Charlotte Water 2025 Annual Report
Text-Only Version for Screen Reader

Front Cover

Charlotte Water Logo
2025 Annual Report
Waves of Impact

Table of Contents

The City of Charlotte is committed to making our services and programs accessible to all. Upon request, auxiliary aids, written materials in alternate formats, language access, and other reasonable accommodations or modifications will be provided. To make a request, please email CLTWater Communications at CLTWaterInfo@charlottenc.gov.

This is Charlotte Water's annual report for fiscal year 2025. Language translation is available upon request.
Este es el informe anual de Charlotte Water para el año fiscal 2025. La traducción al español está disponible bajo petición.

Voici le rapport annuel de Charlotte Water pour l’exercice 2025. La traduction française est disponible sur demande.
یہ رپورٹ چارلوٹ واٹر کے مالی سال 2025 کی سالانہ رپورٹ ہے۔ اردو ترجمہ درخواست پر دستیاب ہے۔
Đây là báo cáo thường niên của Charlotte Water cho năm tài chính 2025. Bản dịch tiếng Việt được cung cấp theo yêu cầu.
这是夏洛特水务公司2025财政年度的年度报告. 可根据要求提供中文翻译.

Pages 4-5 – Water is for Everyone

As we look back on another impactful year, we’re proud to share the progress we’ve made and the strides we’ve taken to uphold our commitment to providing safe, reliable water and wastewater services.

This year has been defined not only by major accomplishments but also by forward-thinking initiatives that set the stage for the future of water in our community.

Over the past year, we made meaningful advancements across our entire organization. Most notably, the long-anticipated Stowe Regional Water Resource Recovery Facility continues to progress on schedule. This new facility exemplifies regional collaboration and environmental stewardship, and it will soon serve our growing community for generations to come.

Financially, Charlotte Water remains fiscally responsible and innovative. Our rate structure continues to prioritize affordability while supporting critical infrastructure investments. Our budget ensures that we maintain high service levels, invest in system resilience, and prepare for future needs.

To better serve you, we launched a newly-designed Charlotte Water website. These updates offer improved navigation, account management tools, real-time alerts, and accessible information for customers and developers alike.

Innovation is at the heart of everything we do. We expanded our use of Nuvoda’s Mobile Organic Biofilm™ technology, which enhances biological treatment processes with lower energy usage. At the same time, our ReNew Brew pilot advanced this year in the form of another tasty beer, and Crown Bucha debuted as a crisp, probiotic-rich kombucha. Both showcased how sustainable water reuse can support a circular economy. As part of our commitment to protecting public health, we made critical investments in new lab equipment to improve the detection and analysis of PFAS and other emerging contaminants. These efforts ensure compliance with new regulations, such as the Lead and Copper Rule Revisions (LCRR), and position us to meet future standards with confidence.

This year brought challenges, including severe weather events. Our teams provided hurricane relief support locally and across county lines — a testament to their dedication, expertise, and resilience. We’re also proud of the staff who supported recovery efforts beyond their daily responsibilities. Furthermore, Charlotte Water celebrated Vest’s 100 years in water service, highlighting the incredible legacy of knowledge and service that individuals bring to our utility.

We remained strongly engaged with the community through public outreach events and expanded our Summer Camp program, which educated youth on the science and importance of water.

We're proud of the recognition we received this year, including multiple state and national awards for operational excellence, safety, innovation, and customer service. These accolades reflect the passion and professionalism of every Charlotte Water employee. Our Ripple Effect employee survey helped guide improvements in workplace culture and operations, empowering every team member to help shape our shared future.

As we look ahead, we remain focused on building a smarter, more sustainable utility. From capital project planning to regulatory readiness, community engagement to employee growth — Charlotte Water is prepared to meet tomorrow's challenges today.

Angela Charles, Director

Pages 6-7 – Safeguarding the Wellspring

Engaging The Community In Water Supply Planning

Charlotte Water continued significant progress in 2024–2025 on its proposal to modify the Interbasin Transfer (IBT) certificate, a critical step in planning for the region's long-term water supply.

The proposed modification seeks to ensure that eastern Mecklenburg County and its surrounding communities can access a sustainable drinking water supply as the region experiences continued growth.

Robust Public Engagement Marks Phase One

A major achievement of the past year was the completion of an extensive public comment phase. Charlotte Water held seven public meetings between May and July 2024 across North and South Carolina, in both the source (Catawba) and receiving (Yadkin-Pee Dee) river basins. More than 800 people attended these sessions, which offered residents and stakeholders the opportunity to share concerns, ask questions, and provide input on the proposed changes.

Meeting Highlights Included:
• A highly attended session in Morganton, NC with more than 350 participants.
• Strong local media interest following the Rock Hill, SC meeting.
• Feedback on topics ranging from water quality and drought resilience to wildlife impacts and climate change. Charlotte Water supplemented in-person engagement efforts with a robust digital outreach strategy.
• All meeting recordings, presentations, and public comments were made available through the project website CharlotteWaterIBT.org, underscoring the utility's commitment to transparency.

IBT Certificate = Access to sustainable drinking water as the region continues to grow

From Public Input To Environmental Study

Building on the input received, Charlotte Water initiated the next phase: development of a comprehensive Environmental Impact Statement (EIS). This document will evaluate potential environmental effects of the proposed IBT modification and explore a range of alternatives and mitigation strategies.

