

# **Charlotte Water 2023 Annual Report Text-Only Version for Screen Reader**

## **Front Cover**

Charlotte Water Logo  
2023 Annual Report  
A Year of Flowing Progress

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## **Page 4 – Water is for Everyone**

Water connects us all – it is a critical service we provide that touches every person in our region.

As we take a moment to reflect on the past year and all that we have accomplished, I am proud to say that Charlotte Water continues to advance our mission of providing access to safe, reliable, and affordable water services to our community.

Over the past year, we have significantly improved our infrastructure and enhanced our services by investing in new technologies and equipment to maintain exceptional service for our customers. We made significant strides toward meeting the communication needs of our customers by introducing our new emergency alert system to share information about water outages and important alerts within our service area. We also made improvements to our website and blog to keep our customers up to date about all things Charlotte Water.

Our community outreach events were back in full swing this year and were hugely successful. These events allowed our staff members to engage with our community members, allowing them the opportunity to share more with the community we serve about our services and initiatives. We also unveiled our new and improved Water Wagon at our Water Week celebration in May 2023.

Throughout the year, we completed numerous projects to improve our infrastructure, enhance our water supply's reliability and ensure that water is accessible for everyone in our community. We expanded our Charlotte Water Cares program and added a City and County representative to help residents connect to financial aid assistance and resources. We also expanded our reach to Davidson Pointe and are proud to serve this growing region with the same level of dedication and care that we demonstrate to all of our customers. At the same time, we also made significant investments in the future of our organization. The Vest Water Tower lighting project was completed, adding a beautiful new feature to our skyline. We also completed construction on our new cutting-edge One Water Facility and began construction on the Stowe Regional Water Resource Recovery Facility, showcasing our commitment to meet the needs of our fast-expanding region. These new facilities will permit us to better manage our resources and promote sustainability and accessibility in all aspects of our operations. Charlotte Water remains dedicated to ensuring water accessibility for all members of our community, as this is a key strategic measure outlined in our strategic plan.

Finally, we launched the Lead Free CLT program, a comprehensive initiative aimed at addressing lead and copper contamination in accordance with EPA guidelines. This program is just one example of our ongoing commitment to supply safe and reliable water services to our community.

As the Charlotte Water Director, I am pleased to present the 2023 Annual Report for Charlotte Water. I am honored to lead a team of dedicated professionals who work tirelessly to ensure that our customers have access to clean and safe drinking water every day.

Angela Charles, Director

Charlotte may not be known for its historic buildings. In fact, it's been said by many that Charlotte bulldozes its history. But that is not always the case. One of Charlotte Water's very own buildings, the Vest Water Treatment Plant (Vest) is designated as a historic landmark by the Charlotte-Mecklenburg Historic Landmarks Commission. Located in the Historic West End's McCrorey Heights neighborhood, its 1920s architectural style has been a beacon of history along Beatties Ford Road for almost a century. Both the treatment plant and its water tower also symbolize more than 100 years of urban and industrial development history in the Charlotte region.

In the summer of 1911, Charlotte experienced a crippling drought that required water to be brought into the city via railway and tanks. Although the water famine was short-lived, it highlighted the possibility of future water scarcity. There was a strong push to build a more reliable and secure water pumping system from the mighty Catawba River and create a much larger reservoir at Mountain Island Lake. Later, as the area continued to grow and the water system needed expansions and improvements, the City moved forward with plans to effectively double the water treatment capacity. An ideal topographical location off of Beatties Ford Road was selected. Throughout the years, Vest went through a series of upgrades and updates that allowed it to continue to meet the capacity needs of an ever-growing area. Because of Charlotte's ability to access water from the Catawba River and treat water at a higher capacity than ever before, the region became ripe for growth and development, eventually creating the bustling city we know today.

Without the forethought and innovative thinking demonstrated decades ago, Charlotte likely would not have become the city it is today. One hundred years later, Charlotte Water continues to fulfill the same commitment it did in the past: to provide safe, reliable, clean drinking water to the City of Charlotte.

In October 2022, Charlotte Water held a community event to highlight its history and showcase the new lighting improvements made to Vest's water tower. The ceremony included remarks from elected officials, community leaders and neighborhood advocates, emphasizing the influence of water investment on the growth of Charlotte.

Vest's water tower, originally erected in 1937, has a tank capacity of 1.2 million gallons. For its lighting improvements, more than 70 LED lights were strategically installed and positioned across the tank walls and underbody to illuminate the tower for decades to come.

