

Tennessee's water needs run \$15.4 billion deep. Federal dollars cover less than a twentieth.

Memphis draws its drinking water from an aquifer that now has industrial competition, small systems keep breaking in the freeze, and PFAS and lead mandates are stacking onto a backlog that already runs into the billions. For a utility CFO or capital lead, every one of those forces reshuffles the projects on your list. Invizion helps Tennessee utilities re-sequence a capital portfolio in a click — and defend every decision.

\$15.4B¹ Tennessee's 20-year drinking water and wastewater investment needs — \$11.5B water, \$3.9B sewer.	5M gal/day² Projected daily water demand of xAI's Colossus supercomputer built near the Memphis Sand aquifer.	253K³ Water customers MLGW draws from the Memphis Sand aquifer — one of the world's largest artesian well systems.	\$727M¹ Federal water funding to Tennessee since 2022 — just 4.7% of the identified need.
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THE TENNESSEE LANDSCAPE

Four forces are moving your project list at once

None of these is theoretical, and none of them waits for your next budget cycle. Together they mean the capital plan you approved last year may already be the wrong plan.

SUPPLY — THE MEMPHIS SAND AQUIFER

The aquifer that runs Memphis now has industrial competition

Memphis draws its drinking water almost entirely from the Memphis Sand aquifer. MLGW runs one of the world's largest artesian well systems — more than 175 wells across 10 pumping stations serving over 253,000 water customers³

That once-quiet groundwater is now a contested resource. xAI's Colossus supercomputer campus in southwest Memphis is projected to demand more than 5 million gallons of water a day; after scrutiny from local advocates the company committed to an \$80 million greywater recycling plant approved by the Memphis City Council in 2025² Groups such as Protect Our Aquifer continue to press on industrial pumping and contamination risk⁴ Where the next gallon comes from is now a capital question, not just a resource one.

RENEWAL — AGING PIPES & WINTER BREAKS

Freeze-and-break season keeps exposing old iron

Tennessee's drinking water and wastewater systems carry roughly \$15.4 billion in 20-year infrastructure needs — \$11.5 billion water, \$3.9 billion sewer¹ Much of that is aging pipe, and severe winter storms repeatedly turn it into main breaks, pressure loss, and boil-water advisories — TDEC now runs a Public Water System Emergency Dashboard to track outages statewide⁵

The strain falls hardest on small systems with high non-revenue water. The Tennessee Board of Utility Regulation reviews financially and operationally distressed water and wastewater utilities — a signal of how many small Tennessee systems are running thin.⁶

DEMAND — MIDDLE TENNESSEE GROWTH

Growth capital and renewal capital, same wallet

Nashville's Metro Water Services provides water and sewer across all of Davidson County, and the surrounding Middle Tennessee counties are among the fastest-growing in the state.⁷ Every new service connection is a capacity commitment.

Growth-driven capital competes for the same dollars as renewal and compliance, against a \$15.4 billion backlog that isn't going anywhere.¹ The sequencing between them is exactly what boards fight over.

COMPLIANCE — PFAS & LEAD

New federal mandates stack onto the backlog

In April 2024 EPA finalized the first enforceable national drinking-water limits for PFAS, driving new monitoring and treatment capital.⁸ Tennessee's FY2022 Bipartisan Infrastructure Law allotment already earmarked \$49.2 million for lead service line replacement and \$13.1 million for emerging contaminants like PFAS.⁹

Some \$272 million in federal lead-line dollars has flowed to Tennessee since 2022.¹ New obligations don't replace the old backlog — they stack on top of it, and something on the list has to move.

WHO RUNS TENNESSEE'S WATER

Big municipals, one large investor-owned provider, and hundreds of small systems

Tennessee's largest cities run their own water and wastewater utilities; Chattanooga is served by an investor-owned American Water subsidiary; and beneath them sit hundreds of small municipal systems and utility districts. The pressures are shared; the accountability path differs.

