loss standard using a flawed calculation

Another regulatory requirement is that municipal water suppliers maintain system water loss at or below 10 percent. Ongoing excessive water loss through the distribution system is expensive for both customers and water suppliers, as this water has already been processed into drinking water. The audit found DOH could not calculate a reliable water loss rate for municipal water suppliers for two reasons. Much of the data was unreliable in the first place, and the water loss calculation used that unreliable data without regard for its reasonableness.

DOH’s database automatically calculates the average loss rate for each system using water suppliers’ self-reported data about water production and customer use over the previous three years (called a three-year running average). That three-year average loss rate is then compared to the 10 percent standard to determine whether a water system is compliant with the law.

However, we found much of the data used in the calculations violated DOH’s own data validity guidance. DOH’s guidance warns that water loss rates are *likely inaccurate* when they are any of these:

- Negative (where water use exceeded production)
- Zero (where water production and use were identical)
- Less than 2 percent of water production
- More than 50 percent of water production

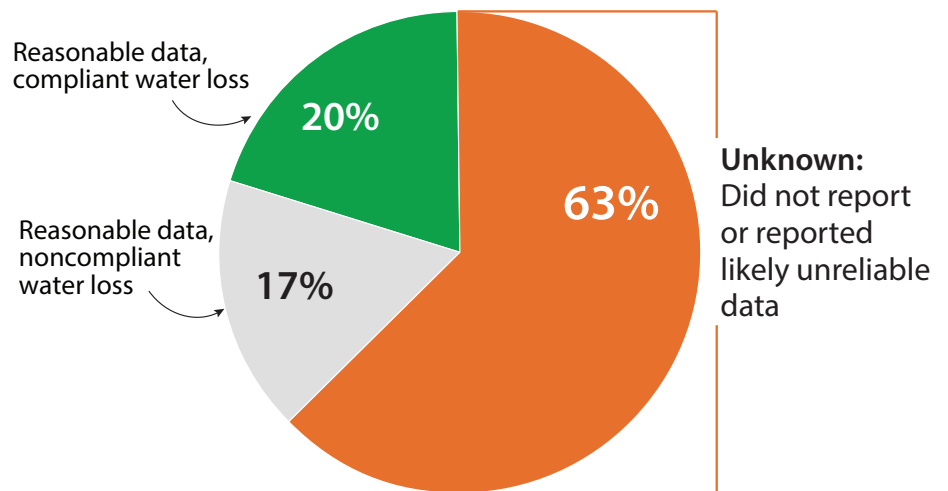
Because many water systems’ average loss rate calculations were based on unreliable data, the results were also likely incorrect. Yet those loss rates are used to establish a system’s compliance with the law. This means DOH does not have a clear understanding of which systems are out of compliance with the water loss standard, and therefore cannot target assistance or enforcement action to help bring them into compliance. DOH staff told us they have sent out letters to those systems whose loss rates exceeded 10 percent; however, the agency does not calculate an overall compliance rate for all systems.

As we did to assess DOH’s metering data, we conducted our own analysis to determine overall system compliance with the water loss standard in 2021. Because DOH instructs clustered systems to report water loss using a different method, we again removed these systems from the analysis. We grouped the remaining systems into three categories:

- **Unknowns** – Those that did not report in one or more of the previous three years, or reported data that was likely unreliable
- **Reasonable data, fully compliant** – Those that reported reasonable data in previous three years, and were compliant with the 10 percent water loss standard
- **Reasonable data, noncompliant** – Those that reported reasonable data but whose water loss rate exceeded 10 percent

As Exhibit 7 shows, nearly two-thirds (63 percent) of 1,917 water systems fell into the “unknown” category, which meant we could not assess their compliance. Of the remainder, 20 percent of systems were compliant with reporting and water loss rates, while 17 percent were not in compliance. Given the small percentage of water systems that had reported reasonable information and so could be used in our analysis, the true rate of compliance could be higher or lower.

Exhibit 7 – Unreported or unreliable data meant water loss could not be calculated for 63 percent of 1,917 water systems



Note: Clustered systems are not included.
 Source: Analysis of DOH water-supplier data.

DOH does not use or require industry leading practices that could help improve the reliability of water loss calculations

Water audits and data validation could help suppliers better understand and manage water loss

The American Water Works Association (AWWA) is an international nonprofit organization dedicated to the effective management of water. Its membership includes more than 4,300 utilities that supply around 80 percent of all drinking water to U.S. residents. It offers education and training to water professionals, including conferences, research and publications. AWWA also develops and promotes industry standards.

Managing the efficiency of water supply, including water loss, is a key focus of AWWA's efforts. One tool AWWA strongly recommends suppliers use is a "water audit." This tool helps suppliers understand and improve their water system's efficiency by quantifying usage and loss. The goal is to make it easier to identify opportunities for better management. AWWA developed a water audit methodology that provides a thorough accounting of a system's water losses and an understanding of their sources, such as through leakage, data errors or metering inaccuracies. In AWWA's audit method, all volumes of water are considered either beneficial consumption or wasteful loss, and therefore no water is unaccounted for. AWWA's water audit software is available online at no charge to all water utilities. The software is the industry standard tool for conducting a water audit to help utilities with cost-effective water loss control and revenue recovery.

"Water audit validation" is another tool that AWWA recommends. It is the process of examining the data used in a water audit to improve the audit's reliability, and evaluating and documenting the data's uncertainty. Audit validation helps inform actions water suppliers plan to take as a result of their audits.

While Washington does not require water suppliers to conduct AWWA water audits or validate data, some other states do. Both California and Georgia have implemented comprehensive water audit programs based on AWWA's methodology that include formal training, structured audit data collection, and data validation. Their programs help water suppliers better understand their water systems' operations, and help them reduce water losses. In New Hampshire, water systems must keep their water loss levels below 15 percent; only when losses exceed that standard does the state require them to conduct a water audit using AWWA's methodology. Other states, while not requiring audits or data validation, encourage their use and provide extensive training and technical assistance on the audit software. One example of a voluntary program is Colorado's Water Loss Initiative.

Changing the standard for water loss from percentage lost to an alternative benchmark could improve system evaluations

Both water audits and data validation are designed to help a water supplier use reliable data to understand and manage losses based on their causes. A water loss standard is used to determine whether a water system complies with regulatory requirements.

In Washington, DOH's rules set a water loss standard of 10 percent, based on the difference between total water production and total use. For each system, the difference, or water loss, is quantified as a percentage of water production and must remain at or below the standard. AWWA recommends that water utilities, regulatory agencies and other industry stakeholders discontinue use of a percentage-based standard, considering it a misleading and unreliable measure of utility performance. Instead, it recommends they develop a target that combines the volume of water loss with an assessment of the financial impact of the loss.

AWWA points out that, among other problems, a simple percentage measure reveals nothing about water volume, cannot distinguish between different types of losses, and can be greatly affected by changing levels of consumption. It also recommends that loss reduction targets be tailored to each water system, rather than the percentage target's "one size fits all" approach such as DOH's current 10 percent target for all systems.

While the water use efficiency statute established the floor for a water loss standard (not less than 10 percent), it also granted DOH the authority to establish a different standard "where alternatives provide a better evaluation of the water system's leakage performance." DOH has continued to use the 10 percent standard since the program's inception.

DOH offered training on leading practices to participants of a pilot, but has not implemented the project's final recommendations

In 2017 and 2018, DOH conducted a water use efficiency pilot project involving 10 volunteer municipal water systems. Water suppliers for those 10 systems received training on the AWWA water audit methodology, conducted an audit, and completed data validation. DOH concluded that the pilot program improved participants' insight into system management, data source reliability and water loss. The agency conducted a survey at the end of the project to evaluate participants' experiences and their desire for additional support. DOH noted that feedback from participants was overwhelmingly positive. Most respondents preferred the AWWA methodology for leakage tracking and management over the state's required leakage calculation, and believed it should be taught to utilities across the state. One participant said:

"This training was excellent! The process was fairly easy to understand, while being incredibly useful and hugely informative about loss in the system."

