

West Virginia carries more than \$35 billion in water needs — and a shrinking base to pay for it.

Aging pipe and 50%-plus water loss, the long shadow of the 2014 Elk River spill, PFAS in dozens of systems, and a population that keeps declining while bills climb. For a West Virginia utility CFO or capital lead, every one of those forces reshuffles the projects on your list. Invizion helps West Virginia utilities re-sequence a capital portfolio in a click — and defend every decision.

\$11.6B¹ West Virginia's 20-year drinking-water infrastructure need — against an \$897M funding gap the ASCE says still remains.	550K² People served by West Virginia American Water, the state's single largest utility.	~300K³ People across nine counties left without usable tap water for days after the 2014 Elk River chemical spill.	27 of 37⁴ West Virginia public water systems sampled that showed detectable PFAS — 19 above a proposed EPA limit.
---	---	---	--

THE WEST VIRGINIA 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.

AGING & SMALL SYSTEMS

A generation of pipe, spread across too many small systems

West Virginia's drinking-water systems carry about \$11.6 billion in 20-year needs and earn a D+ on the ASCE's 2025 report card; wastewater earns a D. Some systems lose more than 50% of the water they treat to leaks, and a 2023 viability review rated 14% of systems 'marginal' and 3% 'failing'.¹

The renewal problem is spread thin: the state has more than 2,000 public water systems⁵, most of them small Appalachian systems with few customers to spread a capital dollar across. The ASCE also reports West Virginians face the highest water bills in the country.¹

CONTAMINATION & TRUST

The Elk River legacy — and PFAS on top of it

In January 2014 an MCHM release from Freedom Industries into the Elk River left roughly 300,000 people across nine counties under a do-not-use order for days on West Virginia American Water's Kanawha Valley system.³ A \$151 million class-action settlement with the utility and Eastman Chemical received final approval in 2018.⁶

Contamination is not a hypothetical here. West Virginia is home to the DuPont Washington Works (Parkersburg) PFOA case that produced the C8 health studies of some 69,000 residents⁷, and 2023 testing found one of the country's highest PFAS levels — about 40 ppt — in New Martinsville's waters.⁸ Compliance capital now stacks on top of renewal.

POPULATION & AFFORDABILITY

Fewer ratepayers, higher bills

West Virginia's population was about 1.77 million in 2024, down 1.5% since the 2020 Census and part of a long decline.⁹ Every system still has to recover fixed costs — so a shrinking customer base means the same pipe is paid for by fewer households.

That is how a state can carry both the highest water bills in the country and a nearly \$900 million funding gap at the same time.¹ Affordability is not a soft concern; it is the ceiling on what any rate case can raise.

RATES & CAPITAL CATCH-UP

Running the renewal program in 'triage mode'

When West Virginia American Water sought a more than 22% average increase in 2023 — about \$41 million — it pointed to roughly \$340 million in system needs. It also acknowledged it had replaced only about 3% of its water-main inventory since 2016, operating in what its own engineering director called 'triage mode'.¹⁰

That is the bind in one utility: the backlog grows faster than approved capital can retire it, and every deferral compounds. Deciding what moves — and proving why — is the whole job.

WHO RUNS WEST VIRGINIA'S WATER

One large investor-owned provider — and a long tail of small public systems

West Virginia's single largest utility is investor-owned West Virginia American Water, rate-regulated by the Public Service Commission. Almost everyone else is served by hundreds of municipal systems and public service districts — most of them small, and many losing population and revenue.

Municipal & public systems

Rates set by councils & PSD boards · PSC review on appeal

Public Service Districts (PSDs) Hundreds statewide — the backbone of rural WV water & sewer

Morgantown Utility Board (MUB) Municipal water & wastewater, Monongalia County

Clarksburg Water Board Municipal system, Harrison County

City of Wheeling Northern Panhandle municipal utility

Parkersburg Municipal water & sewer, mid-Ohio Valley

West Virginia has more than 2,000 public water systems⁵ and roughly 336 regulated sewer utilities¹ — most small, and many with shrinking, aging customer bases.