A 30-member stakeholder group—geographically diverse and representing both affected basins—was convened in December 2024 to help guide EIS priorities. This stakeholder engagement will continue throughout the 12–18-month EIS phase. Topics under consideration include:

- Future water demand projections
- Conservation strategies
- Downstream water quality
- Reservoir management partnerships
- Climate variability and aquatic ecosystem health

State-Level Developments And Regulatory Context

In June 2025, the North Carolina General Assembly passed House Bill 850, placing a temporary moratorium on IBT approvals exceeding 15 million gallons per day through March 2027. While this halts final approval of Charlotte Water's request, it does not affect ongoing evaluation and preparation. Charlotte Water supports this pause as an opportunity to strengthen the statewide IBT approval process and continue work on technical studies and watershed modeling in collaboration with its regional partners.

Looking Ahead

Charlotte Water's IBT modification process remains a multi-year initiative, with continued opportunities for public engagement and stakeholder input. The project's success is vital not only for meeting future water needs but also for protecting the region's environmental and economic vitality. For more information, ongoing updates, or to provide input, visit charlottewateribt.org.

Pages 8-11 – From Source to Solution

Regional Partnership Embraces Sustainability for All

The Stowe Regional Water Resource Recovery Facility (RWRRF) will use a regional approach to wastewater treatment to serve western Mecklenburg County and eastern Gaston County.

The Stowe Project represents a collaborative effort between Charlotte Water, The City Of Mount Holly, and The City Of Belmont, showcasing the power of regional partnerships.

By pooling our resources and expertise, we can ensure that our communities have the necessary infrastructure and treatment capacity to accommodate future wastewater flow projections.

The Stowe Project will consolidate the two existing municipal water treatment plants in Gaston County into one state-of-the-art facility, reduce the distance wastewater must be pumped for treatment in Mecklenburg County, operate in a more energy-efficient manner, and implement a Community Benefit Project, including walking trails and Environmental Science, Technology, Engineering and Mathematics (ESTEM) partnerships with local schools.

The Stowe service area population is anticipated to grow by 136 percent during the next two decades. The Stowe RWRRF will initially have the capacity to process up to 15 million gallons of wastewater per day. In the future, its second phase will expand the facility's wastewater treatment capacity to be able to process 25 million gallons of wastewater per day.

The Stowe Project involves multiple components that contribute to its overall scope, which goes beyond the new treatment facility's design and construction. Overall, many of the project components are under construction, though a few of them are already complete! There are a couple of components that are still being engineered using a progressive design-build alternative delivery model.

By The Numbers

- 136 percent projected population growth in the Stowe service area over the next 20 years
- 15 million gallons per day – the initial processing capacity of the Stowe RWRRF
- 25 million gallons per day – the future capacity of the Stowe RWRRF after Phase Two

Project Components

Stowe Treatment Facility:
This is the main component of the project, responsible for treating wastewater to meet environmental and regulatory standards before releasing it back into the environment. Its advanced technology will treat water to near drinking quality before it's released into the Catawba River.

Its first phase is scheduled for completion in 2027.

Mount Holly Pump Station:
This pump station will transfer wastewater from the City of Mount Holly through force pressurized pipelines to the Long Creek Pump Station into Charlotte Water's system for treatment.

This portion of the project was completed in fall 2025.

Stowe Headworks and Influent Pump Station, Generator Building, and Flow Equalization Basins:
The headworks and influent pump station will provide preliminary treatment and then transfer wastewater either to flow equalization basins for storage or to the new Stowe Treatment Facility for treatment.

Construction on this portion of the project is underway.

Stowe Entrance Road and Bridge:
A new entrance road and a bridge over Long Creek provide a dedicated access route to and from the Stowe Facility, improving connectivity and supporting construction and operational needs. As part of the project's Community Benefit Project, a multi-use path for bikes and pedestrians was included parallel to the entrance road and in a separated lane on the bridge.

Construction on this portion of the project is complete.

Belmont Pump Station:
This pump station will transfer wastewater from the City of Belmont through pressurized pipes to the treatment facility. It will use Horizontal Directional Drilling (HDD) to install wastewater pipelines under the Catawba River to connect to Charlotte's Water system by directing Belmont's flows to the Paw Creek Pump Station.

This portion of the project is expected to be complete in Fall 2027.

Regional Solids Transfer Project:
This system will handle the transportation of solid waste materials removed during the treatment process to other locations for further processing or disposal. Biosolids from Sugar Creek Wastewater Treatment Plant, Irwin Creek Wastewater Treatment Plant, and Stowe Facility will be transferred to and treated at the McAlpine Creek Wastewater Management Facility.

This portion of the project is anticipated to be complete in 2027.

Construction Highlights

Stowe Facility Progress:
Work on all new buildings is underway, including the primary (1) and final (2) clarifiers, Biological Nutrient Removal (BNR) basins, administration, maintenance, chemical and filter buildings, and headworks, as well as the sludge and returned activated sludge pump stations.

Construction on this part of the project is approximately two-thirds complete.

Concrete Milestone:
Nearly 45,000 cubic yards have been poured — that's 4,500 truckloads.

Mount Holly Pump Station:
This pump station will transfer wastewater from the City of Mount Holly through pressurized pipes under the Catawba River to the Stowe Facility. Testing flow from Mount Holly to the Charlotte Water collection system began in July 2025.

100% complete, with full operations expected in the third quarter of 2025.

Community Connections
In 2025, the Stowe team has been busy engaging with local schools, industry leaders, and attending community events such as:

• Catawba Riverkeeper's Riverfest
• Whitewater Middle School's Career Fair
• The University of North Carolina at Charlotte's Engineering Technology and Construction Management program site tour
• An NC One Water Spring Conference presentation on effective project communication

Lastly, the Stowe project in its entirety was featured in multiple publications.