DOH's report on the pilot project provided four recommendations to the state. They included: adopting the AWWA water audit methodology, providing the necessary training to complete the water audits, validating each audit prior to submission, and moving from a percentage water loss calculation to one that is based on volume. DOH officials said they have not adopted any of the recommendations because the cost to do so was prohibitively high for both the agency and water systems.

Water use efficiency rules disproportionately affect small water systems; DOH should address small system challenges and expand assistance

Results in brief

Multiple factors contribute to the burden small water systems face in complying with regulations set by the Department of Health (DOH). Small water systems make up 90 percent of all municipal water systems but serve only 7 percent of customers. Small water systems struggle to comply with water use efficiency rules because they typically lack the funds to do so. DOH recognized its rules were disproportionately burdensome for small water systems when it proposed them – a burden that persists. A size-based regulatory floor for water systems, as the U.S. Environmental Protection Agency uses, would reduce the burden on small systems.

Water suppliers, and in particular smaller system suppliers, lack access to essential technical assistance from DOH. Portions of DOH's water use efficiency website had nonworking or outdated links; the agency has begun to correct them. Surveyed suppliers had suggestions to improve DOH's minimal hands-on technical assistance. DOH might consider using technical assistance practices currently in place in other states.

Multiple factors contribute to the burden small water systems face in complying with DOH's regulations

Small water systems make up 90 percent of all municipal water systems but serve only 7 percent of customers

When DOH first developed its water use efficiency rules, it devised categories to classify water systems by size. For our analysis, we classified municipal water systems by size based on DOH's groups, with this result:

- Small — water systems with less than 1,000 connections
- Medium — systems with 1,000 to 9,999 connections
- Large — systems with 10,000 or more connections

Most municipal water systems fall into the small category.

- Small — 1,819 systems
- Medium — 187 systems
- Large — 59 systems

While nearly 90 percent of municipal water systems are small, those systems serve only 7 percent of all municipal customers. Conversely, the large-system group comprises only 3 percent of all systems but supplies water to more than 70 percent of customers. Most small systems are privately owned, while most large systems are publicly owned.

Small water systems struggle to comply with water use efficiency rules because they typically lack the funds to do so

The most mentioned barriers to compliance that systems mentioned in response to our water supplier survey were insufficient funds and the difficulty of finding leaks – and most of the respondents that cited these barriers were small system operators. Many of their responses identified barriers to compliance that were driven by inadequate funds – either to operate more efficiently or to make improvements that would enhance their compliance with state regulations. **Exhibit 8** lists several of these challenges; below, we summarize the responses of small system operators.

For example, small systems may lack adequate funding for administrative support or for staff to read meters. They are often run by one person, and in some cases, unpaid volunteers. Of the respondents that mentioned the importance of funding for infrastructure, 74 percent were either small systems or expressly mentioned this as a need for small systems. Larger systems can collect revenue from a much larger population, making each customer’s contribution to infrastructure and administrative expenses much smaller. In addition, while public systems are typically able to issue bonds or levy taxes to help fund new or improved infrastructure, private systems cannot.

The survey asked water suppliers broadly about issues they consider will be most important to solve to ensure sufficient water resources into Washington’s future. It also asked what barriers they faced in achieving and maintaining compliance with existing regulations. Roughly 15 percent of respondents, from systems of all sizes, indicated assistance to small systems was very important.

Exhibit 8 – Challenges small water systems face today often involve money

- ◆ Cannot afford multiple staff for administrative support
- ◆ Cannot afford to replace aging infrastructure:
 - ◆ Limited ability to raise funds as public systems can
 - ◆ Limited access to grants and loans
- ◆ May not have funds to install and read meters
- ◆ Great difficulty and high costs to detect leaks on miles of pipe that do not rise to the surface

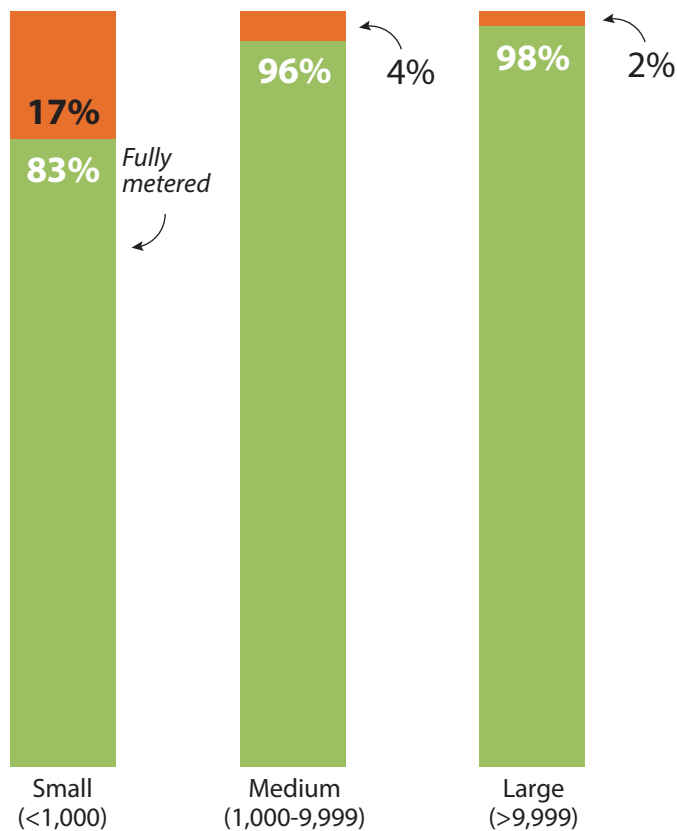
Source: Supplier responses to audit survey.

Small systems struggled with compliance in metering and water loss standards

Using the same method we applied to municipal water system data to determine overall compliance with both metering and water loss requirements, we analyzed the compliance variations between small, medium and large water systems. We found that, compared to large systems, small systems were less likely to be fully metered (shown in Exhibit 9) and also less likely to be in compliance with the 10 percent water loss standard (shown in Exhibit 10).

Exhibit 9 – Small municipal water suppliers were less likely to be fully metered

Data for reporting year 2021

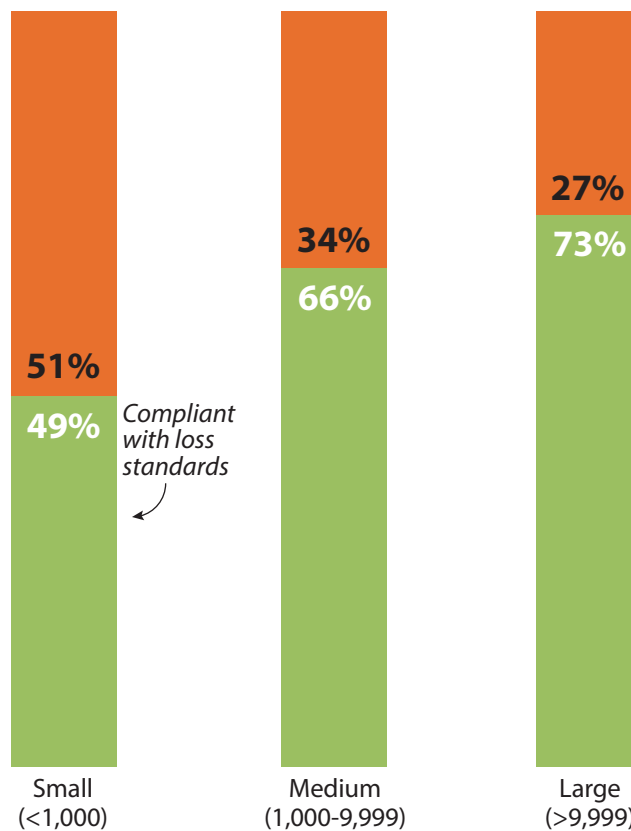


Water system size by number of connections

Source: Auditor analysis of DOH metering data.