Municipal & metro systems

Rates set by city councils and utility-district boards

MLGW (Memphis)	253,000+ water customers · Memphis Sand aquifers
Metro Water Services (Nashville)	Water & sewer across Davidson County
Knoxville Utilities Board (KUB)	Water, wastewater, electric, gas, fiber
Hallsdale-Powell, Cleveland, Murfreesboro & more	Mid-size municipal & district systems
Hundreds of small cities & utility districts	Where funding gaps hit hardest

Investor-owned utilities

Rates regulated by the Tennessee Public Utility Commission

Tennessee American Water	~406,000 people served statewide, incl. Chattanooga
American Water subsidiary	State's dominant private water provider
Small private & district systems	Scattered across rural Tennessee

Every capital dollar has to be defensible

Whether you answer to the Public Utility Commission, a city council, or the Comptroller's utility board, the question is the same: why this project, why now, why at this cost?

Tennessee Public Utility Commission (TPUC) sets rates and capital recovery for investor-owned water and wastewater utilities such as Tennessee American Water.

Tennessee Board of Utility Regulation (TBOUR) under the Comptroller of the Treasury, oversees municipal and utility-district water and wastewater systems — requiring annual financial and water-loss reporting and reviewing distressed systems⁶

TDEC holds Safe Drinking Water Act primacy and administers the State Revolving Fund loan programs, including lead service line and emerging-contaminant funding¹²

EPA PFAS standards (April 2024) set enforceable limits for PFOA, PFOS and other PFAS, driving monitoring and treatment capital⁸

City councils & utility-district boards approve municipal capital plans in public, in front of ratepayers.

The money is moving — can your plan absorb it?

Tennessee utilities have more capital funding available than they've had in a generation. The constraint is no longer only dollars — it's readiness: which projects are shovel-ready, which qualify, and how the timing lines up with everything else on the list.

TDEC State Revolving Fund loans — the Clean Water and Drinking Water SRFs provide low-interest loans to cities, counties, utility districts and authorities, with lead, disaster and emerging-contaminant set-asides¹²

\$93.6M FY2022 BIL Drinking Water SRF allotment for Tennessee — including \$49.2M for lead lines and \$13.1M for emerging contaminants — plus \$27.2M for the Clean Water SRF⁹

\$727M in federal water funding since 2022 (\$518M drinking water, \$209M clean water) — still only 4.7% of Tennessee's \$15.4B need¹

\$11.7B nationally to each SRF under the Bipartisan Infrastructure Law — Tennessee's annual allotments flow from this pool¹³

Recent SRF awards — TDEC announced loans including \$75M to Columbia and \$5M to Pikeville in 2026¹⁴

TENNESSEE WATER, IN BRIEF

Questions Tennessee utility leaders are asking

Short, sourced answers — the same facts we'll dig into on a call, in the context of your system.

Where does Memphis get its drinking water?

Almost entirely from the Memphis Sand aquifer. MLGW operates one of the world's largest artesian well systems — more than 175 wells across 10 pumping stations — delivering water to over 253,000 customers³

Is xAI's data center a threat to the Memphis aquifer?

xAI's Colossus campus in southwest Memphis is projected to demand more than 5 million gallons of water a day. After local scrutiny the company committed to an \$80 million greywater recycling plant, approved by the Memphis City Council in 2025; advocates such as Protect Our Aquifer continue to press on industrial pumping and contamination risk²⁴

How big is Tennessee's water infrastructure funding gap?

Tennessee's identified 20-year need is about \$15.4 billion — \$11.5 billion for drinking water and \$3.9 billion for wastewater. Roughly \$727 million in federal funding has flowed since 2022, covering only about 4.7% of that need¹

Who sets water rates in Tennessee?

The Tennessee Public Utility Commission regulates rates for investor-owned utilities such as Tennessee American Water. Municipal utilities — Memphis, Nashville, Knoxville and others — set rates through their own city councils and boards, with financial oversight from the Tennessee Board of Utility Regulation under the Comptroller.⁶

What new mandates are driving water capital?