Looking Ahead (Late 2025–2026)
• Mount Holly Pump Station will begin service in September 2025.
• Belmont Pump Station and Regional Solids Transfer Facility will transfer wastewater from the City of Belmont through pressurized pipes to the treatment facility. Sections of the pressurized pipe in Mecklenburg County have been designed and permitted, with construction anticipated to start in Fall 2025. Charlotte Water and Belmont continue to collaborate on the pump station design. Construction on the pump station and the remainder of the pipeline are anticipated to begin in mid-2026.
• At Stowe RWRRF, construction will continue toward completion with start-up testing and commissioning beginning in mid- to late-2026 on various structures and components. The facility intends to start treating wastewater in 2027.

Pages 12-15 2025 At A Glance: Delivering Reliability, Quality and Care

**All information current as of July 1, 2025 and represents FY25 Totals*

Facts and Figures

9,302 total miles of pipe maintained by Charlotte Water. That's enough pipe to go to Alaska and back!

87.6 MGD average gallons of wastewater treated daily

124.55 MGD average gallons of drinking water pumped daily

4,664 miles of water mains maintained

4,638 miles of wastewater mains maintained

337,614 total water service connections

3.5 million kWh of renewable energy created with CHP (Combined Heat and Power System)

183,000 laboratory analyses performed per year

How much water can you get for $1- 22 gallons (based off of both water and sewer fees using tier one rate)

93,447 valves maintained

0 notice of drinking water quality violations

5,247 food service establishments inspected to protect the system from sanitary sewer overflows

73,000 wet tons of biosolids land applied

363 water quality sampling stations

55 industries regulated to protect against harmful pollutants

119,451 manholes maintained

18,797 hydrants maintained

Maintenance

Water

3.8 miles of water pipes replaced or rehabbed

48.87 miles of new water pipes installed (includes donated)

Wastewater

3.45 miles of wastewater pipes replaced or rehabilitated

39.1 miles of new wastewater pipes installed (includes donated)

4,728 water leaks repaired

757 miles of wastewater pipes cleaned (includes contractors)

1,039 manholes replaced or rehabilitated

History

1899 – The City of Charlotte bought The Charlotte Water Works Company for $226,400. It had 76 hydrants and a pumping capacity of 1 million gallons per day.

1903 – The first wastewater septic treatment plants were built.

1911 – The original Catawba River Pump Station was opened to provide drinking water and fire protection.

1924 –Vest Water Treatment Plant went into operation.

1927 – Charlotte began construction on two new wastewater plants, Sugar Creek and Irwin Creek.

1948 – A new industrial waste ordinance was created in order to keep pollution out of our creeks.

1972 – The consolidation of several regional water and sewer systems formed Charlotte-Mecklenburg Utility Department (CMUD).

1989 – The system reached more than 4,000 miles of water and sewer pipes.

2015 – The name was changed to Charlotte Water.

2025 – Charlotte Water employs a staff of 1,126, serving more than 1 million customers and pumping more than 124 million gallons of water per day.

We Maintain

13 Water Towers
3 Water Treatment Plants
6 Wastewater Treatment Plants
4 Field Operation Centers
17 Treated Water Storage & Booster Pumping Stations
76 Wastewater Lift Stations
2 Water Supply Intakes
16 Total Number of Staffed Facilities
2 Raw Water Reservoirs

Rates and Fees

Availability Fees
Covers the maintenance of infrastructure to provide 24/7 water & sewer service

Water 5/8-inch Connection Size: $1.44/month
Water 1-inch Connection Size: $3.61/month
Sewer 5/8-inch Connection Size: $10.32/month
Sewer 1-inch Connection Size: $25.81/month

Fixed Fees
Covers the cost of servicing customer accounts
Water - $6.62 per month

Sewer - $6.62 per month

Sewer Rates - $6.46 per Ccf of water used

Average Customer Bill*:
$85.82 for a 7Ccf customer per month
**doesn't include storm water fees*

Water Rates

What is a Ccf?
Ccf is an abbreviation that represents 100 cubic feet which equals 748 gallons.

Tier 1: 1-4 Ccf
$1.98 per Ccf

Tier 2: 5-8 Ccf
$2.56 per Ccf

Tier 3: 9-16 Ccf
$5.91 per Ccf

Tier 4: 16+ Ccf
$11.20 per Ccf

Every $1 spent by Charlotte Water equals $15.50 in economic growth for the region.

Page 16 – Beyond the Bill

Understanding the True Cost of Clean Water

As Charlotte continues to grow alongside the surrounding region, so does the need for essential infrastructure to keep pace with an increasing population. Investing in critical water and wastewater systems not only supports that growth but also ensures that all residents have access to clean, safe, and dependable drinking water. Charlotte Water remains committed to delivering these services through ongoing infrastructure upgrades, repairs, and replacements that protect the long-term reliability of its system.

Charlotte Water is one of the few utilities nationwide to hold the highest available Bond ratings — AAA from Moody's and AAA From Standard & Poor's — demonstrating exceptional financial management and long-term stability.

As a public utility, Charlotte Water operates on a "cost-of service" basis, meaning it is funded solely by water and sewer rates, as well as fees paid by customers. It does not collect property taxes or sales tax revenue to support its operations or capital projects. Its rates are carefully designed so that every dollar serves a purpose, whether it's to maintain, operate, or improve the

system. This model allows the organization to meet community needs without generating a profit, while meeting the legal and financial responsibilities of a public utility.

Each year, Charlotte Water reviews system needs, planned capital improvements, and broader economic factors to determine whether a rate adjustment is necessary. The organization presents any recommended changes to City Council, showing exactly how funds will be used to benefit the community. When approved, new rates typically take effect in July at the start of the fiscal year. Rate adjustments are calculated using a nationally recognized rate model that considers regulatory requirements, staffing needs, affordability, and industry trends to create a ten-year projection and ensure transparency.