Exhibit 10 – Small suppliers were also less likely to be compliant with water loss standards

Data for reporting year 2021



Water system size by number of connections

Source: Auditor analysis of DOH leakage data.

DOH recognized its rules were disproportionately burdensome for small water systems when it proposed them – a burden that persists

In Washington, regulatory agencies must consider the financial effects of proposed new or updated rules that affect businesses. If expected costs to businesses exceed a minor cost threshold, the agency must complete and submit a Small Business Economic Impact Statement with its proposed rule. The purpose of developing the impact statement is to understand the extent to which the rule will disproportionately affect small businesses compared to larger ones, if at all. If the cost of compliance is proportionately higher for small businesses, the agency must consider methods for mitigating those costs, where feasible. This could include reducing or eliminating substantive regulatory requirements or delaying compliance.

When DOH proposed its water use efficiency rules in 2006, it completed a Small Business Economic Impact Statement, which included a comprehensive comparison of costs that would be imposed on small, medium and large system water suppliers, based on the number of their connections. DOH determined that the rules did, in fact, impose a disproportionate impact on small water system suppliers. As required, the agency offered mitigation strategies specifically designed to reduce the burden on small businesses, including a one-year delay in reporting and simplified planning requirements. (See **Exhibit 11** for a summarized list.) However, the strategies introduced 17 years ago do not adequately address the greatest challenges small systems face today, described in Exhibit 8.

Exhibit 11 – Mitigation strategies for small water suppliers 2006 Small Business Economic Impact Statement

- Simplified requirements for source descriptions
- Simplified requirements for cost-effectiveness evaluations
- Number of efficiency measures based on size
- Not required to describe seasonal variations in consumption
- Reporting requirement delayed from 2008 to 2009
- Not required to assess savings from measures not implemented
- Not required to evaluate opportunities for reclaimed water

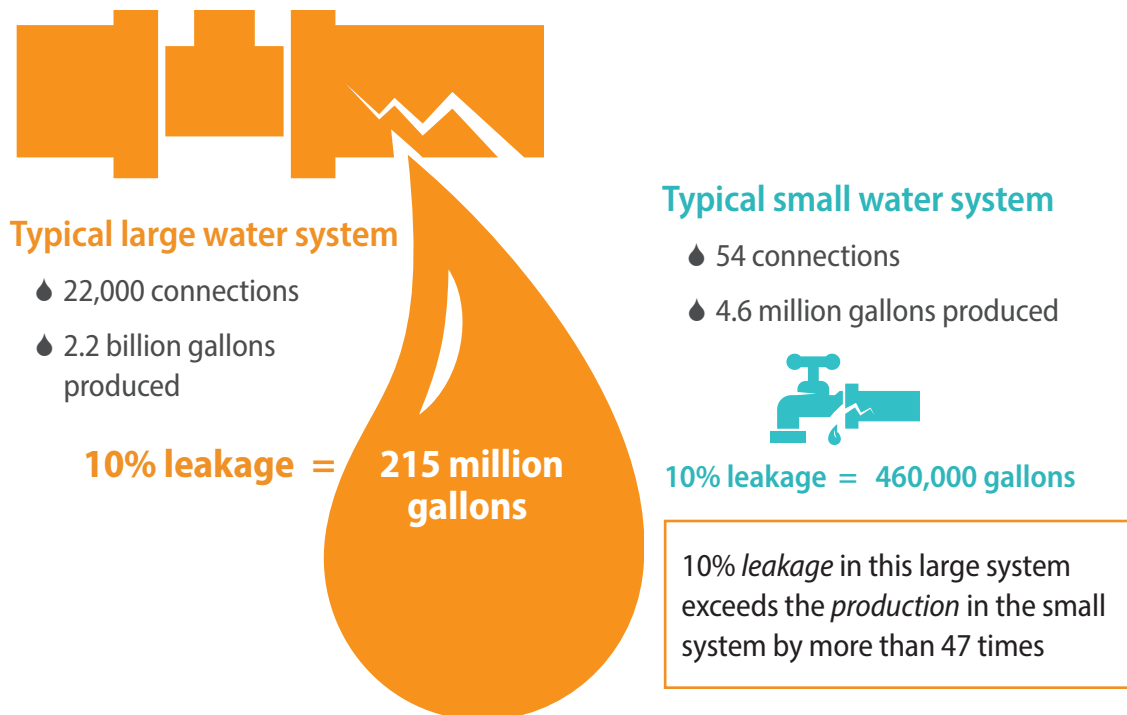
Source: DOH's proposed water use efficiency rules.

A size-based regulatory floor for water systems, as the U.S. Environmental Protection Agency uses, would reduce the burden on small systems

The volume of water use, and therefore water loss, varies enormously between smaller and larger water systems. For that reason, from a statewide perspective, it may make sense to focus regulatory efforts on the larger systems. To understand the magnitude of difference in water lost, we compared a 10 percent water loss rate, considered compliant in Washington, of two typical municipal water systems – one large and one small. A typical system in our analysis meant the system fell in the middle of the size bracket in terms of water production.

As Exhibit 12 illustrates, the volume of annual water loss by the large utility is 468 times greater than that of the small system. That loss of roughly 215 million gallons annually is 47 times greater than the entire production of the small system. These differences clearly have vastly different effects on Washington’s supply of fresh water. A 1 percent additional increase in each system’s water loss rate, putting both out of compliance, would result in an additional loss of 22 million gallons by the large utility but only an additional 46,000 gallons for the small system.

Exhibit 12 – Compliant leakage in a large system can exceed the entire production of a small system, by a significant magnitude



Source: Auditor prepared from DOH municipal water system data.

The U.S. Environmental Protection Agency (EPA) uses a regulatory floor in some of its federal drinking water regulations, applying those regulations only to water systems serving at least 3,300 people. In other cases, where regulations do apply to smaller systems, EPA grants states flexibility around enforcement and provides additional assistance to help them comply.

A number of states also apply their water loss regulations only to systems larger than a defined threshold. Thresholds vary by state – some use the number of connections, others use the population served, and still others base the threshold on annual water use. California, for example, only regulates water systems that have 3,000 or more connections, or those that use more than 3,000 acre-feet

of water annually. Georgia uses the EPA's standard and only regulates systems that serve more than 3,300 people. Rhode Island regulates water systems based on usage, regulating those that use at least 50 million gallons annually, which is equivalent in that state to around 600 connections.

The cumulative amount of water used by small systems is small, and the economic benefit of exempting them from DOH's water loss regulations may outweigh the environmental benefits of regulating them. Washington should evaluate whether a size threshold, such as those used by other states and by EPA, could benefit the state overall. For example, implementing a size threshold could allow DOH to focus its monitoring and regulatory resources on the largest suppliers, while freeing resources to provide better assistance to the smallest suppliers to help them better manage any water loss in their systems.

Water suppliers, and in particular smaller system suppliers, lack access to essential technical assistance from DOH

The water use efficiency statute required DOH to establish a compliance process with a graduated approach to enforcement. The water use efficiency program's rules describe a range of formal enforcement actions the agency may take against noncompliant water systems. They range from sending a notice of a violation, requiring appropriate corrective measures, and establishing a compliance schedule, to imposing civil penalties for severe violations.

However, DOH considered the program to be a "limited enforcement program" in which enforcement was largely informal. Formal actions can only be taken with the approval of the program director. DOH staff said that the agency has not taken any formal program enforcement actions since at least 2018. Without formal enforcement, DOH relies on technical assistance to help ensure water suppliers comply with its rules. That assistance is provided in the form of guidance and information to all water suppliers through its website. Agency staff also respond to questions and work directly with water systems during the planning process and through sanitary surveys.