Investor-owned & regulated

Rates & capital recovery regulated by the PSC

West Virginia American Water The state's largest utility · ~550,000 served · PSC-regulated²

Small private & mobile-home-park systems A long tail of tiny, PSC-regulated private systems

Regionalization & acquisitions Larger utilities absorbing failing small systems

West Virginia American Water told regulators it had replaced only about 3% of its water-main inventory since 2016 while running in 'triage mode' — the case for capital that outruns approved rates¹⁰

Every capital dollar has to be defensible

Whether you answer to the Public Service Commission or a PSD board, the question is the same: why this project, why now, why at this cost? West Virginia's oversight bodies are asking it harder than ever.

WV Public Service Commission (PSC) regulates rates and capital recovery for West Virginia American Water and other investor-owned utilities; the 2023–24 WVAW case (a 22%+, ~\$41M request) drew formal opposition from the Consumer Advocate Division¹⁰

WV Bureau for Public Health — Office of Environmental Health

Services holds Safe Drinking Water Act primacy, overseeing 2,000+ public water systems plus lead and PFAS monitorings⁵

PFAS Protection Act (HB 3189, 2023) — after USGS found detectable PFAS in 27 of 37 systems sampled, the law directs WV DEP to identify and address PFAS sources.⁴

WV Department of Environmental Protection administers the Clean Water State Revolving Fund and NPDES permitting behind wastewater and combined-sewer-overflow compliance¹¹

Municipal councils & PSD boards set local water and sewer rates in public, subject to PSC review on appeal.

The money is moving — can your plan absorb it?

West Virginia utilities have more capital funding channels open than in a generation, but the constraint isn't only dollars — it's readiness: which projects are shovel-ready, which qualify, and how the timing lines up with everything else on the list.

WV Water Development Authority administers the Clean Water SRF, the Drinking Water Treatment Revolving Fund, and the WV Infrastructure Fund, and services bonds directed by the Infrastructure & Jobs Development Council¹²

Nearly \$1B in recent federal investment has flowed to West Virginia water — yet the ASCE says an \$897 million drinking-water funding gap still remains.¹

USDA Rural Development Water & Waste Disposal loans and grants: roughly \$10M across Mason County PSD, Adrian PSD, and Tunnelton (2022)¹³, and about \$3.9M of a \$5.8M 2024 round to Triadelphia, Wardensville, Mason County PSD, and Claywood Park PSD¹⁴

Federal SRF capitalization that WV draws on sits within a national 20-year drinking-water need of \$625 billion identified by EPA's 7th Needs Survey.¹⁵

\$23.6B in wastewater needs — including \$1.9B of combined-sewer-overflow correction — is the other half of the capital picture regulators expect a plan for.¹

WEST VIRGINIA WATER, IN BRIEF

Questions West Virginia utility leaders are asking

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

How big was the 2014 Elk River chemical spill?

An MCHM release from Freedom Industries into the Elk River left roughly 300,000 people across nine counties without usable tap water for days, on West Virginia American Water's Kanawha Valley system. A \$151 million class-action settlement with the utility and Eastman Chemical received final court approval in 2018.³⁶

How large is West Virginia's water infrastructure gap?

The ASCE's 2025 report card puts drinking-water needs at \$11.6 billion (grade D+) and wastewater at \$23.6 billion (grade D), with \$1.9 billion of that in combined-sewer-overflow correction. Some systems lose more than 50% of treated water to leaks, and the report says West Virginians face the highest water bills in the country.¹

How widespread is PFAS in West Virginia drinking water?

A 2023 USGS study directed by the state sampled 37 finished-water systems: 27 had detectable PFAS and 19 exceeded at least one proposed EPA limit. New Martinsville registered one of the highest levels in the country (about 40 ppt), and the Parkersburg C8 case is a long-standing PFOA legacy. The PFAS Protection Act (HB 3189) now directs WV DEP to address sources.⁴⁸⁷

Who sets my utility's rates in West Virginia?

The Public Service Commission regulates rates for West Virginia American Water and other investor-owned utilities; municipal systems and public service districts set local rates through their councils and boards, subject to PSC review on appeal. In its 2023 case WVAW sought a 22%+ increase (~\$41 million), which the Consumer Advocate Division opposed.¹⁰

What capital funding is available to West Virginia water utilities?