## **Page 6 – Involved in Community Life**

Last year, Charlotte Water participated in 47 public events, directly engaging at least 6,000 members of our community. During the Water Week celebration, more than 60 Charlotte Water staff members connected with more than 400 members of the public.

These events ranged from classroom drop-ins to celebrating Earth Day in the Queen City to a series of fun activities to commemorate Water Week. During the Water Week Celebration, more than 60 Charlotte Water staff from across the organization participated and connected with the community. Likewise, more than 400 members of the public attended the event, learning

about water quality, engineering, biosolids and Flow Free, a program that teaches which items should not be flushed down the toilet because they clog sewer lines.

Additionally, in May 2023, Charlotte Water re-launched its Water Wagon program, bringing a 330-gallon mobile water truck to serve fresh tap water to the public at requested events. Charlotte Water is on the move and excited to serve the public in meaningful ways.

### **Page 7 – One Water Building to Become New Staff Gathering Place**

Charlotte Water provides service to customers across Mecklenburg County in four strategic zones. Each of these zones has administration buildings where Charlotte Water Field Operations crews operate, using the space to rest, refresh, grab equipment, eat meals, drop off vehicles, provide training and more.

One of the oldest of these buildings was the Zone 4 Administration Building (Zone 4), located off West Tyvola Road. Installed in 1972, Zone 4 was one of the last, historical Charlotte-Mecklenburg Utility Department (CMUD) buildings from a time when Charlotte Water was known as CMUD and the City and Mecklenburg County water service utilities were combined. The original building was meant to be a temporary space for the Wastewater Collections Division; however, as the decades passed, it became a stomping ground for lift station groups and both water and wastewater field operations staff.

In February 2022, construction crews began demolition of Zone 4 to prepare for the site of a new One Water Administration Building. Plans for the new facility include making it LEED-certified and including a new maintenance shop, designated space for community use, a public art structure and enough room to house the water and stormwater department staff together.

This project highlights the City and Charlotte Water's commitment to investing in communities in West Charlotte. The new facility includes a state-of-the-art maintenance shop to help employees better serve customers in one of the fastest growing areas of Charlotte. As part of Charlotte Water's Community Investment Program, local residents will be able to use the community space inside the new facility.

In March 2022, Charlotte Water leadership, elected officials and community members participated in a groundbreaking ceremony to celebrate the start of construction activities for the future facility. The event theme, "One Water Strong," emphasized the important partnership between the essential water, wastewater and stormwater systems that serve the Charlotte region.

Construction continued, and a year and a half later, the facility was complete at last. A ribbon cutting ceremony for the new One Water Administration Building is scheduled for September 2023.

### **Pages 8-9 – Breaking Ground on the Stowe Facility**

**Photo Caption** - From left to right: Laura Meier, Elaine Powell, Braxton Winston, Mayor Vi Lyles, Angela Charles, Susan Rodriguez-McDowell, Barbara Bleiweis, Phyllis Harris, John Nicholson, Shadi Eskaf

The Stowe Regional Water Resource Recovery Facility is just one example of Charlotte Water’s commitment to meet the growing wastewater needs of a fast-expanding region. The Stowe service area population is anticipated to grow by 136 percent during the next two decades. In partnership with the Cities of Belmont and Mount Holly, this project will utilize a regional approach to wastewater treatment to serve communities in northwestern Mecklenburg County and eastern Gaston County. It will increase capacity to support future growth by processing more than 15 million gallons of wastewater per day, updating aging infrastructure, consolidating two plants into one state-of-the-art facility, reducing the distance wastewater must be pumped for treatment, operating more energy efficiently, and implementing a community benefit project, including walking trails and STEAM partnerships with local schools.

Equally as important as providing this crucial infrastructure improvement is preserving the natural recreational character of the surrounding area and engaging with the community that will benefit from this project. Charlotte Water values the long-lasting partnership created between Mecklenburg and Gaston counties as this project strengthens the foundation of a vibrant and thriving Charlotte region.

Several important aspects of the project have already been completed. Before construction, Charlotte Water held a tour for stakeholders and community leaders to explore the project site. An online workshop and public meeting forum also went live in Spring 2022 to educate the public about the Stowe Facility.

In April 2022, Charlotte Water and the City of Mount Holly celebrated the start of construction on the Mount Holly Pump Station. This pump station is an essential component of the overall Stowe Facility project, which includes connecting Mount Holly to the Charlotte Water system.