Portions of DOH's water use efficiency website had nonworking or outdated links; the agency has begun to correct them

DOH maintains a website, consisting of 13 separate online pages, to provide water use efficiency information and resources to municipal water suppliers. Among the information and links provided on its website are descriptions of the rules, a link to the reporting system, and information about funding and water conservation.

However, we found nearly 40 percent of the links on the 13 pages were problematic, meaning they either did not work or contained outdated or incorrect information. The problematic links would otherwise have contained valuable information to help water systems, and in particular small systems, with the resources they need to comply with the law. For example, the link to eligibility criteria for DOH's own Drinking Water State Revolving Fund, which provides infrastructure assistance to eligible systems, was one that did not work.

In addition, some information on DOH's website contradicted the law and DOH's own rules, including inaccurate descriptions of the criteria for being considered a municipal water system. During the audit, we pointed out the problems, and staff have already begun to fix the hyperlinks and correct inaccurate information.

Surveyed suppliers had suggestions to improve DOH's minimal hands-on technical assistance

We asked DOH staff for examples of the hands-on technical assistance they provide in addition to website resources. Although they did not supply any specific examples, they said planners provide assistance during water system plan reviews and sanitary surveys. However, plan reviews take place only every 10 years and only for some systems; sanitary surveys take place only every three to five years. Staff also said that they provide technical assistance to suppliers that contact the agency about a variety of topics, including to clarify statutory requirements and to help them enter data into the system.

Surveyed suppliers said that finding leaks and funding repairs or upgrades were their biggest challenges. They asked specifically for information about or funding for new and emerging leak detection technologies, but no such information or guidance was available on the agency's website.

One supplier suggested DOH provide a forum where water system operators could share information and experiences about their challenges and successes. The supplier suggested the agency consider the following topics: new technologies, climate change impacts in Washington, funding options to reduce water loss, and advice from subject matter experts such as AWWA.

DOH might consider using technical assistance practices currently in place in other states

Some states offer extensive training to water systems; this is particularly true of states that rely on water audits and audit validation. For example, Colorado regulators offered a program in which state-funded consultants delivered hands-on training to any water system participating in the program. Training included how to conduct a water audit, use AWWA water audit software and validate data.

The California Department of Water Resources currently hosts a monthly webinar open to water suppliers across the country. Recent topics included regulatory requirements, leak detection, water loss control and water audits. A department employee also facilitates regular discussions among water regulators, where participants from various states discuss topics that range from how to provide the help suppliers need to leading practices in water use efficiency and lessons they have learned administering their programs. DOH staff said they have not yet participated in those discussions but are interested in doing so in the future.

In response to increasingly limited state water resources, the Legislature could reassign responsibility for water conservation from DOH to the Department of Ecology

Results in brief

The Department of Health (DOH) created rules around improving water conservation, but has focused few resources on implementing them. Water suppliers themselves recognized the importance of conservation in their survey responses. The Department of Ecology (Ecology) is well suited to provide water conservation oversight and assistance. Regardless of where future responsibility lies, better agency coordination on conservation issues could help ensure consistent policies and rules in the future.

DOH created rules around improving water conservation, but has focused few resources on implementing them

The water use efficiency statute required DOH to create rules around both water loss (supply efficiency) and conservation (use efficiency). The previous two chapters of this report focused on DOH's implementation of regulations pertaining to supply efficiency, or water loss. The statute also directed DOH to create rules that addressed water conservation, or reducing water use. The agency's rules required water suppliers to plan for future demand, establish conservation goals and a schedule for achieving them, identify actions to encourage conservation, and evaluate the feasibility of rate structures that encourage water conservation. Suppliers were further required to report their progress on reaching their conservation goals to DOH annually.

DOH staff, however, have done little to monitor water systems' progress with any of the conservation requirements. While DOH's water use efficiency reporting form asks suppliers to describe their conservation goals, the agency does not add that information to its database. The form does not ask about, nor have a place to report, the schedule for achieving those goals, although that information is also required.

DOH staff said they review a water supplier's conservation efforts twice: during the pre-plan review and again during the planning review process. The planning review process takes place only once a decade for larger systems, and only under certain circumstances for smaller systems, such as when a supplier applies for

funding from the Drinking Water State Revolving Fund. Given the gaps in information that DOH collects and the infrequent plan reviews, the agency has little knowledge of water suppliers' efforts to reduce water use.

Water suppliers recognized the importance of conservation in their survey responses

Water suppliers themselves clearly understand the importance of achieving water use reductions by their customers. About 60 percent of survey respondents identified conservation as one of the most important efforts the state should undertake to help ensure an adequate water supply for future generations. They mentioned conservation far more often than any other issue.

Most respondents who talked about the importance of conservation efforts specifically mentioned consumer education as essential to ensuring their customers understand why and how to conserve water. However, as discussed earlier, DOH's technical assistance – including materials it offers to help water suppliers educate customers about the importance of conservation – falls short of their needs. In addition to educating the public, some suppliers mentioned conservation incentives and the importance of goal setting to help conserve water. Many respondents described the particular importance of reducing water for outdoor use. Several mentioned the significance of xeriscaping, or landscaping with drought-resistant vegetation, instead of growing grass, which requires significantly more water to maintain.

Ecology is well suited to provide water conservation oversight and assistance

While DOH has already begun to correct the deficiencies in its regulation of water loss, it would need to significantly expand staff expertise to provide adequate oversight and assistance on conservation matters.

The state now has an opportunity to consider whether another agency may already have the expertise and experience to provide the state's water suppliers with the tools they need to implement meaningful conservation. Water conservation is a central tenet in the state's Water Resources Act (RCW 90.54) and Water Code (RCW 90.03). Through these laws, the Legislature identified the importance of conservation to the water resource management structure that Ecology oversees. Ecology has clear authority in this area and the responsibilities for conservation within the water use efficiency statute fit well within the agency's mission. Moving the program to Ecology would also help provide for more comprehensive water resource management in the state.

Furthermore, 2023 legislation directed Ecology to update the state's integrated climate change response strategy to prepare for, address and adapt to the effects of climate change. The conservation requirements contained in the water use efficiency statute fit very well under that umbrella.

Better agency coordination on conservation issues could help ensure consistent policies and rules in the future

No matter where future responsibility for overseeing the conservation requirements of the water use efficiency statute is placed, that function could benefit from improved coordination among agencies whose policies and rules affect municipal water systems' conservation efforts.

Along with DOH's current water use efficiency responsibilities, other state agencies regulate or assist water systems in various ways. DOH and Ecology already work together to approve water system plans. Ecology oversees the state's water rights, reviewing water rights compliance during system plan reviews. The Department of Commerce has programs that help leverage infrastructure funding for some public utilities. The Utilities and Transportation Commission (UTC) regulates the rates of certain privately-owned water companies.

Currently, UTC regulates the rates of those systems with more than 100 customers or when the annual per-customer expenditures on water exceed \$557 a year. As long as a system with fewer than 100 customers keeps its rates low enough to ensure per-customer spending is below that level, it is exempt from UTC's rate regulatory processes. The result is a situation in which one regulatory agency, DOH, has rules that advise suppliers to consider charging more for higher use to encourage conservation, while another, UTC, has a rule that may encourage some suppliers to avoid rate increases to remain under the threshold for regulation.

Coordination among agencies that play a role in municipal water suppliers' conservation efforts will help ensure agencies maintain consistent policies and rules around reducing water use across the state, to the extent possible. It also allows agencies to share information and combine efforts, where it makes sense. Ecology is well suited to facilitate this collaboration, because the 2023 legislation around the state's climate change response strategy already directs Ecology to coordinate with a number of agencies to update the strategy and to recommend a structure for the strategy's coordination and implementation.

