



Water Efficiency Planning United Water Idaho



Production Sources

Marden Water Treatment Plant

Design: 16 MGD
Average: 9.5 MGD
Peak Day: 19.22 MGD

Columbia Water Treatment Plant

Design: 6.0 MGD
Average: 3.22 MGD
Peak Day: 6.33 MGD

Wells

73 Active
ranging 100'-1000' in
depth

Distribution System

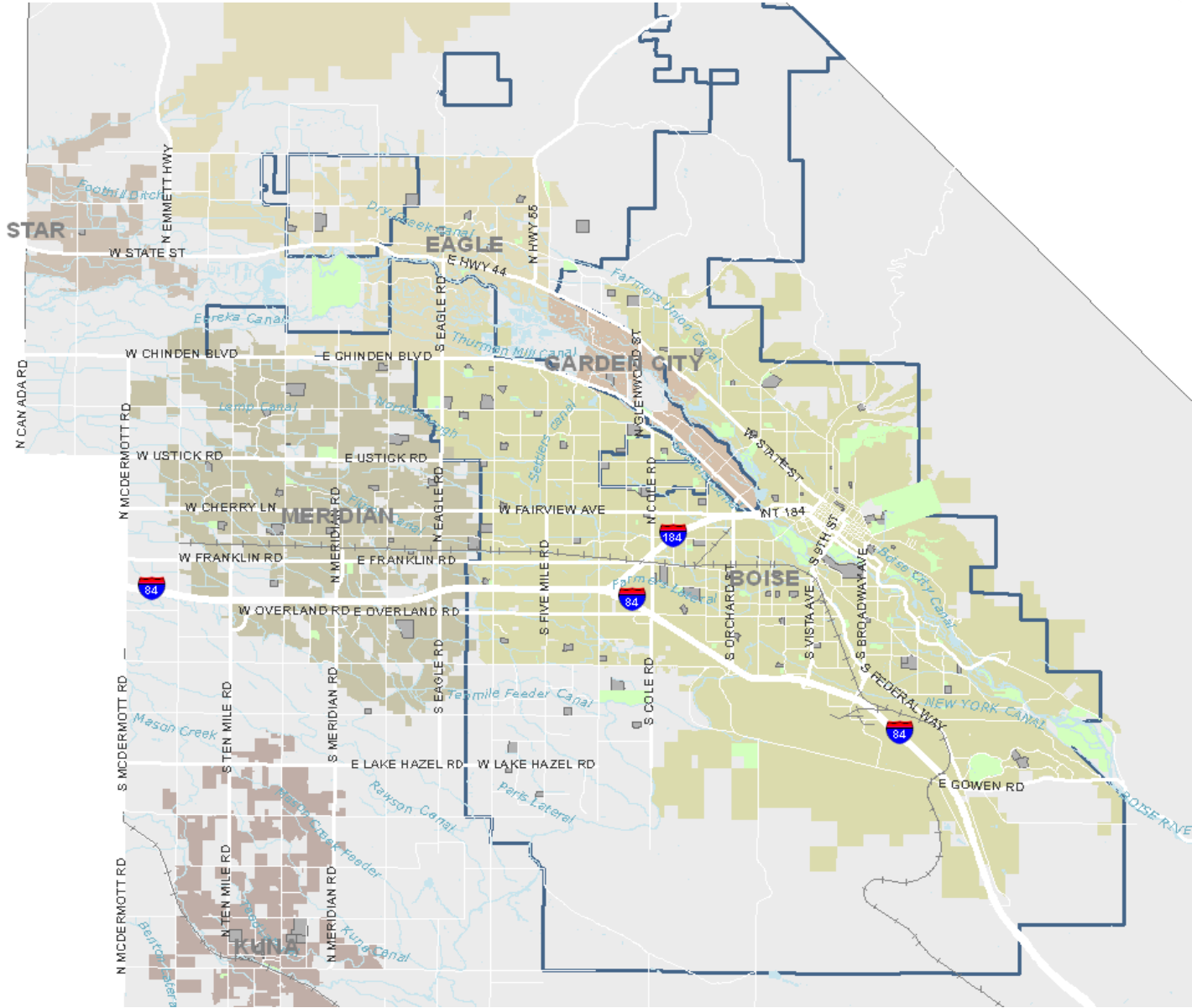
**1,206 miles of transmission and
distribution pipes**

pipe sizes 2" to 24" in diameter

Customer Information

Connections: 84,378

Population: 237,900



Water Efficiency:

Every second, 1.7 million bottles of clean water . . . leak from urban water systems globally. *Alliance for Water Efficiency*



When we think about conserving water:

demand side

supply side

Conserving water on both the utility side and meter side is essential to the water business and the resource.