In June 2023, Charlotte Water held a groundbreaking ceremony to commemorate the start of construction activities for the Stowe Regional Water Resource Recovery Facility. The event featured remarks from Charlotte Mayor Vi Lyles, Executive Director of the Catawba Cultural Preservation Project Dr. Wenonah Haire, Chief of Staff of the U.S. Environmental Protection Agency’s Southeast Region John Nicholson, Director of Water Infrastructure at the N.C. Department of Environmental Quality Shadi Eskaf and Charlotte Water Director Angela Charles. “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,” Charles said.

“By working together, we not only provide more cost-effective and environmentally conscious wastewater management services, but we also foster a more resilient and sustainable region while protecting the pristine Catawba River that borders our communities.”- Angela Charles

The project includes building two pumping stations at the Belmont and Mount Holly sites and connecting the two systems by boring and installing pipes under the Catawba River. The Stowe Facility is expected to be completed by 2027.

The Stowe Facility will revolutionize wastewater treatment and meet the growing demands of the Charlotte region. In addition to its construction, Charlotte Water has engaged the surrounding communities to create a Community Benefit Project. This initiative will preserve a 90-acre parcel of natural land and ensure a legacy of environmental preservation and engagement for future generations.

### **Pages 10-13 At A Glance Fiscal Year 2024**

Every dollar spent by Charlotte Water represents \$17.70 in economic growth for the region.

Average Customer Bill\*:

\$75.98 for a 7Ccf customer per month

\*doesn't include storm water fees

#### **Water Rates**

Tier 1: 1-4 Ccf

\$1.89 per Ccf

Tier 2: 5-8 Ccf

\$2.44 per Ccf

Tier 3: 9-16 Ccf

\$5.64 per Ccf

Tier 4: Over 16 Ccf

\$10.69 per Ccf

What is a Ccf?

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

#### **Rates and Fees**

##### **Availability Fees**

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

Water 5/8-inch Connection Size: \$1.38/month

Water 1-inch Connection Size: \$3.45/month

Sewer 5/8-inch Connection Size: \$9.06/month

Sewer 1-inch Connection Size: \$22.64/month

##### **Fixed Fees**

Covers the cost of servicing customer accounts

Water - \$5.52 per month  
Sewer - \$5.52 per month

**Sewer Rates** - \$5.66 per Ccf of water used

### **We Maintain**

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

### **Award-Winning Utility**

- 2022 NACWA PLATINUM PEAK PERFORMANCE AWARDS  
McAlpine Creek, Sugar Creek, Mallard Creek, McDowell Creek
- 2022 NACWA COMPLIANCE TESTS: 7,168
- 2022 UTILITY OF THE FUTURE TODAY AWARD
- MEMBER OF THE CLASS OF 2022 WEF FELLOWS  
Angela Charles
- ACEC ENGINEERING EXCELLENCE AWARD
- 2022 NACWA GOLD PEAK PERFORMANCE AWARDS  
Ashe Plantation, Irwin Creek
- NC ONE WATER: DISASTER PREPAREDNESS AWARD (Charlotte Water), GOLDEN MANHOLE AWARD (Jackie Jarrell), BOARD OF TRUSTEES AWARD (Carl Wilson), TREASURER AWARD (Carolyn Ross)
- NC AWOP AWARD: Franklin, Vest, Lee S. Dukes
- Charlotte Water maintained a AAA bond rating from Fitch, Moody's, and Standard and Poor's.

### **Our 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.

1922 – Construction began on the Vest Water Treatment Plant.

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.

2023 – Charlotte Water employs a staff of 1,106, serving more than 1 million customers and pumping more than 116 million gallons of water per day.

## **Facts and Figures**

326,187 total water service connections

116.18 MGD average gallons of drinking water pumped daily

25.7 gal How much water can you get for \$1 (based off of both water and sewer fees using tier one rate)

4,104 food service establishments inspected to protect the system from sanitary sewer overflows

55 industries regulated to protect against harmful pollutants

85 MGD average wastewater treated daily

4,562 miles of wastewater mains maintained

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

342 water quality sampling stations



18,340 hydrants maintained

170,000 laboratory analyses performed each year

417 average number of high bill inspections per month

0 notice of drinking water quality violations

116,755 manholes maintained

4,570 miles of water mains maintained

89,918 valves maintained

9,132 total miles of pipe maintained by Charlotte Water. That's enough pipe to go to Alaska and back!

