

PFAS, explosive growth, and a \$41B need are landing on your capital plan at once.

GenX on the Cape Fear, some of the fastest population growth in the country, aging systems, and hundreds of small utilities under financial stress. For a North Carolina utility CFO or capital lead, every one of those forces reshuffles the projects on your list. Invizion helps North Carolina utilities re-sequence a capital portfolio in a click — and defend every decision.

\$41B¹ North Carolina's estimated 20-year need — roughly \$20B for drinking water and \$21B for clean water infrastructure.	756K² New residents added statewide between 2020 and 2025 — a 7.2% increase, among the fastest in the nation.	\$5.1B¹ Awarded by the State Water Infrastructure Authority to NC water and wastewater projects since 2014.	4 ppt³ The first enforceable federal drinking-water limit for PFOA and PFOS, finalized in April 2024.
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THE NORTH CAROLINA 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.

CONTAMINATION — PFAS & GENX

The Cape Fear made North Carolina a national PFAS story

GenX — a PFAS compound discharged into the Cape Fear River from the Chemours Fayetteville Works — was identified in 2017, and a 2019 Consent Order required Chemours to cut air emissions at least 99% from 2017 levels and reduce PFAS river loading at least 75%.⁴ A 2020 study still found the highest PFAS concentration in the country in Brunswick County, which draws its drinking water from the lower Cape Fear.⁵

In April 2024 EPA finalized the first federal PFAS drinking-water limits — 4 ppt for PFOA and PFOS and 10 ppt for GenX.³ In 2025 EPA said it will keep the PFOA/PFOS limits but extend compliance to 2031 and reconsider the GenX and other limits — leaving NC utilities planning treatment capital against a target that is still moving.⁷

DEMAND — GROWTH

Among the fastest-growing states in the country

North Carolina added roughly 756,000 residents from 2020 to 2025, a 7.2% increase, reaching about 11.2 million people.² The Charlotte and Raleigh–Durham–Cary regions absorb much of that growth. Charlotte Water alone serves more than 1.2 million people across Mecklenburg County and six surrounding towns.⁸

Every new service connection is a capacity commitment. Growth-driven capital competes for the same dollars as renewal and PFAS compliance — and the sequencing between them is exactly what boards fight over.

RENEWAL — AGING SYSTEMS

A \$41B need on a fixed-rate base

North Carolina's drinking-water and clean-water systems carry an estimated \$41 billion in needs over 20 years — about \$20 billion for drinking water and \$21 billion for wastewater and stormwater.¹

The State Water Infrastructure Authority has awarded about \$5.1 billion since 2014, but that is a fraction of the total need.¹ Renewal, growth, and new mandates don't replace one another — they stack, and something on the list has to move.

DISTRESS — SMALL SYSTEMS

Hundreds of small utilities under financial strain

North Carolina is served by hundreds of separate water and sewer systems. The state assessed 496 local government utility systems for financial and operational distress and created a Viable Utility Reserve to help the most stressed consolidate or rebuild.¹⁰

For a small or mid-size system, a single PFAS mandate or main failure can overwhelm the rate base. That is precisely where a defensible, prioritized capital plan — not a wish list — determines whether you stay viable.

WHO RUNS NORTH CAROLINA'S WATER

Large municipals, two big investor-owned providers, and a long tail of small systems

North Carolina's metros run their own water and wastewater utilities. The dominant private providers, Aqua North Carolina and Carolina Water Service, are rate-regulated by the Utilities Commission. The pressures are shared; the accountability path differs.

Municipal & public authorities

Rates set by city councils and authority boards

Charlotte Water 1.23M served · 333K water connections
· 4,714 mi of mains⁸

Raleigh Water 650,000+ served across 7
municipalities⁹

Cape Fear Public Utility Authority Wilmington & New Hanover County ·
downstream of Chemours on the
Cape Fear⁴

Brunswick County Public Utilities Fast-growing coast · lower Cape Fear
source waters⁶

Greensboro, Durham, Fayetteville PWC, OWASA Large Piedmont & Triangle municipal
systems

Investor-owned utilities

Rates & capital recovery regulated by the NCUC

Aqua North Carolina ~323,000 people · 51 counties¹¹

Carolina Water Service of NC Statewide investor-owned water &
sewer¹²

Numerous small & rural systems Where distress and funding gaps
hit hardest

Both Aqua North Carolina and Carolina Water Service file rate
applications with the North Carolina Utilities Commission¹²

Every capital dollar has to be defensible

Whether you answer to the Utilities Commission or a city council, the question is the same: why this project, why now, why at this cost? North Carolina's oversight bodies are asking it harder than ever.

North Carolina Utilities Commission (NCUC) regulates rates and capital recovery for investor-owned water and sewer utilities, including Aqua North Carolina and Carolina Water Service¹²

NC DEQ Division of Water Infrastructure & the State Water Infrastructure Authority set funding priorities and Intended Use Plans and award SRF and grant dollars statewide¹

NC DEQ — Safe Drinking Water Act primacy drives the compliance capital behind PFAS monitoring and lead service line inventories, now backed by dedicated replacement funding³¹³

The Chemours Consent Order, enforced by DEQ, keeps PFAS reduction and downstream water quality on the regulatory agenda for the entire Cape Fear basin.⁵

City councils & authority boards approve municipal capital plans in public, in front of ratepayers.

The money is moving — can your plan absorb it?

North Carolina 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.

