



Department of
**Environment &
Conservation**

DRWPP Water Loss Initiative

July 13, 2026

Agenda

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 - What is water loss?
 - Benefits of addressing water loss
 - Best industry practice to address water loss
 - Barriers to water loss control
- DRWPP Water Loss Reduction Initiative
 - Initial Report Recommendations
 - Finalized Water Loss Reduction Initiative

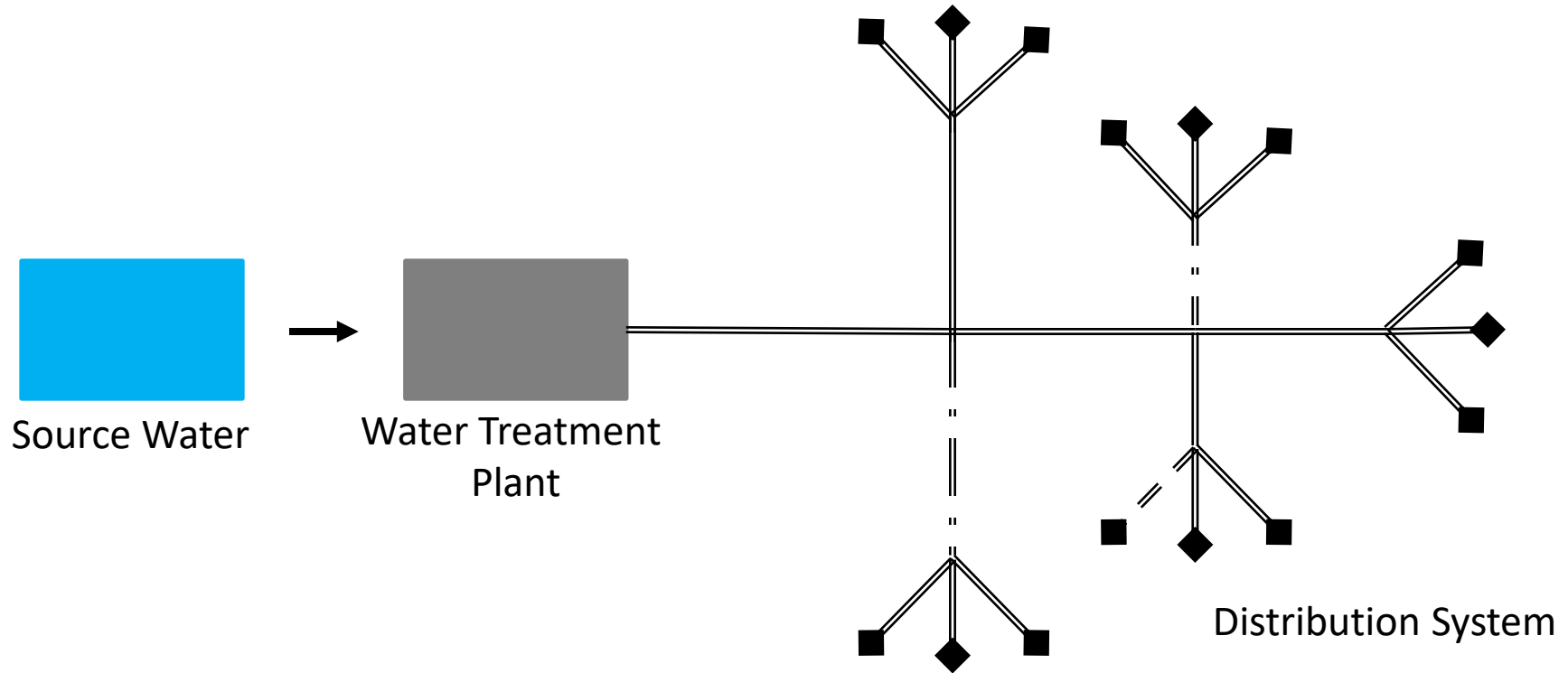
DRWPP Water Loss Working Group

- Began as component of Conservation, Water Loss, Public Education & Community Engagement Working Group.
- Broken into separate working group following Initial Report.
- Members include representatives from Duck River Watershed water utilities, Duck River Development Agency, and Harpeth Conservancy with support from TDEC staff.



Water Loss Background

What is Water Loss?



What is Water Loss?

- **Non-revenue Water** is water that is not billed and no payment is received. It can be either authorized, or result from either apparent or real losses.
 - **Apparent Losses** (commercial losses): occur when water that should be included as revenue generating water appears as a loss due to unauthorized actions or calculation errors.
 - Examples: unauthorized consumption, metering inaccuracies, and data handling errors, non metered water
 - **Real Losses** (physical losses): actual losses of water from the system
 - Example: leakage from mains and overflows from a system's storage tank
- **Real losses represent wasted production and treatment costs and increased operational expenses (pumping, energy use).**

Benefits of Reducing Water Loss

- Often the most economical solution to decreasing demand and extend capacity.
- With an effective water loss program, a utility could see enhanced:
 - Financial performance: lower operating costs and increase revenue
 - Resource and supply resilience: reduces withdrawals from source water and, in some cases, could defer capital expansions
 - Public health assurance: fewer potential pathways for contamination
 - Decreases Environmental impacts
 - Helps stabilize rates for customers

Best Practices for Water Loss Control

- Water Audit
 - Identifies and quantifies the water uses and losses in a system.
 - Verification assures audit produced reliable results.
 - AWWA's Free Water Audit Software is the industry gold-standard.
- Intervention
 - Address the findings of the water audit through the implementation of controls to reduce or eliminate water loss
 - Meter assessment testing
 - Detecting and locating leaks (District Metered Areas, acoustic leak detection, pressure management)
 - Repairing or replacing pipe
- Evaluation
 - Use performance indicators to determine the success of the chosen intervention actions and adjust activities.