## **Maintenance**

### **Water**

4.7 miles of water pipes replaced or rehabbed

47.8 miles of new water pipes installed (includes donated)

### **Wastewater**

8.4 miles of wastewater pipes replaced or rehabbed

53.5 miles of new wastewater pipes installed (includes donated)

2,240 manholes replaced or rehabbed

472 water leaks repaired (includes mains)

922.5 miles of wastewater pipes cleaned (includes contractors)

This is Charlotte Water's facts and figures at a glance for fiscal year 2024. Language translation is available upon request.

Estos son los hechos y las cifras de Charlotte Water de un vistazo para el año fiscal 2024. La traducción al español está disponible bajo petición.

Voici en un coup d'œil les faits et les chiffres de Charlotte Water pour l'exercice 2024. La traduction française est disponible sur demande.

Это факты и цифры Шарлотт Уотер с первого взгляда на 2024 финансовый год. Перевод на русский язык предоставляется по запросу.

Đây là sự kiện và số liệu của Charlotte Water, trong nháy mắt cho năm tài chính 2024. Bản dịch tiếng Việt được cung cấp theo yêu cầu.

这是夏洛特水务公司2024年财政年度的事实和数据。可根据要求提供中文翻译。

## **Page 14 – Settling a Multimillion Dollar System Development Fee Lawsuit**

During the 2023 fiscal year, the Charlotte City Council approved a legal settlement between Charlotte Water and a law firm representing local real estate developers and builders. The lawsuit was part of an overall class action lawsuit against more than two dozen cities in North Carolina, including Charlotte, over the legality of water utilities charging system development fees. The developers and builders claimed that utilities' system development fees should be halted and paid back. System development fees are a long-standing industry standard, which are codified in the state statutes - North Carolina General Statute 162A Article 8 - and an important aspect of a water utility's capacity-building program.

Charlotte Water, like other utilities in the state, charges system development fees to developers and other home builders to partially recover upfront costs associated with capacity investments.

Fees range from \$3,500 to more than \$1 million and depend on the size of the meter being requested. They are typically passed along to the developers' clients. These fees – not charged to the average Charlotte Water customer – help offset the financial investment required to build the necessary water and sewer system expansions for new developments. Without system development fees, all customers would bear the cost of the additional capacity required when new developments add on to the water and sewer systems.

The initial lawsuit was filed by the developers in November 2018. A second lawsuit was filed by the developers in April 2021. It was similar to the first but covered a different timeframe. Since the purpose of Charlotte Water's system development fees and the extensiveness of our Capital Investment Plan (CIP) program are fundamentally different than those of the other cities involved in the lawsuit, Charlotte Water felt confident in the case. Yet after four years of litigation, Charlotte Water lost the first lawsuit and made the decision to settle the second. Though the City of Charlotte continues to dispute the allegations, a settlement was recommended to avoid further financial risk to all existing customers.

The settlement, which includes two payment installments culminating to a total of \$106 million, will be spread out across two years. The first installment of \$90 million has already been paid using mainly Charlotte Water reserve funds in order to bear the brunt of the financial impact. The second settlement of \$16 million will be paid through a multi-prong solution of reduced cash flow to current capital investment projects and short-term delays to some projects.

Legal staff also recommended changes to Chapter 23 of the City Code to clarify and further define Charlotte Water revenues and use of funds, which the Charlotte City Council approved on January 23, 2023.

## **Page 15 – Flowing Away From Lead**

In 2021, the U.S. Environmental Protection Agency (EPA) updated and revised the lead and copper rule (LCRR), strengthening regulations for eliminating lead from drinking water.

These revisions include many activities not previously required of public water service providers. In early 2022, Charlotte Water launched Lead Free CLT as the comprehensive program for LCRR activities, as required by the EPA.

Lead Free CLT is a multi-faceted program that includes creating and maintaining an inventory of public and private water service lines for the utility's service area, developing a lead sampling plan for all service area schools, providing public education about the presence and effects of lead in drinking water, and removing any utility-owned lead service lines.

The Lead Free CLT website, [charlottewaterlead.org](http://charlottewaterlead.org), launched in the spring of 2022. In August 2022, Charlotte Water conducted stakeholder presentations to engage key community organizations on Lead Free CLT. In 2023, Charlotte Water began the first phase of field investigations needed to develop the water service line database, with fieldwork continuing throughout the rest of the year. Charlotte Water is on track to meet the initial compliance deadline for LCRR in October 2024.