EPA's April 2024 PFAS standards and ongoing lead service line replacement are the two big ones. Tennessee's FY2022 Bipartisan Infrastructure Law allotment set aside \$49.2 million for lead lines and \$13.1 million for emerging contaminants like PFAS — funded mandates that stack on top of the renewal backlog⁹

How does Invizion help Tennessee water utilities plan capital?

Invizion is scenario-based capital portfolio optimization for water utilities. It lets you model how a supply pressure on the aquifer, a funding award, a winter-storm failure, or a PFAS deadline reshuffles your whole project list, re-sequence the portfolio automatically, and keep a defensible record of every decision for TPUC, your board, the Comptroller, or ratepayers. The best next step is a short first meeting to look at it against your own program.

REFERENCES

Sources

Every figure in this briefing is tied to a primary or authoritative source.

1. Water Program Portal, "Tennessee's Federal Water Funding" fact sheet, citing EPA DWWSA / CWSN — ~\$15.4B in 20-year needs (\$11.5B drinking water, \$3.9B wastewater); ~\$727M federal funding since 2022 (\$518M DWSRF incl. \$272M for lead lines, \$209M CWSRF), ~4.7% of need, 2026. waterprogramportal.org
2. Wikipedia, "Colossus (supercomputer)" — xAI Memphis facility projected water demand exceeding 5M gallons/day, \$80M greywater recycling plant approved by the Memphis City Council (2025), TVA power approval, 2025. en.wikipedia.org
3. Wikipedia, "Memphis Light, Gas and Water" — more than 253,000 water customers; one of the world's largest artesian well systems (10 pumping stations, 175+ wells) drawing the Memphis aquifer, 2025. en.wikipedia.org
4. Protect Our Aquifer — Memphis-based water advocacy nonprofit raising concerns over industrial and data-center pumping of the Memphis Sand aquifer. protectouraquifer.org
5. Tennessee Department of Environment & Conservation, Division of Water Resources — Water Supply Program and Public Water System Emergency Dashboard (outage / boil-water tracking), 2026. tn.gov
6. Tennessee Comptroller of the Treasury — Tennessee Board of Utility Regulation (TBOUR), oversight of municipal and utility-district water and wastewater systems, 2026. comptroller.tn.gov
7. Metro Government of Nashville & Davidson County — Metro Water Services, water and sewer for Davidson County, 2026. nashville.gov
8. U.S. EPA — PFAS National Primary Drinking Water Regulation, first enforceable national PFAS limits finalized April 2024. epa.gov
9. U.S. EPA — FY2022 Bipartisan Infrastructure Law SRF allotment summary: Tennessee DWSRF \$93.6M (general \$31.3M, lead \$49.2M, emerging contaminants \$13.1M) and CWSRF \$27.2M. epa.gov
10. Knoxville Utilities Board (KUB) — municipal provider of water, wastewater, electric, natural gas, and fiber for the Knoxville area. kub.org
11. American Water, "Tennessee American Water — About Us" — serves about 406,000 people statewide, including the Chattanooga area. amwater.com
12. Tennessee Department of Environment & Conservation — State Revolving Fund Loan Program (Clean Water & Drinking Water SRFs; lead service line, disaster, and emerging-contaminant funding), 2026. tn.gov
13. U.S. EPA — "Water Infrastructure Investments" (Bipartisan Infrastructure Law): \$11.7B each to the Drinking Water and Clean Water State Revolving Funds nationally. epa.gov
14. Tennessee Department of Environment & Conservation — News: SRF water-infrastructure loans announced August 2026 (Columbia \$75M; Pikeville \$5M; Pegram \$2.4M; Maynardville \$143K). tn.gov

ABOUT INVIZION

Capital program optimization for utilities

Invizion is a purpose-built capital lifecycle management platform for water and wastewater utilities. It integrates budgeting, CIP, scenario analysis, and funding-source tracking in one system — so utilities can re-sequence a capital portfolio in a click and demonstrate audit-ready, defensible decisions to regulators, boards, and rating agencies.

See what a defensible Tennessee capital plan looks like — book a 20-minute first meeting.

Book your first meeting →