Barriers to Water Loss Control

- Rapid growth in region requires utility staff to prioritize new connections over system maintenance.
- Workforce shortages – retirements and growth combined to create nationwide shortage of 125,000 operators that is expected to worsen.
- Insufficient funding and limited rate-setting flexibility constrains utility ability to address water loss or deploy necessary detection tools.
- Lack of TMF Capacity to implement on going programs.



DRWPP Water Loss Reduction Initiative

Initial Report Recommendation

- Short-term recommendation: "Build a Water Loss Reduction Program with Incentivization that Works Directly with Utilities across Tennessee."
- Elements of recommendation included:
 - Conducting water loss audits,
 - Supporting utilities in addressing problems found during audit,
 - Providing necessary resources, and
 - Organization of working group for project.

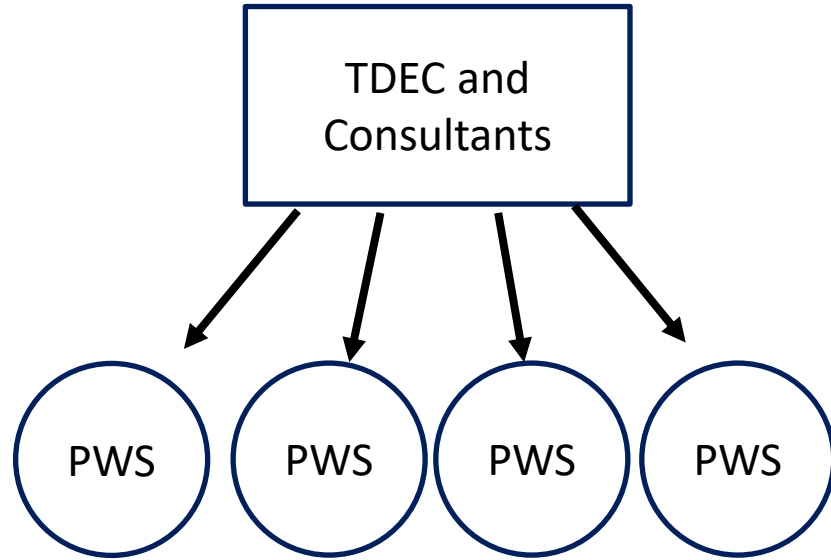
Finalized Proposal

- Multi-year program to assist voluntarily participating utilities in deploying best industry practices to understand and address water loss. Develop ongoing programs, partnerships.
- Three stages for program implementation
 - Stage 1: **TDEC contracts with expert consultants** to conduct verified water loss audits using AWWA 6.0 methodology.
 - Stage 2: Based on results of audit, **consultants will assist utilities** with design of district metered area (DMA) or other water loss control infrastructure where economically sensible.
 - Stage 3: **Utilities take action to mitigate** and plug leaks identified through water loss audit and infrastructure improvements and create regional water loss resource team sharing technical assistance, manpower, and expertise to **build resilient water loss program**.

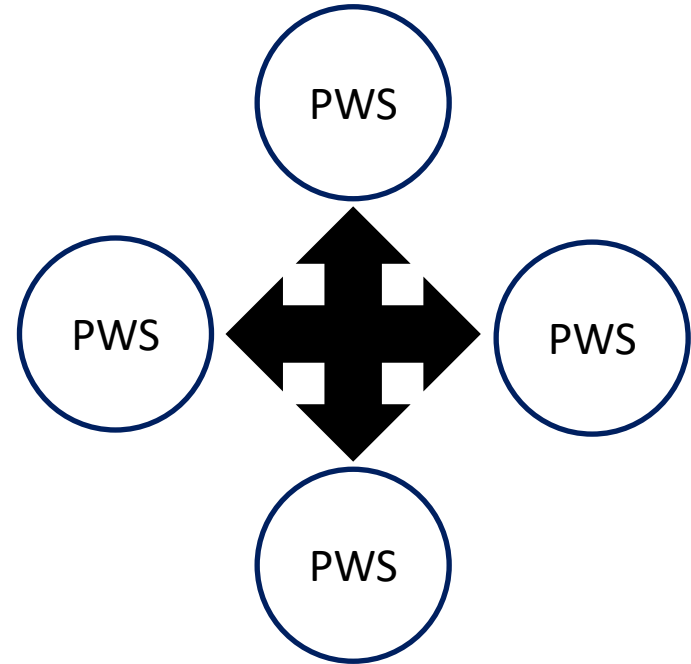
Roles

- **Utilities:** voluntary participation as beneficiaries and/or resources sharing technical assistance, expertise, or data.
- **TDEC:** funding consultants and supporting early stages of initiative.
- **Consultants:** facilitation, water loss auditing and verification, and water loss infrastructure design.

Roles over time



Phase 1



Phase 3

Program Goals

- Reduce Duck River Watershed utilities' water loss rates.
 - Reduce water withdrawals and system expansions by efficiently utilizing existing system capacity.
 - Increase financial performance of utilities.
- Build resilient watershed approach for water loss control.
 - Create network of water loss experts from utilities within the watershed that can assist utilities lacking capacity or expertise.
- Assess potential for statewide application of program to lower water loss rates in other watersheds.

Cost and Status

- Estimated to cost up to \$5 million to implement program within Duck River Watershed utilities.
- Scope of Work completed and approved by working group.
- Duck River Development Agency surveying utility interest in participating.
- Ready to move forward with consultant selection and program implementation.

Questions?