State Water Infrastructure Authority has awarded roughly \$5.1B since 2014 and administers the Drinking Water & Clean Water SRFs, with loans up to \$25M at about half market rates¹¹⁴

Bipartisan Infrastructure Law is channeling more than \$50B nationally through the SRFs — about \$35.7B for drinking water and \$12.7B for clean water — flowing to NC through its SRF allotments¹⁵

Lead service line replacement — NC DEQ awarded \$34.3M in a first round (Sept 2023) and \$13.2M in a second round (Dec 2023) of BIL lead funding.¹³

Viable Utility Reserve — created in 2020 to help distressed small systems study, consolidate, and rebuild; the state assessed 496 local utility systems for distress¹⁰ USDA Rural Development and EPA WIFIA also remain open to eligible NC systems.

NORTH CAROLINA WATER, IN BRIEF

Questions North Carolina utility leaders are asking

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

What is GenX and why is it in North Carolina's drinking water?

GenX is a PFAS compound that Chemours discharged into the Cape Fear River from its Fayetteville Works. It was identified in 2017, and a 2019 Consent Order required Chemours to cut air emissions at least 99% and reduce PFAS river loading at least 75%. Downstream communities on the lower Cape Fear — including Brunswick County, which recorded the highest PFAS concentration in a 2020 national study — have had to invest in advanced treatment⁵⁶

What do the new federal PFAS limits require, and when?

In April 2024 EPA finalized the first enforceable federal PFAS drinking-water limits: 4 ppt for PFOA and PFOS and 10 ppt for GenX. In 2025 EPA said it will keep the PFOA/PFOS limits but extend the compliance deadline to 2031 and reconsider the GenX and other limits. North Carolina utilities are planning treatment capital against a target that is still moving³⁷

Who sets water rates in North Carolina?

The North Carolina Utilities Commission regulates rates for investor-owned water and sewer utilities such as Aqua North Carolina and Carolina Water Service. Municipal utilities — Charlotte Water, Raleigh Water, and others — set rates through their own city councils and authority boards. Either way, capital spending has to be justified to a governing body and, increasingly, to ratepayers¹²

What funding is available for North Carolina water infrastructure?

The State Water Infrastructure Authority has awarded about \$5.1 billion since 2014 and administers the Drinking Water and Clean Water State Revolving Funds, now boosted by the Bipartisan Infrastructure Law (more than \$50 billion nationally). NC DEQ has also awarded dedicated lead service line replacement funding, and USDA Rural Development and EPA WIFIA remain open to eligible systems¹⁵¹³

What is the Viable Utility Reserve?

It is a state program created in 2020 to help North Carolina's most financially and operationally distressed water and sewer systems study their options, consolidate, and rebuild. The state assessed 496 local government utility systems for distress. For small systems, it is often the difference between staying independent and merging into a larger utility¹⁰

How does Invizion help North Carolina 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, or a growth surge reshuffles your whole project list, re-sequence the portfolio automatically, and keep a defensible record of every decision for the NCUC, 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. NC DEQ Division of Water Infrastructure — ~\$5.1B awarded since 2014; ~\$20B drinking-water and ~\$21B clean-water 20-year needs, 2024–2026. deq.nc.gov
2. U.S. Census Bureau, QuickFacts North Carolina — ~11.2M population (July 2025), +7.2% since 2020 (~756,000 residents). census.gov
3. U.S. EPA — PFAS National Primary Drinking Water Regulation, April 2024: 4 ppt PFOA/PFOS, 10 ppt GenX (HFPO-DA), Hazard Index of 1. epa.gov
4. NC DEQ, "GenX Investigation" — GenX discovered in Cape Fear River (2017), source Chemours Fayetteville Works, 2019 Consent Order, affected counties. deq.nc.gov
5. NC DEQ, "Chemours Consent Order" — ≥99% air-emissions reduction from 2017 levels; ≥75% Cape Fear PFAS loading reduction; 2020 Addendum barrier wall targeting ≥99% removal by March 2023. deq.nc.gov
6. Wikipedia, "Cape Fear River" (citing 2020 national study & NC DHHS) — highest U.S. PFAS concentration in Brunswick County; July 2023 fish-consumption advisory for the lower Cape Fear. en.wikipedia.org
7. U.S. EPA newsroom — 2025 decision to keep PFOA/PFOS limits at 4 ppt, extend compliance to 2031, and reconsider the GenX/PFHxS/PFNA limits. epa.gov
8. Charlotte Water, "About Us" — ~1,233,383 served, 333,263 water connections, 4,714 mi water main; FY2026 water capital \$173.1M, wastewater capital \$269.8M. charlottenc.gov
9. City of Raleigh, "Water" — Raleigh Water serves 650,000+ across Raleigh, Garner, Wake Forest, Rolesville, Knightdale, Wendell and Zebulon. raleighnc.gov
10. NC DEQ, "Viable Utilities" — Viable Utility Reserve created via Session Law 2020-79 (2020); 496 local government utility systems assessed for distress. deq.nc.gov
11. Aqua North Carolina (Essential Utilities) — ~323,000 people served across 51 counties. aquawater.com
12. North Carolina Utilities Commission — regulates investor-owned water/sewer rates; Aqua NC and Carolina Water Service file rate applications. ncuc.gov
13. NC DEQ, "Federal Investments in Clean Energy, Climate, and Water Infrastructure" — \$34.3M first-round (Sept 2023) and \$13.2M second-round (Dec 2023) BIL lead service line replacement funding. deq.nc.gov
14. NC DEQ, "Drinking Water State Revolving Fund" — loans up to \$25M at ~half market rate; annual Intended Use Plans (FY2024–FY2026). deq.nc.gov
15. U.S. EPA, "Water Infrastructure Investments" — Bipartisan Infrastructure Law: \$50B+ for water, incl. \$35.7B drinking water and \$12.7B clean water, distributed via state SRFs. 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 North Carolina capital plan looks like — book a 20-minute first meeting.

Book your first meeting →