

# HB 40 Water Loss Accounting Act

## Answering the Recommendations from the Following Reports:

- State of Utah Water Use Data Collection Program Report 2018
- Recommended State Water Strategy 2017
- A Performance Audit of Projections of Utah's Water Needs 2015
- An In-depth Follow-up of Projections of Utah's Water Needs 2017

# **State of Utah Water Use Data Collection Program Report**

January 2018

The report was prepared by Bowen Collins & Associates as well as Hansen Allen & Luce Inc. Engineers

Recommendations:

pg. ES-4 “2. Add consideration of system losses into calculation of water demands.”

“ If water demands used for future planning do not include consideration of system losses, insufficient water will be projected for future needs.”

Pg. ES-6 “5. To best utilize available resources, a separate approach to data collection is recommended for small systems.”

“a. Large Systems. ... Periodic AWWA M36 water audits to assess the magnitude and nature of system losses.”

“b. Small Systems. ... Instead of trying to perfect data entry for all small systems every year, detailed review and verification of data by DWRi and DWRe staff can be limited to a rotating portion of small systems (approximately 20 percent per year) without compromising overall data accuracy.”

Pg. ES-7 “7. Work with the Legislature to Accomplish the Goals Above.”

“... Legislative action will be needed on three specific recommendations:

- Required customer metering for secondary water use
- Required periodic AWWA M36 water audits
- Required reliable supply evaluation to be submitted with conservation plans

It is recommended that DWRe work with the legislature to pursue these recommended changes for systems serving populations greater than 5,000.”

Chapter 1: Purpose, Scope, and Authorization

Pg 1-2 “The audit recommended the following actions to improve the reliability of water use data:

- Give statutory authority to the Division of Water Resources to validate the annual water use reported by public water providers
- Incorporate a routine data check feature in the online data collection form that is used to validate the accuracy of the data submitted by the public water providers
- Validate the accuracy of the water use data by comparing it to other sources with similar information
- Conduct data validity checks, periodic audits, and training for local water systems to verify the accuracy of water supply and data use
- Committing additional staff and resources to improving the State’s water use database

## Chapter 2: Water Use Data Collection Process

“Collect additional information regarding water loss.”

Pg. 2-17 “4. Real losses are the physical losses of water from the distribution system, including leakage and storage overflows. They represent water that is extracted and treated, yet never reaches beneficial use.

“It is recommended that the data collection process be modified to collect data on categories of system loss such as unmetered use, meter error, leaks, backwash, etc. ...Some systems already do measure and categorize losses in their systems, but there are no fields in the state form to report those amounts.”

“As part of the effort to secure information about system loss, the State might consider requiring some systems to complete detailed water audits. A recommended methodology for this type of audit is contained in AWWA Manual M36. This type of audit details the variety of supply, consumption, and loss components that exist in each system. This allows the entity and the State to look at the water balance, which summarizes those components mentioned above and provides accountability for the water that enters the system.”

“There are many benefits to controlling losses. Reducing real losses saves water and operating costs such as power, maintenance, and treatment. By reducing real losses, expansion of water supply infrastructure may be deferred and equipment and facility lifetime increased. Reducing apparent losses increases knowledge of the customer metering and billing systems and recovers lost revenues from customers who have been undercharged or have gained water in an unauthorized manner. Understanding and controlling both types of losses will improve the accuracy and integrity of water system input volumes and customer consumption. Knowing true water consumption patterns promotes better water resources management, confirms water conservation benefits, and aids long-term planning. Because of these benefits, understanding and quantifying losses should be an important goal for water systems and a state with rapid population growth and limited water supplies.”

Pg. 2-18 “6. Focus detailed data evaluation activities on large water suppliers.”

“the theme consistent among all the smallest providers interviewed was simply the lack of resources.”

“Simplifying data entry through the other recommendations identified here will go a long way to lightening the load for small systems.”