○ TYPICAL RANGE OF WATER LOSS FOR UTILITIES:

If you are at 10% or lower, you are generally considered relatively healthy.

It is not uncommon for 20%+ losses.

United Water Idaho Numbers: (result of over 20 years of work)

- Non-Revenue Water: 3 %

- Unaccounted for Water: 2.4 %

Non-Revenue and Unaccounted for water numbers are an important business tool for United Water Idaho.

Sources of Unaccounted Water: that occur in distribution system

- **Water quality flushing for customer complaints** – NR / accounted / estimated
- **Fire flow** – NR / accounted / estimated
- **Annual flushing program** – NR / accounted / estimated
- **Small and/or unknown Leaks** – NR / unaccounted
- **Large known leaks** – NR / accounted / estimated
- **Filling new / replace mains**- NR / accounted / estimated /calculated
- **Abandoning mains** – NR / accounted / calculated
- **Hydrant meters** – Revenue / accounted and metered

Our Program Overall:

- Source Water Production Side
- Transmission and Distribution Side
- Recordkeeping Side



Source Water Production Side:

- Every production source is metered.
- All source meters have been changed to mag meters over the last 5 years. Mag meters perform better with the SCADA system, which enhances automated control capabilities. The accuracy rate +/- 3%.
- Source meter calibration - The mag meters chosen can be calibrated. We allocate sufficient time to technicians for this critical task.
- All water tanks are comprehensively inspected every five years to identify and repair leaks, in addition to routine monthly and annual exams.

Source Water Production Side:

- Water tank overflow are minimized through routine calibration of SCADA devices.
- The water pressure is generally maintained between 40 and 90 psi throughout the system. Very few mains have water pressures exceeding 100 psi.



Distribution Side:

- Meter pits at property line - less leakage because we can fix our leaks before the meter.
- Rapid leak response - our T & D Department's goal is to respond within a maximum of two days following discovery.
- Typically service lines are replaced rather than repaired.
- Customer meter change-out and testing - over 99% of the 5/8" to 2" meters do not exceed 20 years in age.

Distribution Side:

Main Replacement Program



- For the past 25 years, United Water Idaho has maintained a main replacement program focusing on the water main materials, sizes and age experiencing the highest leak frequencies.
- Analyses indicate two categories of water main materials present the highest frequencies of leaks: 4-inch and smaller metallic pipe and steel pipe in 6-inch and 8-inch diameters that were installed between 1920s and 1940s. Capital budget focuses on these two groups.
- Continued focus on these mains should contain the bulk of the leakage problem for the near term as the balance of the system is relatively young, with over 80% of the system's total footage installed since 1970.

Recordkeeping Side:

- **Improved policies, procedures and record keeping have been put in place for non-metered water use and for combating water theft such as:**
 - Non-metered water use during system-wide and new main flushing is accounted for.
 - Non-metered water truck usage is prohibited, a water use permit and hydrant meter are required.

- Track data for non-revenue water.

- Over 99% of all meters are read on a regular schedule, estimated readings are the exception rather than the rule.

Recordkeeping Side:

- **We use the AWWA Free Water Audit Software**

- **Which told us in 2011 we had a score of 93 out of 100**

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 93 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Unauthorized consumption

- 2: Systematic data handling errors

- 3: Unbilled unmetered

Goals

- Short Term Goals
- Long Term Goals



Summary Points

- **Accurate source meters to accurate customer meters**
- **Read all meters every billing cycle greater than 99%**
- **Aggressive SCADA device calibration program**
- **An aggressive main replacement program the over the past 25 years focusing on most problematic materials and sizes.**



Thank You

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