State Auditor's Conclusions

When Washington created municipal water use efficiency requirements 20 years ago, many in our famously rainy state may have been skeptical of the need to conserve water. Today, however, our population is growing rapidly, and our water supplies are more constrained – most Washingtonians experienced drought conditions just over the past summer. The time is now to redouble our efforts to ensure sufficient fresh water for future generations, and this performance audit offers concrete recommendations to help do just that.

Better collection and use of data could help reduce the loss of drinkable water as it travels through municipal systems, which is one of the two main goals of the efficiency program. We found the data maintained by the Department of Health (DOH) is incomplete and often unreliable, in part because the agency does not collect all the information required by law.

DOH can also focus more of its efforts on helping small water systems, which make up 90 percent of all municipal systems in the state, understand and comply with its regulations. When we surveyed water suppliers, the most frequently mentioned barriers to compliance with efficiency requirements were insufficient funds and the difficulty of finding leaks – and most of the respondents that cited these barriers were small-system operators.

Water suppliers were also overwhelmingly concerned about the importance of conservation. Conservation is the second of the main goals of state water use efficiency requirements. We found those efforts may be better housed within the state Department of Ecology, which already has expertise in natural resource conservation. In addition, the agency was recently directed by the Legislature to update the state's response to climate change.

We only have to recall last year, when drought emergencies were declared in all of California's 58 counties, and sunken boats emerged from record-low water levels behind Hoover Dam, to know water supply is an important issue for Washington as well. This audit's recommendations offer a roadmap to reinvigorating our efforts to conserve that precious resource.

Recommendations

For the Legislature

To reduce the burden of water use efficiency regulations on small water systems, as discussed on pages 22-26, we recommend the Legislature:

1. Grant the Department of Health (DOH) authority to establish a system size floor for the regulation of water loss, below which municipal water systems would be exempt

To address the importance of water conservation to the state's future water supply, as described on pages 30-32, we recommend the Legislature:

2. Revise the statutes addressed by the Municipal Water Law (RCW 90.03, RCW 90.54 and RCW 70A) to grant the Department of Ecology oversight of all conservation planning and implementation associated with the water use efficiency portion of the law (RCW 70A.125.170)

For the Department of Health (DOH)

To address the numerous issues we found in the regulation of municipal water loss, as described in recommendations 4 through 13, we recommend DOH:

3. Prepare a strategic workplan, including timelines for completing the recommendations, a description of how the agency will devote resources to accomplish them, and benchmarks for achieving them

To ensure DOH's data sets contain complete and accurate information about municipal water suppliers and water systems, as described on pages 14-16, we recommend DOH:

4. Maintain a complete list of municipal water suppliers with current contact information
5. Review its reporting form and ensure it collects all information required by its rules

To ensure the agency can accurately determine water system compliance with its regulations, as described on pages 17-18, we recommend DOH:

6. Identify clustered systems that have unique metering requirements
7. Develop a method for automatically notifying agency staff of unreliable information reported by suppliers
8. Ensure the three-year average leakage calculation uses only reliable data, and establish notifications to alert staff when reliable data is not available
9. Establish automatic notifications in the database to alert the agency of noncompliant systems

To help municipal water suppliers improve water system efficiency and reduce water loss, as described on pages 19-21, we recommend DOH:

10. Pursue the possibility of implementing the 2017-2018 water use efficiency pilot project's four recommendations statewide

To provide assistance to help municipal water suppliers minimize system water loss, as described on pages 27-28, we recommend DOH:

11. Fix all nonworking website links to information and assistance currently on its website, and ensure all information is accurate
12. Develop a process to ensure website links are maintained with current and accurate information
13. Develop an annual forum for water suppliers to share their knowledge and experiences

Agency Response



STATE OF WASHINGTON

December 5, 2023

Honorable Pat McCarthy
Washington State Auditor
P.O. Box 40021
Olympia, WA 98504-0021

Dear Auditor McCarthy:

Thank you for the opportunity to review and respond to the State Auditor's Office (SAO) performance audit report, *"Assessing the Effectiveness of Washington's Water Use Efficiency Regulations."* The Department of Health (DOH) and the Office of Financial Management provide this response.

We agree on the importance of promoting efficient water use and water conservation in our public water systems. These measures are important steps to managing our state's water supplies to meet the needs of the people and the environment. In addition, we understand the importance of collecting accurate and useful information, and we realize that the state can improve how it responds to this data.

We appreciate the report's findings about the challenges small water systems face in implementing water efficiency rules (chapter 246-290 Part 8 WAC). DOH recently hired staff to modernize our approach to the water use efficiency program by updating guidance and providing training on water audits to instill a holistic approach to effective water accountability. Several of the SAO's recommendations closely align with the planned program improvements.

We also appreciate the SAO's recommendation to the Legislature that water conservation planning could be better suited at the Department of Ecology. We believe this recommendation merits strong consideration and further investigation. Initial discussions, including with Ecology, have underscored the complexity of this change, including questions about coordination between the agencies, implementation costs, and the impact on both regulated systems and other water users. The agencies will work to further understand these considerations, including seeking Tribal and stakeholder input on the impacts of such a change.

Please thank your team for their work on this audit.

Sincerely,

Umair Shah, MD, MPH
Secretary
Department of Health

David Schumacher
Director
Office of Financial Management

cc: Jamila Thomas, Chief of Staff, Office of the Governor
Kelly Wicker, Deputy Chief of Staff, Office of the Governor
Rob Duff, Executive Director of Policy and Outreach, Office of the Governor
Mandeep Kaundal, Director, Results Washington, Office of the Governor
Tammy Firkins, Performance Audit Liaison, Results Washington, Office of the Governor
Scott Frank, Director of Performance Audit, Office of the Washington State Auditor

OFFICIAL RESPONSE TO THE PERFORMANCE AUDIT ON ASSESSING THE EFFECTIVENESS OF WASHINGTON'S WATER USE EFFICIENCY REGULATIONS

DECEMBER 5, 2023

The Department of Health (DOH) and the Office of Financial Management (OFM) provide this management response to the State Auditor's Office (SAO) performance audit report received on November 2, 2023.

SAO PERFORMANCE AUDIT OBJECTIVES

The SAO's performance audit addressed two questions:

1. To what extent do Washington's municipal water suppliers comply with water use efficiency requirements?
2. What opportunities exist for the Department of Health and municipal water suppliers to help improve water use efficiency in Washington?

Recommendations to DOH in brief:

SAO Recommendation 3: To address issues found in the regulation of municipal water loss:

3. Prepare a strategic workplan, including timelines for completing the recommendations, a description of how the agency will devote resources to accomplish them, and benchmarks for achieving them.

STATE RESPONSE: We concur. DOH will develop a workplan with timelines for completing many of the recommendations in the report.

Action Steps and Time Frame

- Train newly hired staff on water use efficiency's connection to growth management, construction standards, land use regulations, and water system coordination. *By April 30, 2024.*
- Complete a water use efficiency program plan, including a strategic workplan. *By April 30, 2024.*
- Identify the resources necessary to implement the strategic workplan. *By August 31, 2024.*

SAO Recommendations 4-5: To ensure DOH's data sets contain complete and accurate information about municipal water suppliers and water systems:

4. Maintain a complete list of municipal water suppliers with current contact information.
5. Review its reporting form and ensure it collects all information required by its rules.

STATE RESPONSE: We agree that a list of current municipal water suppliers with current contact information should be completed. We have advised our regional offices on how to add new municipal water suppliers into the database. DOH will also update permissions of who has access to update the data. We will start a concerted effort to review non-transient non-community (NTNC) water systems to ensure those that might be municipal water suppliers have been properly identified. DOH will coordinate that effort with the Department of Ecology. By law, Ecology determines which entities are municipal water systems.