Pg. 2-25 “Summary of Remaining Recommended Changes”

“Consideration of overall system losses has been added to the data portal. It is recommended that the State consider also adding additional categories to report information of types of loss, consistent with AWWA M36 water audit results.

## Chapter 3: Evaluation of Water Use and Reliable Supply Data

Pg. 3-13 “Observed or Suspected Sources of Error”

“8. Underrepresentation of Losses – Existing and future water demands appear to be based on reported use numbers. Most entities appear to be reporting this information based on metered sales only. Where this is the case, this neglects losses between production and delivery resulting in total demand on the system being underrepresented.

a. Reporting has been very inconsistent due to lack of clarity on the term “use.” Some entities report metered sales while others report production from an arbitrary point in their system. Thus, losses are not consistently accounted for.

b. Where production and sales are appropriately reported, losses have been as high as 30%. Where entities do not report production and sales, no loss is represented.”

“Water Use and Reliable Supply Data Recommendations”

“1. Consider water loss between production and use. Some water (about 15% average in this analysis) is lost between production and use due to leaks, theft, flushing, firefighting, unmetered uses, and metering errors. This means that more water must be provided than is beneficially consumed. The State’s planning efforts should therefore consider this important difference. The approach is more conservative and assures that the State is planning adequate water resources to meet the demand. Consider AWWA M36, Water Audits and Loss Control Programs, to gather more granular information about water loss from individual water systems and help them mitigate losses. This also has conservation benefits.”

Chapter 5: Conclusions and Recommendations

Pg. 5-4 “Recommendations”

“2. Add consideration of system losses into calculation of water demands. As it currently stands, the definition of water use in the data collection process includes metered sales only. This does not include consideration of system losses such as leakage and unmetered consumption. If water demands used for future planning do not include consideration of system losses, insufficient water will be projected for future needs. Analysis of sample systems in this report results in a recommended planning value for future losses of 15 percent. Components should be added to the data collection process to improve consideration of system losses. This may include requirements for periodic AWWA M36 water audits to assess the magnitude and nature of system losses.”

Pg. 5-5 “5. A. Periodic AWWA M36 water audits to assess the magnitude and nature of system losses.”

Pg. 5-6 “7. Legislative action will be needed on... specific recommendations: ...Required periodic AWWA M36 water audits.”

## **Recommended State Water Strategy**

July 2017

Compiled by the Governor’s Water Strategy Advisory Team

Pg. 19 “1.3. Establish water efficiency standards to benchmark water use and identify conservation potential.”

- i. “Water districts, cities and towns, and other water suppliers should implement measures to reduce water supply system losses and to engage in more effective water demand management.”
- ii. “Within the M&I sector, standards for indoor and outdoor water use efficiencies should be tied to industry and technology standards, such as those developed by the American Water Works Association (AWWA) M36 Audits and Loss Control Program (4th Edition), the Irrigation Association, the US-EPA WaterSense Program, the Alliance for Water Efficiency, and the Water Research Foundation Residential End Uses of Water Study (Version 2).”

Chapter 11: What roles will science, technology, and innovation play in addressing Utah’s future water needs?

Issues

Pg. 101 “11.11. Water distribution system losses.”

“A water loss control program can help any water system with minimizing water losses. Water audits help identify locations and volumes of water losses in public water systems. Water audits often can be the first step in a series of steps for controlling water loss. After identifying locations of losses, the next step involves physical replacement of pipeline segments or lining of pipelines and valves.”

“11.12. Funding for development, implementation, and education in water science.”

“In order to help Utah address the water challenges that lie ahead, funding is needed for development, implementation, and education in interdisciplinary water sciences and engineering. As in the past, people count on discoveries and innovations in science and technology to provide answers and alternatives to address the dilemmas Utah faces, but financial support for these efforts is needed.”

Recommendations

Pg. 106 “11.11. Many physical losses occur because of aging pipe infrastructure that develops leaks. Each water system should develop an asset management plan for dealing with its aging infrastructure. Each system should actively monitor for leaks, perform water audits, conduct leak detection with new technology, and replace or line sections of pipe that are found to be leaking.”