Charlotte Water has monitored its water supply for lead for decades, discovering no apparent risk of lead exposure from the public distribution system. Additionally, Charlotte Water proactively implements corrosion control, such as keeping water at a higher pH and pressure to prevent leaching or corrosion. Overall, lead materials are limited in the Charlotte metro region because a significant amount of development and construction occurred after the 1986 national lead ban.

## **Page 16 – Working with WSACC to Collect Wastewater**

Charlotte Water owns and operates five wastewater treatment plants that treat wastewater collected throughout more than 4,400 miles of mostly gravity-fed pipes. Nevertheless, it is cost-prohibitive and nearly impossible to collect wastewater hydraulically through gravity-fed pipes in certain Mecklenburg County basins. Therefore, Charlotte Water has an updated contract with the Water and Sewer Authority of Cabarrus County (WSACC) to receive and treat up to 7.4 million gallons per day (MGD) of wastewater and to serve some of these hydraulically limited basins.

### **WSACC Basin Status**

In October 2021, Charlotte Water reached the maximum limit of permitted sewer flow to the WSACC system and therefore had no additional treatment capacity within the system. Both Charlotte Water and WSACC initiated various permit review holds and capital projects to temper and manage sanitary sewer capacity requests. Each organization has made significant progress on capital projects that increase treatment capacity. In addition, other activities and events have positively impacted the existing Charlotte Water-WSACC contract such as:

- Charlotte Water requested and was approved for a reduced flow factor for sanitary sewer discharges for residential development.
- Charlotte Water prioritized efforts to assess and remediate inflow and infiltration.
- Calendar year 2022 rainfall was less than previous years.
- Charlotte Water is allowed conditional approvals of permits based on future treatment capacity.
- Natural progress of private development's construction of previously reserved capacity (paper capacity) has converted to actual sewer flows.
- Charlotte Water also began construction on a new pump station and force main at Clarke Creek to alleviate sewer flows.

## **Page 17 – Map of Mecklenburg County**

**Description of Map Graphic:** *The map shows the locations of five wastewater treatment plants run by Charlotte Water in Mecklenburg County: McDowell Creek Wastewater Treatment Plant, Mallard Creek Wastewater Treatment Plant, Irwin Creek Wastewater Treatment Plant, Sugar Creek Wastewater Treatment Plant and McAlpine Creek Wastewater Treatment Plant. The location for Stowe Regional Water Resource Recovery Facility is also noted, as is the general location of Rocky River Regional Wastewater Treatment Plant in Cabarrus County.*

## **Pages 18 – 19 Increasing Water Capacity in Booming South End**

Anyone who takes a trip along the Lynx light rail or walks down the Charlotte Rail Trail can see the South End neighborhood is experiencing a high rate of development.

The piping system in the area was installed in the 1920s and 1930s and could not accommodate the region's projected population growth.

To address the needs of an aging water system in South End and ensure ongoing, reliable service for customers, Charlotte Water crews planned a large, capacity-increasing, community improvement project requiring strategic planning and cross-department collaboration. Charlotte Water teams needed to rehabilitate and replace water pipes in the middle of the active South Boulevard corridor and install a new water main designed and constructed to address the current and projected water demands of South End. The new water main's goal was to increase the water supply to approximately four times its previous volume. This giant task became known as the South End Water Main Improvement Project (SWM).

The SWM Project began in September 2020 and was broken down into multiple phases of work along South Boulevard from Scaleybark Road to Worthington Avenue.

Approximately 9,500 feet of new, 24-inch diameter ductile iron drinking water pipe was installed. Other improvements such as sewer pipe updates, stormwater repair collaboration, and sidewalk and asphalt updates were also completed. In total, crews installed more than 14,000 linear feet of new piping along the corridor.

To accomplish this important and complex work while keeping construction crews, motorists, and pedestrians safe, a barrier wall was placed along the busy corridor, limiting traffic to one lane at a time on each side. Additionally, several detours and traffic impacts occurred during the two years the project was underway.

Throughout the SWM Project, construction crews worked quickly and safely to mitigate impacts as much as possible. They collaborated closely with business owners and residential properties to ensure there was continued, reliable water service. Importantly, the team made it a priority to always keep at least one lane of traffic open along South Boulevard. Pedestrian crosswalks also remained open for the bustling area's foot traffic.

During the project, heightened coordination took place with the Charlotte Department of Transportation (CDOT), Charlotte Area Transit System (CATS), Charlotte-Mecklenburg Schools (CMS), Charlotte Center City Partners, and other utility providers to keep the community and businesses informed of changes, project updates, and key milestones.