These rates allow Charlotte Water to:

- Provide clean, safe, and reliable drinking water
- Safely transport & treat wastewater
- Support regional growth
- Maintain more than 9,000 miles of water and wastewater pipes
- Exceed regulatory requirements
- Rehabilitate, replace, and invest in aging infrastructure

Page 17 – A Century of Service

Still Delivering Clean Water After 100 Years
The Vest Water Tower and Vest Water Treatment Plant are visible historic landmarks situated in the historic West End's McCrorey Heights neighborhood.

The Vest Water Tower symbolizes more than 100 years of water, urban, and industrial development history in the Charlotte region.

In the summer of 1911, Charlotte experienced a crippling drought, which caused water to be brought in on tanks via railway from anyone and anywhere that could spare it. The reservoirs were dry, and water sources at the creeks were insufficient. The water famine highlighted the possibility of future water scarcity and the risk of such dire circumstances arising in the future.

Between 1911 and 1918, there was a strong push to build a more reliable and secure water pumping system from the mighty Catawba River, as well as a much larger reservoir at Mountain Island Lake. State-of-the-art pumping systems were put into place, and miles of large pipes were built to deliver water to the filter plant on the outskirts of Uptown Charlotte.

As Charlotte's population continued to grow and water demand increased, improvements and expansions to the water system became a priority. By 1922, plans to move forward with a 10-milliongallon water filter plant, which would effectively double the water treatment capacity for Charlotte, were underway. In a complex, conceivably unfair legal process, city officials acquired the land from Dr. Henry L. McCrorey, President of Biddle University, now Johnson C. Smith University. The land chosen was considered essential, as it had the ideal topographical location to support and supply the Charlotte area with adequate water service.

Throughout the generations, Vest Water Treatment Plant went through a series of upgrades and updates that allowed it to continue to meet the capacity needs of an ever-growing area. Today, it is clear that Charlotte became the city it did due to the foresight, planning, and sacrifices made by our predecessors.

Pages 18-19 Unlocking a New Level of Progress with a Plant

Nuvoda Pilot
Are small plant pieces the key to a new level of greatness in the Queen City's wastewater treatment process? Charlotte Water's Sugar Creek Water Resource Recovery Facility (WRRF) has set out on a 12-month mission to find out.

Nuvoda, a wastewater solutions company in Raleigh, North Carolina, created the Mobile Organic Biofilm (MOB™) process. The star of the show, kenaf, is a fast-growing plant that can eliminate up to 10 tons of carbon dioxide per acre while it grows. That's eight times as much as evergreen trees!

So, How Does It Aid In The Wastewater Treatment Process?
Small pieces of Kenaf are used in all stages of Sugar Creek WRRF's secondary treatment process. The plant's key job is to create space for helpful biofilms to grow.

Biofilms, a slime-like layer found in nature, grow on surfaces to eat the "waste" in wastewater and help solids settle faster. This leads to treated water that can be safely returned to the environment.

The Kenaf material is also reusable! A giant, sieve-like tool separates Kenaf from the water. Screens inside the filter are small enough to catch tiny pieces of the plant and make sure no Kenaf is wasted or appears later in your kitchen sink. Sugar Creek WRRF's maintenance team has even added some helpful filtering features to ensure this process works well, like a ramp for the plant to fall out of the sift into a waiting bin below.

Photo Captions: A Kenaf sample in an Imhoff Cone, the tool used to check how much Kenaf is currently in Sugar Creek WRRF's basins.

Charlotte Water staff adding Kenaf into a manhole just before the aeration treatment phase.

MOB™ And Kenaf Have Other Perks, Too
For instance, chemicals like ammonia have to be controlled carefully while treating wastewater. The microorganisms needed to treat ammonia can be hard to grow in cold temperatures, but biofilms often provide a cozy space for these special helpers to thrive. Kenaf boosts the amount of space for the biofilms to flourish.

Moreover, treatment facilities need to run as smoothly as possible during storms. Improved settling thanks to the Kenaf can help with higher water flows during rainy days. So, as the extra

water comes into the plant from stormy weather, solids settle faster, and there is a lower chance of anything unwanted continuing on to the next treatment stage.

Kenaf is grown in Cameron, North Carolina, and Charlotte Water is working to include fields of it in its biosolids program. Biosolids are a nutrient-rich material made from treated wastewater and are used to foster plant growth and maintain a healthy environment.

The Nuvoda MOB™ pilot is a chance for Charlotte Water to enhance its future practices by lowering costs and preparing for the city to grow. By exploring this new process, Sugar Creek WRRF is gathering useful data to help make decisions for improvements. All thanks to a plant!

Pages 20-21 Charlotte Water Brews History

The Carolinas' First Beer Made from Recycled Water

Charlotte Water recently made waves in both the craft beer world and the world of water innovation with renew brew—the first beer in the Carolinas brewed using high-quality recycled water.

Launched in partnership with Town Brewing, a local brewery, and unveiled at the Queen City Brewer's Festival in February 2024, Renew Brew isn't just a novelty. It is a bold step toward showcasing the future of sustainable water use. In September 2025, Charlotte Water partnered with Lenny Boy Brewing to launch Crown Bucha, extending the QC Water story beyond beer and into kombucha.

Visitors at the festival were curious at first–but one sip quickly turned into rave reviews. In fact, during a blind tasting competition featuring more than 40 local breweries, Renew Brew was crowned Best in Show–a powerful endorsement from seasoned craft beer enthusiasts and casual festival-goers alike.