## **A Performance Audit of Projections of Utah’s Water Needs**

2015 May

Office of the LEGISLATIVE AUDITOR GENERAL

“The Division Does Not have Reliable Local Water Use Data”

p.9: “Unfortunately, we found that the data submitted to the Division of Water Rights contains significant inaccuracies. State water agencies as well as local water systems also acknowledge these inaccuracies.”  
P.11 “ Our review of local water use data revealed significant errors.”

p. 16: The division needs to develop additional methods for efficiently verifying water use data.”

“The Division Needs an Improved Process for Ensuring Water Data is Reliable”

p.11: “State Water Agencies Participate in the Annual Water Use Surveys but Do Not Trust the Data.”

p.17 “The division could use local water conferences to provide training to local water systems on how to accurately report water use data...and devote more staff and resources to the state’s water use database.

p.18: “Because gathering accurate water use data is essential for managing and planning purposes, we recommend that

1.the Legislature consider granting the Division of Water Resources statutory authority to validate the data submitted to DWR

2. Requiring local entities to submit accurate data should not be overly burdensome, as they should already be generating this information for thier own purposes.

3. DWR should have a role in improving this important data.

## **An In-depth Follow-up of Projections of Utah’s Water Needs**

2017

Office of the LEGISLATIVE AUDITOR GENERAL

Ch II Water Data Accuracy is Improving

P5 “While progress has been made, additional action is needed to fully implement the recommendations from our May 2015 audit.

Ch II Recommendations 1. We recommend that the Division of Water Resources review water use data annually to perform trend analysis (In Process)

2. We recommend that the Department of Natural Resources work with state water agencies to develop an efficient and effective system of collecting accurate water use data from public water providers. Methods that should be considered include...c. Validating the accuracy of water use data by comparing it to other sources with similar information.

p.6 “While DWRe has made some progress in validating the local data, additional work is still required to fully implement Recommendation 1 and action item ‘c’ of Recommendation 2. One

improvement is DWRe's use of an outside consultant to validate the 2015 data. In the future, however, DWRe and DWRi will need to increase their efforts to identify inaccurate water use data."

"Collaboration has improved..." 2017 p.8

Establishing an Advisory Committee will help...

p.10 "Visits by DWRi Staff Help Educate Local Water Managers and Reinforce the Need for Accurate Reporting"...there are clear benefits to having DWRi staff meet with local water system operators.

p.14-15

"Questionable Trends Raise Concerns about Data Accuracy and Secondary Estimates

"Some Water Systems are Still not Submitting Accurate Water Use Reports"

1. Abnormally large fluctuations in reported water use.
2. 2. Inconsistent Interpretation of Data Requests
3. 3. Use Omitted for certain categories: Some local water systems are reporting no institutional or commercial use of water though local churches, schools, and businesses are connected to the water system.

-these problems are not limited to Utah's smaller water systems...some of Utah's larger communities still appear to have problems with their data. The apparent errors are large enough to affect a region's average water use figures. During future site visits and trainings, DWRi staff should identify these water systems and assist them in providing more accurate data.

p.15 Our validity tests uncovered water systems with unbelievably large reductions in water use...These tests uncovered inconsistencies in the data that led us to question the validity of some water use reports...**WE BELIEVE DWRe CAN DO MORE DATA VALIDATION TO IDENTIFY LOCAL SYSTEMS THAT ARE MOST IN NEED OF THEIR ATTENTION.**

Ch III Legislation Promotes Water Conservation But Additional Agency Work Remains

Recommendations: "for DWR to create conservation goals"

"p.22: "Before developing new conservation goals, DWRe needs to verify a reliable data on which to base its goals. That validation process is still underway.

P22 "In addition, the Legislature should consider during its next interim potential policies mandating or facilitating audits of unaccounted water use. Leaks in a water system are an example of unaccounted use and diminish the efficiency of a water system."