We disagree that we are not maintaining current contact information. The report states that the contact information provided was 95% accurate or better. DOH reaches out annually to all public water systems to

obtain current information on both contact and facility information. We contacted the out-of-date utilities identified by the audit team and updated their contact details.

We agree the report form needs to be updated to ensure collection of all required information. We are in the process of updating our core data system from the current state run (SENTRY) database to the national Safe Drinking Water Information System (SDWIS). While this effort currently uses most of our Health Technology System programming resources, it will help provide the backbone of information needed to support and update the interfacing application for water use efficiency reporting. We will review all gathered information and develop plans for updating the system. The actual system updates will take longer until our core data system migration is complete.

Action Steps and Time Frame

- Review currently gathered information versus requirements under the law. *By June 30, 2024.*
- Review and update, in coordination with Ecology, the current list of municipal suppliers and associated additional information within our core data system. *By January 31, 2025.*
- Contingent on funding of the workplan, complete the update of the WUE database. *By December 31, 2027.*

SAO Recommendations 6-9: To ensure the agency can accurately determine water system compliance with its regulations:

6. Identify clustered systems that have unique metering requirements.
7. Develop a method for automatically notifying agency staff of unreliable information reported by suppliers.
8. Ensure the three-year average leakage calculation uses only reliable data, and establish notifications to alert staff when reliable data is not available.
9. Establish automatic notifications in the database to alert the agency of noncompliant systems.

STATE RESPONSE: We appreciate the consideration of identifying clustered systems that have unique monitoring requirements. DOH will work to identify which water systems may be wholly clustered entities. The greater challenge is that all public water systems may serve clustered entities which impact their data on reporting compliance with metering requirements. We are interpreting the SAO's recommendation to specifically identify when systems are wholly clustered entities and can include this data in future database updates.

We agree that our data system should have the ability to automatically flag information that appears unreliable. We have learned through our work with this program that at times the data may be accurate as available from reading meters and still provide negative water loss. This often shows the need to calibrate or replace meters. Sometimes it is caused by entering data incorrectly. Although addressing these data points requires different responses, automatic notifications will help staff and the water system's staff move toward accurate and useful data collection. We also agree that the three-year average leakage calculations should only use reliable data and identifying reliable data up front should address issues identified in the SAO's report.

We support the concept of making it easier for staff to understand water system compliance. While we may not be able to quickly establish automatic notifications in the database for both the accuracy of data and the non-compliance of water systems, we will start processes internally to regularly review the data for accuracy, work with utilities on establishing accurate information, and review the status of water system compliance annually.

Action Steps and Time Frame

- Update data systems to indicate wholly clustered systems. *By December 31, 2027.*
- Develop processes to review data for validity and accuracy until we can update our data system to provide automatic notifications. *By September 30, 2024.*
- Contingent on funding of the workplan, update DOH's data system to ensure the three-year average leakage calculation uses only reliable information. *By December 31, 2027.*
- Contingent on funding of the workplan, establish processes to regularly evaluate water system compliance with WUE requirements. *By September 30, 2025.*

SAO Recommendation 10: To help municipal water suppliers improve water system efficiency and reduce water loss:

10. Pursue the possibility of implementing the 2017-2018 water use efficiency pilot project's four recommendations statewide.

STATE RESPONSE: We adopted the first recommendation of the 2017-2018 water use efficiency pilot's recommendations and approved the use of the American Water Works Association (AWWA) water audit methodology. We have included information on this methodology in our updated water system planning guidebook and will look to update the WUE guidebook accordingly.

We disagree with the report's recommendation for all water systems to use this methodology as it is not cost effective for DOH to provide continual necessary training for small water systems nor small systems to maintain trained staff to conduct the water audits.

Action Steps and Time Frame

- Update Water Use Efficiency Guidebook 331-375. *By December 31, 2024.*
- Contingent on funding of the workplan, create the Water Use Efficiency Guide for Small Water Systems. *By September 30, 2025.*
- Contingent on funding of the workplan, publish guidance on Water Loss Control Action Planning (including best practices). *By June 30, 2026.*

SAO Recommendations 11-13: To provide assistance to help municipal water suppliers minimize system water loss:

11. Fix all nonworking website links to information and assistance currently on its website, and ensure all information is accurate.
12. Develop a process to ensure website links are maintained with current and accurate information.
13. Develop an annual forum for water suppliers to share their knowledge and experiences.

STATE RESPONSE: We thank the auditors for their diligent review and feedback on this information. We have updated the website links to ensure they go to the right place. We recently hired staff who will have portions of their time dedicated to this program and be responsible for updating this information. Existing WUE program plans and supporting data are already proposed for updating (see SAO Recommendation 10).

We also developed a guidance document for staff to annually review all publications to ensure updated information and weblinks are maintained.

We will continue to support water suppliers to share their knowledge and experience through existing, reoccurring meetings and gatherings. Current forums such as the Drinking Water Advisory Group (DWAG) local purveyor groups, Washington Water Utility Council and other meetings are available for this work, and we encourage our staff to participate. The DWAG agenda is drafted with water utilities, and we will gather feedback on this agenda item for future meetings.

Action Steps and Time Frame

- Review and update, if necessary, the WUE webpages annually. *By April 30, 2024.*
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Appendix A: Initiative 900 and Auditing Standards

Initiative 900 requirements

Initiative 900, approved by Washington voters in 2005 and enacted into state law in 2006, authorized the State Auditor’s Office to conduct independent, comprehensive performance audits of state and local governments.

Specifically, the law directs the Auditor’s Office to “review and analyze the economy, efficiency, and effectiveness of the policies, management, fiscal affairs, and operations of state and local governments, agencies, programs, and accounts.” Performance audits are to be conducted according to U.S. Government Accountability Office government auditing standards.

In addition, the law identifies nine elements that are to be considered within the scope of each performance audit. The State Auditor’s Office evaluates the relevance of all nine elements to each audit. The table below indicates which elements are addressed in the audit. Specific issues are discussed in the Results and Recommendations sections of this report.

I-900 element	Addressed in the audit
1. Identify cost savings	No.
2. Identify services that can be reduced or eliminated	Yes. The audit recommended that the Legislature grant the Department of Health (DOH) authority to establish a minimum size requirement for the regulation of water loss, under which small water systems are exempt.
3. Identify programs or services that can be transferred to the private sector	No.
4. Analyze gaps or overlaps in programs or services and provide recommendations to correct them	No.
5. Assess feasibility of pooling information technology systems within the department	No.

I-900 element	Addressed in the audit
6. Analyze departmental roles and functions, and provide recommendations to change or eliminate them	Yes. The audit analyzed the role of DOH in the water use efficiency program and made recommendations to change it.
7. Provide recommendations for statutory or regulatory changes that may be necessary for the department to properly carry out its functions	Yes. The audit recommended the Legislature grant the Department of Ecology oversight of the conservation planning and implementation portion of the Municipal Water Law.
8. Analyze departmental performance data, performance measures and self-assessment systems	Yes. The audit assessed DOH's performance in collecting, analyzing and responding to water loss in the state's municipal water systems, which reflects how well the agency is implementing the law.
9. Identify relevant best practices	Yes. The audit identified relevant best practices for assessing water loss.

Compliance with generally accepted government auditing standards

We conducted this performance audit under the authority of state law (RCW 43.09.470), approved as Initiative 900 by Washington voters in 2005, and in accordance with generally accepted government auditing standards as published in *Government Auditing Standards* (July 2018 revision) issued by the U.S. Government Accountability Office. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The mission of the Office of the Washington State Auditor

To provide citizens with independent and transparent examinations of how state and local governments use public funds, and develop strategies that make government more efficient and effective. The results of our work are widely distributed through a variety of reports, which are available on our website and through our free, electronic [subscription service](#). We take our role as partners in accountability seriously. We provide training and technical assistance to governments and have an extensive quality assurance program. For more information about the State Auditor's Office, visit www.sao.wa.gov.