So, what exactly is recycled water, and why brew beer with it?
Our recycled water, known as QC Water, is treated using cutting-edge technology provided by our partners at Xylem, a global water technology company, to ensure it meets or exceeds the highest safety and quality standards.

With Renew Brew, Charlotte Water aimed to spark conversation about water sustainability and demonstrate the incredible potential of recycled water in a fun and approachable way. The success of the beer–and the overwhelmingly positive public reaction–show that innovation and education can go hand-in-hand.

Initiatives like Renew Brew highlight the importance of exploring new, sustainable solutions for our most precious and vital resource. Charlotte Water remains committed to leading that charge–one pint at a time.

Pages 22-25 Rising to the Call
Charlotte Water Offers Assistance After Hurricane Helene

Historic rainfall and flooding impacts from Hurricane Helene inflicted catastrophic damage across western North Carolina from September 25–26, 2024.

As much as two feet of rain fell within 48 hours in some areas. The resulting floods and landslides devastated properties, roadways, waterways, and all types of utility infrastructure, including drinking water, wastewater and storm water services, energy and communications. Tragically, a total of 106 people died as a result of the storm. Additionally, countless vehicles, private homes, businesses, and institutions were damaged, disabled, or destroyed. North Carolina has never experienced this degree of widespread, sustained destruction and loss from a single disaster.

Mecklenburg County was not spared from the natural disaster and was designated as one of 25 federally declared disaster areas in North Carolina. Yet most local damage was limited to the Catawba River corridor, and Hurricane Helene's local impacts on clean water infrastructure were comparatively light. Once elevated Catawba River water levels crested between September 28–29 and local water and wastewater operations stabilized, Charlotte Water shifted its full focus toward a large and rapidly expanding statewide response, relief, and recovery effort.

Within days, a team of Charlotte Water employees assembled boxes of basic care packages to include in upcoming aid mission deployments. Community disaster relief and assistance resource information was compiled and shared internally and externally among staff and local citizens who were anxious to lend a quick hand to their western neighbors. The Charlotte Water Security and Preparedness Team gathered and internally shared incoming water and wastewater damage assessment reports and processed resource requests from impacted utilities.

Moreover, Charlotte Water is a leadership member with NCWaterWARN, an all-volunteer water and wastewater mutual aid network affiliated with the North Carolina Rural Water Association and its member utilities. NCWaterWARN is also a recognized member of the North Carolina Department of Public Safety's Emergency Management's State Emergency Response Team and holds a seat in the North Carolina Emergency Operations Center whenever an emergency response is activated.

NCWaterWARN volunteers worked tirelessly together with local, state, and federal emergency management staff and other partners who facilitated, coordinated, and delivered response, relief, and recovery throughout Western North Carolina. In time, both material and staff resources from all across the United States arrived to help those affected by Hurricane Helene, too.

Charlotte Water personnel supported 11 missions over a 47-day period from October 2-November 19, 2024 to support the City of Asheville's Water Resources Department (AWRD).

These missions involved material assistance in the form of parts, lab testing kits, and autoflushers, as well as water system assessments, planning support, and construction and repair support.

Dozens of Charlotte Water staff from various departments including the Executive Team, Security and Preparedness, Field Operations, Engineering, Business Office, IT, HR, Workforce Development and Training, and Communications, quietly assisted the deployment teams with leadership, guidance and support to bolster Charlotte Water's relief efforts. The organization acted as one of many NCWaterWARN and emergency management partners who supported City of Asheville's Water Resources Department (AWRD)'s restoration of its community drinking water system.

North Carolina has never experienced this degree of widespread, sustained destruction and loss from a single disaster.

Photo caption: 35 dedicated Charlotte Water employees assisted with the organization's Hurricane Helene relief efforts.

Page 26-27 Charlotte Water Leads the Way

First Online Pipe Materials Inventory Published Under EPA's Lead And Copper Rule Revision

In a landmark achievement for water quality and public transparency, Charlotte Water has published its first-ever online inventory of private water service line materials, marking a major step forward in compliance with the EPA's Lead and Copper Rule Revisions (LCRR).

Launched on October 16, 2024, the searchable inventory—available at charlottewaterlead.org—allows residents to look up their address and view the material type of their private service lines. The good news is that no lead private service lines were found in our community.

Creating this resource was no small task. Charlotte Water combined field data, permit records, and construction histories with predictive modeling to efficiently build the most accurate picture of our service line materials across the county. This modern, data-driven approach helped identify likely material types in areas where records were limited or aging, streamlining the process and ensuring high confidence in the results.

The predictive model considered variables such as the age of the home, construction trends, and regional development patterns. This allowed our team to prioritize field verifications and focus resources where they were most needed, which sped up the timeline for project completion and improved the accuracy of the final inventory.

Charlotte's relatively young infrastructure—much of it built after the 1986 federal ban on lead plumbing—also played a significant role. Because our community experienced most of its growth in the past three decades, our water service lines predominantly use newer, safer materials that do not contribute lead to drinking water.

Charlotte Water has monitored for lead and copper since 1991 and has consistently met or exceeded EPA standards. The new inventory reflects not only our compliance with the revised federal regulations but also our broader commitment to transparency, innovation, and public trust.

By leveraging technology and making this information publicly accessible, Charlotte Water is setting a new standard in the industry by ensuring proactive communication and data-driven decision making go hand-in-hand to protect public health.

To explore the inventory and find out more about your water service line, visit Charlottewaterlead.org.

Better Site, Better Service
Charlotte Water's updated website puts service at your fingertips with streamlined navigation, mobile access, and faster answers.

Find what you need faster, more clearly, and from any device.