The WV Water Development Authority administers the Clean Water and Drinking Water revolving funds and the WV Infrastructure Fund; USDA Rural Development funds rural water and sewer directly. Nearly \$1 billion in recent federal money has flowed to the state — but the ASCE says an \$897 million drinking-water gap remains, so readiness and sequencing decide who benefits.¹²¹³¹

How does Invizion help West Virginia water utilities plan capital?

Invizion is scenario-based capital portfolio optimization for water utilities. It lets you model how a PFAS deadline, a funding award, an affordability ceiling, or a deferred main-replacement program reshuffles your whole project list, re-sequence the portfolio automatically, and keep a defensible record of every trade-off for the PSC, your board, 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. American Society of Civil Engineers, "2025 Report Card for West Virginia's Infrastructure" — drinking water D+ (\$11.6B 20-year need, \$897M gap remaining, >50% water loss in some systems, highest water bills in the U.S.); wastewater D (\$23.6B need, \$1.9B CSO correction, ~336 sewer utilities, ~500,000 without public sewer; 2023 viability 83% viable / 14% marginal / 3% failing), 2025. infrastructurereportcard.org
2. West Virginia American Water, "About Us" — serves about 550,000 people in West Virginia, 2025. amwater.com/wwaw
3. Wikipedia, "2014 Elk River chemical spill" — MCHM release by Freedom Industries; roughly 300,000 people across nine counties; multi-day do-not-use order on West Virginia American Water's Kanawha Valley system, 2014. en.wikipedia.org
4. West Virginia Public Broadcasting, "PFAS Chemicals Found In 19 Drinking Water Sources" — USGS study directed by DHHR/DEP: 37 finished-water systems sampled, 27 with detectable PFAS, 19 above a proposed EPA standard; PFAS Protection Act (HB 3189), May 2023. wvpublic.org
5. West Virginia DHHR, Bureau for Public Health — Environmental Engineering Division oversees more than 2,000 public water systems and administers the Drinking Water Treatment Revolving Fund. oehs.wvdhhr.org
6. West Virginia Public Broadcasting, "Judge Approves West Virginia Water Crisis Settlement" — federal court final approval of a \$151 million class-action settlement with West Virginia American Water and Eastman Chemical, June 2018. wvpublic.org
7. Wikipedia, "Per- and polyfluoroalkyl substances" — DuPont Washington Works (Parkersburg, WV) PFOA contamination; C8 Science Panel studied roughly 69,000 residents. en.wikipedia.org
8. West Virginia Public Broadcasting, "New Study Finds High Levels Of 'Forever Chemicals' In New Martinsville Water" — ~40 ppt, reported as among the highest in the country, July 2023. wvpublic.org
9. U.S. Census Bureau, QuickFacts: West Virginia — population 1,766,147 (2024), down 1.5% since the 2020 Census (1,793,716). census.gov
10. West Virginia Public Broadcasting, "West Virginia American Water Defends Request For Another Rate Increase" — 2023 filing: 22%+ average increase / ~\$41M, citing ~\$340M in system needs; 14 rate increases since 2005; ~3% of mains replaced since 2016 ('triage mode'); Consumer Advocate opposition, Dec 2023. wvpublic.org
11. West Virginia Department of Environmental Protection — Clean Water State Revolving Fund: wastewater construction financing and the On-Site Systems loan program. dep.wv.gov
12. West Virginia Water Development Authority — administers the Clean Water SRF, the Drinking Water Treatment Revolving Fund, and the WV Infrastructure Fund; services bonds for the Infrastructure & Jobs Development Council. www.wvda.org
13. West Virginia Public Broadcasting, "Federal Funding Helps Improve Water Quality In Rural Communities" — roughly \$10M in USDA Rural Development Water & Waste Disposal funds (Mason County PSD, Adrian PSD, Tunnelton), Dec 2022. wvpublic.org
14. West Virginia Public Broadcasting, "Rural Infrastructure, Business Projects Receive \$5.8 Million In Federal Funds" — USDA round with ~\$3.9M for water/wastewater (Triadelphia, Wardensville, Mason County PSD, Claywood Park PSD), Feb 2024. wvpublic.org
15. U.S. EPA, 7th Drinking Water Infrastructure Needs Survey and Assessment — \$625 billion national 20-year need, released 2023. epa.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 West Virginia capital plan looks like — book a 20-minute first meeting.

Book your first meeting →