Appendix B: Objectives, Scope and Methodology

Objectives

The purpose of this performance audit is to assess municipal water system compliance with water use efficiency requirements administered by the Department of Health (DOH) and identify opportunities to improve water use efficiency in the state. The audit addresses the following objectives:

1. To what extent do Washington's municipal water suppliers comply with water use efficiency requirements?
2. What opportunities exist for the Department of Health and municipal water suppliers to help improve water use efficiency in Washington?

For reporting purposes, the audit results have been organized into key findings. The messages relate to the original objectives as follows:

- The Department of Health can help municipal water suppliers minimize water loss by better managing supplier data and using industry leading practices (pages 13-21) – This finding addresses Objectives 1 and 2.
- Water use efficiency rules disproportionately affect small water systems; DOH should address small system challenges and expand assistance (pages 22-29) – This finding addresses Objective 2.
- In response to increasingly limited state water resources, the Legislature could reassign responsibility for water conservation from DOH to the Department of Ecology (pages 30-32) – This finding addresses Objective 2.

Scope

This audit assessed municipal water system compliance with the water use efficiency portion of the Municipal Water Law in RCW 70A.125.170 and the corresponding rules in Chapter 246-290 WAC. We evaluated compliance with requirements applicable to municipal water systems using water use efficiency data provided by DOH for reporting years 2017-2021. We did not assess compliance of non-municipal Group A water systems, Group B water systems or private wells. We also did not examine water quality regulations administered by DOH or compliance with those requirements.

Methodology

We obtained the evidence used to support the findings, conclusions, and recommendations in this audit report during our fieldwork period (April to July 2023), with some additional follow-up work afterward. To address the audit's objectives, we used several methodologies that included interviews, legal reviews, website reviews, a survey we sent to water suppliers and data analysis.

Review of laws and rules

We first sought to understand the program as established by state law and DOH's administrative rules. We read and summarized each. We used both as a starting point to understand the program and, in some instances, used each as criteria for the audit.

Interviews with DOH

To help us understand the program, how it operates in practice and the challenges program staff face in administering it, we interviewed DOH employees. We asked for information to better understand trends in the data, practices in monitoring, actions taken in response to noncompliance, technical assistance, and the history of the program. We used those responses to gain a basic understanding of program operations and challenges, and sought corroborating evidence where appropriate.

Review of other states

We sought to understand water use efficiency programs in other states. We began our review by looking at information compiled by a nonprofit organization that publishes a report on water use efficiency efforts around the country. We focused our examination on 12 states (Oregon, California, Wisconsin, Indiana, Kentucky, West Virginia, Tennessee, Texas, Georgia, New Hampshire, Rhode Island and Colorado) with water use efficiency regulations involving some form of water loss reporting. In addition, we identified additional states with water use efficiency programs not yet codified (Arizona and Hawaii), and searched those programs for unique or relevant practices.

Supplier survey

We emailed municipal water suppliers representing every water system in the state, using DOH's database as our source. There were 2,065 water systems in total. The agency collects basic contact information for each system, including for the person who submits the water use efficiency report. Some systems had no listed email address in the main database. When that happened, we used the email address listed in the most recently submitted water use efficiency report. This gave us one email contact for every municipal water system in the state. Since some of these contacts manage multiple water systems, that totaled 880 addresses.

We emailed the six questions listed in **Figure 1** on the following page to all 880 suppliers. Some suppliers wished to speak to us by telephone rather than respond via email; in those cases, we had a phone conversation to gather the same information.

Figure 1 – Survey questions sent to municipal water suppliers

1. What do you believe are the best opportunities for Washington’s municipal water suppliers to maximize water use efficiency?
2. What do you think are the most important elements of DOH’s Water Use Efficiency (WUE) requirements that will help ensure adequate drinking water for Washington’s residents and businesses into the future?
3. If your water system is not currently fully metered with service meters (if it is required to be), what are the barriers you face in reaching 100 percent metered connections?
4. If your water system’s water loss (leakage) rate is out of compliance with DOH’s allowable level now or was at any time in the past, what are (were) your challenges in reducing leakage to the maximum allowable level?
5. If you have not recently filed your annual WUE report, what are the challenges you face in reporting water use efficiency information to DOH?
6. Do you have any additional thoughts you would like to share about the Water Use Efficiency program?

Of the 880 water systems we emailed, 46 email addresses were invalid, meaning that the email bounced back or was delivered to someone who was no longer the correct contact. We received responses from 13 percent (105 individuals) of the remaining suppliers. We then analyzed the responses to identify themes as well as comments of particular interest.

Analysis of water system data

We obtained data from DOH to analyze several aspects of water systems. We used DOH’s list of Group A and Group B water systems to understand how many water systems there were in the state in each category. This data included information on the number of connections, the number of residential connections, and the number of residents served.

We also obtained DOH’s dataset of municipal water systems, which included the system name, contact information, ownership, number of connections, and number of residents. We compared this to the Group A list to determine if DOH had identified all municipal water suppliers and performed several other comparisons to determine whether the two datasets agreed on core data. While the municipal water system database was incomplete, in that it did not contain every system that should be considered municipal, we determined it was more accurate than the Group A list based on some other cross-referencing. We relied on the municipal water system data to analyze municipal water systems when the needed data was in this dataset.

The final dataset we used was information from the water use efficiency reports that DOH requires suppliers to submit annually. DOH gave us water use efficiency data for reporting years 2017-2021. We used this data to determine compliance with three areas of DOH’s water regulations: annual reporting, metering and leakage. In all three areas, we compared compliance rates between publicly and privately

owned suppliers. We created these categories based on DOH definitions of ownership types. We also compared compliance rates between suppliers grouped by size based on the number of service connections. These groups were:

- Small — Water systems with less than 1,000 connections
- Medium — Water systems with 1,000 to 9,999 connections
- Large — Water systems with 10,000 or more connections

We based these groups on the categories established in the Small Business Economic Impact Statement DOH developed in 2006 to evaluate the proposed water use efficiency rules.

In our analysis of metering compliance for reporting year 2021, we excluded systems that did not report for 2021. We also excluded clustered systems since they have unique metering requirements and DOH instructs them to report water loss through a different method. We attempted to identify clustered systems based on key words in their name such as “mobile,” “apartment” or “RV.” However, because DOH does not identify which systems are clustered, we were not able to verify whether our list correctly identified all clustered systems.

In our analysis of leakage compliance for reporting year 2021, we excluded clustered systems, those that did not report for one or more of the three prior years, those that reported annual data that was likely inaccurate according to data validity guidance on the DOH website, and those that indicated in their annual reporting form that their water production or consumption data was missing or incomplete for one or more of the three previous years.

Website review

To review the DOH website for whether links were functional and information was correct or up-to-date, we visited each of the 13 pages under Water Use Efficiency on the DOH website. We opened every link and noted whether the link worked. In some cases, the link led to an incorrect location or a location that, while correct, would require a user to search for what brought them to that page to begin with. In those cases we called it a link that is “not working.” In other cases, the link worked, but the information was out of date or did not align to what a user would expect from the title of the link. We also observed some instances of incorrect information, such as incorrect definitions of municipal water systems, and identified those during the review as well.

Work on internal controls

Internal controls were significant to our first audit objective, which sought to evaluate municipal water supplier compliance with water use efficiency requirements. We found that DOH has no internal controls to ensure accurate data and that staff do not monitor the collected data. We found that the water use efficiency data DOH maintains is incomplete and often unreliable, and that because the data is unreliable, DOH cannot accurately determine water system compliance with its water use efficiency regulations.