Page 28 – Inspiring the Next Generation | Camp C.L.T.W.
This summer, Charlotte Water proudly hosted its second annual Camp C.L.T.W.–a dynamic, four-day experience designed for the children and family members of our employees.

The camp offered a unique opportunity for young minds to dive into the world of Charlotte Water and Storm Water Services through interactive activities, behind-the-scenes tours, and firsthand learning experiences.

Campers explored key facilities across our operations, including the Lakewood Restoration Project, Catawba River Pump Station, Lee S. Dukes Water Treatment Plant, and McDowell Creek Wastewater Treatment Plant. These site visits gave them a deeper understanding of the systems and science that keep our water clean and our community thriving.

The camp's success was made possible thanks to the incredible support of more than 30 staff volunteers from Charlotte Water and Storm Water Services. Their enthusiasm, expertise, and dedication gave campers an unforgettable glimpse into the essential work we do every day. Together, we're not just providing water–we're nurturing future stewards of our community's most vital resource.

Page 29 – Building the Future Workforce

Charlotte Water's Apprenticeship Program

In July 2025, Charlotte Water proudly celebrated the graduation of 23 Utility Technician I apprentices from the January/March 2024 and July 2024 cohorts.

This milestone represents more than individual achievement—it demonstrates our long-standing commitment to developing a strong, skilled workforce equipped to support the essential services on which our community depends.

Charlotte Water launched the City of Charlotte's first water and wastewater industry apprenticeship program in June 2018. Recognizing the need for a sustainable talent pipeline, we

soon expanded with the Pipeline Academy, both of which are now unified under the Career and Training Academy—a name recognized across City departments. These programs were created to develop and support individuals with the skills and abilities necessary to fill entry-level roles in the water and wastewater industry, regardless of prior experience.

Apprentices are hired into the program and commit to one to four years of training, depending on the skill requirements of their position. Individuals who initially have just a high school diploma or its equivalent and no previous direct experience are equipped with the transferable skills to build meaningful careers through the program. Participants receive hands-on field training, safety instruction, and technical education. Each graduate also earns a Commercial Driver's License (CDL) within their first year—an achievement that enhances both their career prospects and our operational capabilities.

Upon successful completion of the program, graduates earn Journeyman status, signifying their readiness to take on full professional responsibilities within Charlotte Water.

Together, we are shaping the future of water—one apprentice at a time.

Page 30-31 – Charlotte Water and Storm Water Leadership Team Flow Chart

- **Chief Executive Officer** Angela Charles – black square
- **Executive Assistant** Renea Benjamin
- **Legal Senior Assistant City Attorney Supervisor** Thomas Powers – light blue square

Storm Water Services (258 Full-Time Employees)

- **Deputy Director** Mike Davis – black square
- **Business Manager** Jaime Thompson
- **Deputy Manager** Kruti Desai
- **Construction & Utilities Division Manager** Logan Oliver
- **Chief Engineer** Kate Labadorf
- **Engineering & Design Division Manager** Matt Gustis
- **Communications Manager** Alyssa Dodd
- **Regulatory Division Manager** Robert Zink
- **Strategic Planning & Operations Division Manager** Bob Jarzemsky

Customer Care and Field Operations (526 Full-Time Employees)

- **Deputy Director** Carl Wilson – black square
- **Customer Service Manager** Robert Taylor
- **Field Operations Chief** Marion Sanders

Diversity, Equity and Inclusion – dark blue square
Meter System Analysis & Upgrade – dark blue square
Sustainability Practices – dark blue square

Business Support Services (147 Full-Time Employees)

- **Deputy Director** Shawn Coffman – black square
- **Security & Emergency Preparedness Manager** Vacant
- **Chief Financial Officer** Melissa Westfall
- **Laboratory Manager** Gina Kimble
- **Chief Information Officer** Doug Groce – light blue square
- **Strategic Planning, Special Project Coordinator** Colin Stifler
- **Safety Manager Interim** Shawn Haraden

Legal & Intergovernmental Affairs – dark blue square
IT Collaboration – dark blue square

Engineering and Planning (156 Full-time Employees)

- **Deputy Director** David Czerr – black square
- **Planning Development** Chief Engineer Keri Cantrell
- **Public Affairs Manager** Jennifer Frost
- **Engineering Chief Engineer Interim** Chuck Bliss

Stormwater Collaboration – dark blue square
Economic Development & Planning Coordination – dark blue square

Plant Operations & Maintenance (274 Full-time Employees)

- **Deputy Director Interim** Joseph Lockler – black square
- **Facilities & Maintenance Chief** Travis Hunnicutt
- **System Protection Manager** Bill Gintert
- **Water Treatment Chief** Micah Burgess
- **Environmental Management Chief Interim** Darrel Dewitt

Regional Initiatives & Agreements – dark blue square

Organizational Talent & Development (16 Full-time Employees)

- **People Strategy Manager** Carolyn Ross – black square
- **Human Resources Manager** Tamara Byers – light blue square

Storm Water Services & Land Development – 258 Full-Time Employees
Charlotte Water – 1,126 Full-Time Employees
Equals
1,384 Total Full-Time Employees
Effective November 2025

Legend
Black square – executive leadership team

Dark blue square – focus areas
Light blue square – reports to City of Charlotte

Page 32-33 – Safer Water, Smarter Science

Charlotte Water Leads PFAS Detection Efforts

At Charlotte Water, protecting the health of our community and environment is a top priority. One of the growing challenges we face is monitoring for per- and polyfluoroalkyl substances (PFAS), also known as "forever chemicals."

These synthetic compounds, used in everything from nonstick cookware to firefighting foam, are known for their persistence in the environment and the human body. They resist breakdown, making them difficult to remove with conventional water treatment methods and a concern for public health.