Appendix C: Water Use Efficiency Statute

Law	Title of Law	Description
RCW 90.03.015 (4)	Definitions	A municipal water supplier is an entity that supplies water for: <ul style="list-style-type: none"> - Residential purposes through 15 or more residential service connections, or - Residential purposes to a nonresidential population that is on average at least 25 people for at least 60 days per year, or - Governmental purposes by a city, town, public utility district, county, sewer district, or water district
RCW 70A.125.010 (4)	Definitions	A Group A water system is a public water system that: <ul style="list-style-type: none"> - Serves 15 or more service connections, or - Serves an average of 25 or more people per day for 60 or more days a year, or - Serves one thousand or more people for two or more consecutive days
RCW 70A.125.010 (5)	Definitions	A Group B public water system is public water system that does not meet the definition of a Group A public water system.
RCW 70A.125.010 (12)	Definitions	A public water system is any system (except a system serving one residence or a system with fewer than five connections serving residences on the same farm) providing water for human consumption through pipes or constructed conveyances, including collection, treatment, storage, or distribution facilities under control of the purveyor and used primarily in connection with the system.
RCW 70A.125.040	Additional or alternative penalty— Informal resolution unless a public health emergency	A person who violates a law or rule regulating public water systems administered by DOH is subject to a penalty of up to \$5,000/day for each violation. If DOH determines the violation to be a public health emergency, the penalty can be up to \$10,000/day for each violation. Every violation is considered a separate offense. The amount of fine must reflect the health significance of the violation and prior compliance by the water supplier. In case of continuing violation, every additional day of noncompliance is considered a separate violation. Additionally, anyone who constructs, modifies, or expands a public water system without DOH approval is subject to penalties up to \$5,000 per service connection or \$400/person served if the system serves a transient population. No more than \$500,000 may be imposed as a penalty to anyone that constructs, modifies, or expands a public water system without DOH approval.
RCW 70A.125.170 (4)	Water use efficiency requirements—Rules	Directs DOH to adopt rules for municipal water suppliers around water use efficiency.

Law	Title of Law	Description
RCW 70A.125.170 (4) (a)	Water use efficiency requirements—Rules	Directs DOH to develop conservation planning requirements that ensure municipal water suppliers: 1) implement programs to integrate conservation with water system operation and management; and 2) identify how to appropriately fund and implement conservation activities. Conservation planning requirements shall include a selection of cost-effective measures to achieve a system's conservation objectives, evaluation of the feasibility of adopting rate structures that encourage conservation, evaluation of system leakage, collection and reporting of water consumption and/or water purchase data, and water demand forecasting.
RCW 70A.125.170 (4) (b)	Water use efficiency requirements—Rules	Directs DOH to develop leakage standards. Limits must be based on the percentage of total water produced and/or purchased and shall not be lower than 10%. DOH may consider alternatives to the percentage of total water supplied where they provide a better evaluation of leakage performance.
RCW 70A.125.170 (4) (c)	Water use efficiency requirements—Rules	Directs DOH to establish minimum requirements for water conservation performance reporting. DOH must 1) Require that municipal water suppliers adopt and achieve water conservation goals which must be adopted in an open public forum; 2) Require that municipal water suppliers adopt schedules to implement conservation program elements and achieve conservation goals; 3) Include a reporting system for regular reviews of conservation performance against adopted goals to be available to customers and the public; 4) Require that any system not meeting its water conservation goals develop a plan to achieve them and report performance to DOH; and 5) Require that if a municipal water supplier determines further reductions in consumption are not reasonably achievable, identify how current consumption levels will be maintained.
RCW 70A.125.170 (4) (d)	Water use efficiency requirements—Rules	DOH must adopt rules that utilize existing mechanisms and simplified procedures to minimize cost and complexity of implementation and avoid placing unreasonable financial burden on smaller municipal systems.
RCW 70A.125.170 (5)	Water use efficiency requirements—Rules	DOH must provide technical assistance upon request to municipal water suppliers and local governments regarding water conservation.
RCW 70A.125.170 (6)	Water use efficiency requirements—Rules	DOH must establish a compliance process that incorporates a graduated approach employing the full range of compliance mechanisms available to the department.

Appendix D: Water Use Efficiency Rules

Rule	Title of Rule	Description
WAC 246-290-050	Enforcement	Describes enforcement actions DOH can take when systems are out of compliance with laws or rules such as issuing corrective measures, requiring submission of project reports, or imposing civil penalties.
WAC 246-290-100	Water System Plan	Requires all Group A water systems that meet certain criteria, such as 1,000 or more connections, to develop and submit a water system plan for review and approval by DOH. The purpose of the plan is to demonstrate system capacity, demonstrate how the system will address present and future needs in a manner consistent with other relevant plans and local, state, and federal laws, and establish eligibility for funding from the Drinking Water State Revolving Fund.
WAC 246-290-105	Small Water System Management Program	Requires all Group A water systems not required to develop a water system plan to develop a small water system management program. The purpose of the program is to demonstrate the system's operational, technical, managerial, and financial capability to achieve and maintain compliance with all relevant local, state, and federal plans and regulations, and establish eligibility for funding from the Drinking Water State Revolving Fund.
WAC 246-290-496 (1)	Metering requirements	Requires all Group A water systems to measure the volume of water produced or purchased using a source meter or other meter installed upstream of the distribution system.
WAC 246-290-496 (2)	Metering requirements	Requires municipal water suppliers to install service meters on all service connections. Clustered entities may measure water through a single meter. If a system is not fully metered, it must develop a meter installation schedule, implement activities to ensure leakage is minimized until the system is fully metered, and report the status of meter installation and actions to minimize leakage in annual reports and water use efficiency programs.
WAC 246-290-800	Purpose and applicability	Establishes the purpose of Part 8 of Chapter 246-290 which is to define requirements for water use efficiency programs, establish a water distribution system leakage standard, define process requirements for water use efficiency goal setting, and establish water use efficiency performance reporting requirements. The requirements of Part 8 apply to municipal water suppliers.

Rule	Title of Rule	Description
WAC 246-290-810	Water use efficiency program	Requires suppliers to develop and implement a water use efficiency program which includes sufficient cost-effective water use efficiency measures to meet the goals developed under 246-290-830. Water use efficiency programs must include several components such as: an estimate of the amount of water saved through implementation of the water use efficiency program over the prior 6 or more years (for systems serving 1,000 or more total connections), a description of the water use efficiency goals, an evaluation of water use efficiency measures to determine if they are cost-effective, a description of all water use efficiency measures to be implemented over the next 6 or more years, a description of how consumers will be educated on water use efficiency practices, and an estimate of projected water savings from selected water use efficiency measures.
WAC 246-290-820	Distribution system leakage standard	Requires suppliers to calculate leakage annually using a formula described in the WAC or an alternate methodology approved by DOH. Suppliers are in compliance if leakage is 10% or less for the last 3-year average, or if they have developed and implemented a water loss control action plan that meets certain requirements commensurate with the level of leakage. Systems serving less than 500 connections may submit a request to DOH for approval of an average leakage up to 20% if certain criteria are met such as evidence of a leak detection survey.
WAC 246-290-830	Water use efficiency goal setting	Requires suppliers to develop water use efficiency goals that are designed to enhance the efficient use of water by the system's consumers. Goals must be set in a public forum that provides opportunity for consumers and the public to comment. Goals must include consideration of the system's forecasted supply and demand, measurable outcomes, a schedule for achieving the goals, and an implementation schedule for water use efficiency measures selected under 246-290-810. Goals must be evaluated and updated via the public process every 6 years for systems required to develop a small water system management program, or as part of developing or updating a water system plan.
WAC 246-290-840	Water use efficiency performance reports	Requires municipal water suppliers to develop an annual water use efficiency performance report and send it to DOH and consumers. Report must include total annual production; annual water distribution system leakage totals; a description of the system's water use efficiency goals; a schedule for achieving the goals; a description of progress toward achieving the goals; the status of meter installation; and all actions taken to minimize leakage.



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– Pat McCarthy, State Auditor

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