To meet this challenge head-on, Charlotte Water made a major investment in 2025 by acquiring and installing two state-of-the-art Liquid Chromatography-Mass Spectrometry (LC-MS) instruments at our certified Environmental Services Facility. This advanced technology allows us to detect PFAS compounds with exceptional accuracy, even at extremely low concentrations. The new equipment follows EPA-approved methods and positions Charlotte Water among the nation's leaders in real-time PFAS monitoring.

These LC-MS instruments significantly expand our testing capabilities, enabling us to monitor more than 70 types of PFAS from across our service area. With in-house testing now available, we can process results faster, respond more quickly to emerging concerns, and improve the efficiency and precision of our monitoring program. This investment is a direct response to new federal regulations, including the EPA's Maximum Contaminant Level (MCL) established in April 2024 for six PFAS compounds.

The health risks linked to PFAS exposure—ranging from developmental delays and immune system suppression to liver damage and certain cancers—underscore the importance of early detection and proactive management. Charlotte Water's testing shows that most PFAS levels in our system are undetectable or well below federal thresholds. But we are not waiting for problems to arise—we are acting now to ensure our water remains safe.

This year's equipment upgrade reflects Charlotte Water's commitment to innovation, science-based decision-making, and public transparency.

As research evolves and regulations continue to tighten, we remain steadfast in our mission: to deliver the highest quality water, every day, to every customer.

Learn More
Read about PFAS and our water quality efforts at: CharlotteNC.gov/water/Water-Quality/Unregulated-Contaminants

Page 34 – Rising Above: Sunset Tank Elevates Water Storage Standards

In January 2025, Charlotte Water marked a significant milestone in its infrastructure efforts with the successful "Raising The Bowl" event, lifting the new sunset tank into place.

This 2-million-gallon elevated storage tank is designed to enhance water pressure reliability for homes and businesses in the region, especially during times of high demand and emergency situations.

Construction on the Sunset Tank began in 2024 and is on track for completion by Fall 2025. Once operational, the tank will not only improve day-to-day water pressure but also strengthen the resilience of Charlotte's water system in the face of rapid population growth and changing climate conditions. The Sunset Tank is part of Charlotte Water's broader commitment to modernizing infrastructure and ensuring safe, reliable water service for the community now and into the future.

Page 35 – Accomplishing Two Goals with One Project

Adding Capacity at Rocky River Wastewater Treatment Plant and Moving More Water Back to the Catawba River

Clarke Creek Pump Station and Force Main Project
In 2021, Charlotte Water reached the maximum limit of permitted wastewater flow into the Water and Sewer Authority of Cabarrus County (WSAAC) system. One of the steps to reduce flow was to move more wastewater to McDowell Creek by constructing a pump station in the Clarke Creek basin. The wastewater from these customers would naturally flow downstream to Rocky River, so Charlotte Water built a pump station to push the wastewater across the ridge line, back to the Catawba River. The wastewater will flow along pipes beside McDowell Creek until it reaches the McDowell Creek Wastewater Treatment Plant.

McDowell Creek Wastewater Treatment Plant Improvements
Engineers also needed to ensure the wastewater treatment plant was ready to handle additional flow. To prepare, Charlotte Water invested in several key enhancements to improve operational readiness and replace equipment nearing the end of its useful service life. These upgrades included improvements to the primary clarifier, primary sludge pump station, chemical feed facility, and digester, ensuring the plant could efficiently manage increased capacity while maintaining reliable, high-quality performance.

- 87.6 million gallons of wastewater are treated and discharged each day from Charlotte Water's wastewater treatment plants.
- 4.96 million gallons a day flow from northeastern Mecklenburg County to the Rocky River Regional Plant (owned and operated by the WSACC).

Pages 36-37 Restoring Reclaimed Water: University Area's System Back in Service

In Fall 2024, Charlotte Water officially restored its reclaimed water system in the University area, making reclaimed water available to customers for the first time in a decade.

The system, originally launched in 1997, was shut down in 2014 following an illicit Polychlorinated Biphenyls (PCB) discharge at the Mallard Creek Water Resource Recovery Facility (WRRF). After a thorough decontamination process and major facility upgrades to support regional growth, the system is now back in service.

Efforts to restart the system began in early 2023, led by a cross-departmental team within Charlotte Water.

Major steps included valve testing, pipeline flushing, leak repairs, and water quality sampling to ensure safe delivery. In November 2024, the switch from potable to reclaimed water was successfully completed at the Tradition Golf Course, currently the system's sole user. UNC Charlotte is expected to begin using reclaimed water in 2025, after building a dedicated pipeline on campus in 2022.

Looking ahead, Charlotte Water continues to explore opportunities to expand the reclaimed water system, which offers a sustainable alternative for irrigation and cooling needs while conserving potable water.

Page 38 – Tapping into Fun: Charlotte Water Connects with the Community

Last year, Charlotte Water participated in 38 public events, providing 3,405 gallons of free water to the community. Charlotte Water is proud to have connected with thousands of residents this year as well, through a wide variety of community events and educational programs. From classroom visits that introduced students to the science behind our water systems to parades and festivals, our team worked hard to inspire curiosity and share knowledge about our essential services.

One of the highlights of our outreach was our sponsorship of a Charlotte Knights baseball game, where we had the opportunity to engage with families and fans about the importance of water conservation and leak detection. During this event, Charlotte Water's staff and messaging resonated with more than 8,000 attendees.

Charlotte Water also took part in National Drinking Water Week activities, including a friendly competition that encouraged staff and community members alike to learn more about water conservation and quality.

Our Water Wagon, a 330-gallon mobile water truck, was a frequent sight at public gatherings, delivering fresh tap water and reinforcing our message that Charlotte's drinking water is safe, reliable, and refreshing. The Water Wagon served as a valuable tool for promoting hydration while reducing the environmental impact of single-use plastic bottles.

At every event, we focused on educating the community about key topics central to our mission. Our staff shared information about water quality testing, engineering innovations, and our award-

winning biosolids program. We highlighted conservation tips to help customers use water wisely and promoted our Flow Free initiative, which teaches residents what should and shouldn't go down the drain to protect our sewer system.

These outreach efforts help build a stronger, better informed community and support the long term sustainability of our water resources**.**

Page 39 – Ripples of Change
Testing the Waters: Measuring Employee Satisfaction with Survey

In July 2025, Charlotte Water launched the third annual Ripple Effect Survey, an employee engagement survey open to all employees across both Charlotte Water and Storm Water Services. This initiative is a vital part of our commitment to fostering a culture of collaboration, inclusion, and continuous improvement. Each year, more employees have voluntarily taken the survey, providing an increasingly accurate account of workplace climate and culture. This year, more than 77 percent of our workplace took the survey and made their voices heard, far surpassing industry standards and demonstrating strong employee engagement across the organization.

The survey invites staff to share candid feedback on what's working well, where we can grow, and how we can enhance the employee experience. Participation is completely confidential, and the insights gathered are used exclusively to inform internal efforts to strengthen communication, workplace culture, and team engagement.

The Ripple Effect Survey measures workplace climate and culture through five key performance indicators. Departmentwide results across all five areas were rated as favorable or very favorable, with the strongest scores reported in Experience vs. Expectations, Intent to Stay, and Engagement. To further support meaningful action, all supervisors received additional training on best practices for using the survey data through action planning. This training emphasizes how survey results influence positive change and help translate employee feedback into real improvements.

By actively listening to our employees, the Ripple Effect Survey helps ensure that our organization continues to be not only an effective utility service provider but also a supportive and inspiring place to work. This ongoing feedback empowers employees to shape the future of our organization from within–because when our team thrives, so does our impact on the community we serve.

Page 40 – Raise a Glass to Award-Winning Water
Celebrating the People and Performance Powering Charlotte Water's Success

- Utility Of The Future Today: Charlotte Water
- AWWA ACE25 Partnership Program Awards:
  Charlotte Water–Distribution System: 20-Year Directors Award
- NACWA Platinum Peak Performance Awards:
  Mallard Creek, McDowell Creek, McAlpine Creek, Ashe Plantation, Irwin Creek

- NACWA Gold Peak Performance Award: Sugar Creek
- Communicator Award of Excellence: Renew Brew
- Design-Build Institute of America (DBIA) Southeast Awards – Design Build Awards – 2nd Place: McAlpine Creek Project
- 5S – Select Society of Sanitary Sludge Shovelers: Carl Wilson
- Kasey Monroe Outstanding Service: James Williams
- Raymond E. "Red" Ebert Award: Don Rivers

Page 41 – Investing in Water

Tackling Our To-Do List
Charlotte Water oversees hundreds of–and more than $400 million worth of–water and sewer improvement projects each year. The five-year Capital Investment Plan is the process through which Charlotte Water is able to identify and prioritize the many projects that need to be completed.

Charlotte Water's Capital Investment Plan is updated annually to:
• Keep rates affordable
• Meet and exceed regulatory requirements
• Provide capacity for economic development
• Satisfy customer expectations
• Maintain existing infrastructure

Every other year, a 10-year needs plan is also completed.

Project Highlights
- 16 million MGD completion of The Mallard Creek Water Resource Recovery Facility Capacity Improvement Project. This project will increase the plant's capacity from 13.1 Million Gallons a Day (MGD) to 16 MGD.
- Fall 2025 The Mallard Creek Interceptor Improvement Project has completed its design and construction phases. Tunneling is scheduled to begin in the Fall of 2025.
- $16+ million to enhance service to the Hidden Valley Neighborhood.
- $50 million Little Hope Creek Wastewater Project Phase 3A.1 was completed, with a total investment of approximately $50 million across three phases.
- $25+ million to repair and replace transmission pipes to reduce the chance of water main breaks.
- $65+ million to enhance the Franklin Water Treatment Plant to improve process, pumps, and tanks.

Pages 42 Looking Ahead

Shaping the Future of Water

With Charlotte's continued growth and transformation, our utility must evolve to meet new demands. At Charlotte Water, we're not just preparing for tomorrow —we're shaping it.

Our future is grounded in innovation, resilience, and a renewed focus on the people and communities we serve. Looking ahead, Charlotte Water is focused on building a more resilient, efficient, and sustainable utility. Our priorities include strengthening infrastructure, expanding digital services, and enhancing water quality monitoring to meet the evolving needs of our growing community.

We're also advancing the way we engage with our customers and empower our workforce. Improved digital platforms will offer more transparency and convenience, while internal initiatives will ensure our organization is structured for growth, modernization, and exceptional service. Guided by employee feedback, we are cultivating a culture that supports both operational success and individual development.

Our presence in the community remains essential. Through education, outreach, and active participation in local events, we aim to remain a trusted and visible partner to the public. As we plan for 2026 and beyond, Charlotte Water is charting a clear path forward—one that balances advanced technology with reliability, and long-term vision with day-to-day excellence.

We're proud of where we've been and even more excited about where we're going.

Operated by the City of Charlotte
Website –charlottewater.org
WordPress –cltwaterblog.org
Facebook –charlottewater
Instagram –cltwater
X –cltwater
LinkedIn –Charlotte Water
YouTube –Charlotte Water