In October 2022, SWM crews removed the final section of barrier wall along South Boulevard, re-opening all traffic lanes. This signaled the end of significant project road work. Due to this multi-faceted project, an increased amount of water is now able to flow into and help support the burgeoning South End community.

#### **Graphics:**

- Getting Back in the SWM of Things
- In 2022 alone, over \$4 billion in development was expected for Charlotte's metro area, including South End.

#### **Page 20 – Helping Customers Pay Their Bills**

Deondra “Dee” Hagans has always had the desire to help people, which is why she has always worked in public service in some capacity. It's also one of the things that excites her the most about her new role as a Customer Service Representative, working with both Charlotte Water and Mecklenburg County's Department of Social Services (DSS).

“I like being able to better the lives of the people I come in contact with,” Hagans said. “This partnership between the City and County allows me to help residents get connected to resources that they need most.”

As a liaison between both departments, Hagans works as a City and County representative helping residents connect to financial aid assistance and resources they qualify for. She has an extensive background in financial assistance, including five years spent working with DSS in its Economic Services division. However, this new position and role is especially important because of how it was created and the purpose it serves.

During COVID, Charlotte Water saw the financial strain the pandemic had on customers. To decrease some of this burden, late fees were lifted, disconnections were suspended, and payment plans were extended so families had access to water services during a time of financial hardship.

As the pandemic continued, financial assistance through grants, community programs, and state and federal funds were allocated to families to help cover rent, utilities, food, and other necessities. One such state program was called the Low-Income Household Water Assistance Program (LIHWAP) and focused specifically on helping residents with their outstanding water bills. The state government sent funds to Mecklenburg County, which would then distribute it to households in need.

To accomplish this, Charlotte Water and DSS had to work closely together. Representatives met weekly to create a process to best distribute the funds. Details such as how residents applied for aid, as well as how to help people who were not eligible, were discussed at these meetings.

In the end, DSS and Charlotte Water decided to auto-match the funds of accounts that qualified. Charlotte Water would send a list of accounts that were overdue or at risk of being disconnected when regular billing procedures resumed to DSS. DSS would then check if those accounts had already become eligible for other aid and match them with funds through the LIHWAP program. Those who were eligible would receive a one-time credit that cleared their water bill balance.

Because of this collaboration, thousands of residents were able to get a financial fresh start when account balances were forgiven. As more funds were released from the state government, DSS and Charlotte Water saw an opportunity to create a full-time position between the two departments that would be bigger than just the LIHWAP program. Charlotte Water always seeks ways to connect customers to available financial aid. Meanwhile, DSS understands that if customers need water bill assistance during a financial hardship, there is a possibility they might need other financial assistance as well.

Hagans' new role is opening up opportunities for future partnerships between the City of Charlotte and Mecklenburg County that will benefit the community.

“Being able to work with both agencies means I have the ability to help the customers in several ways, versus just one area of need they might have,” Hagans said. “It’s a win-win-win for everyone.”

On April 25, 2023, representatives from Charlotte Water and Mecklenburg County Department of Social Services celebrated the ongoing partnership between the two agencies.

## **Page 21 – Riding the Digital Wave**

Engaging with customers through digital tools such as Charlotte Water’s website, blog, and social media platforms was an integral part of community engagement in the last year.

In addition to significant updates to the website and blog, Charlotte Water also was very active on Twitter, Instagram, LinkedIn and Facebook.

- 12,719 total followers across social platforms
- 2,478 total messages sent

- 1,971 total published posts
- 1,580,244 total impressions across social platforms

### **Charlotte Water Introduces New Emergency Alert System**

In 2022, Charlotte Water implemented a new alert system that allowed the utility to call, text and email customers to inform them of service outages and other emergency incidents. Examples of incident alerts include planned and unplanned water outages, sanitary sewer overflows and water quality concerns.

“We have been working on a notification system for quite some time and are ready to introduce it to our customers,” Charlotte Water Director Angela Charles said. “We appreciate our customers’ suggestions and their patience as we worked on the right solution. This is a crucial tool to help update customers as incidents and situations develop.”

The new system is designed to send messages to account holders, who can opt out at any time. Charlotte Water encourages non-account holders, such as renters, tenants and property managers, to visit the organization’s website to sign up for alerts. During fiscal year 2023, Charlotte Water alerted more than 160,000 customers about water outages and sanitary sewer overflows in their neighborhoods through the alert system.

### **Pages 22 – 23 Tracking Davidson Pointe’s Water Usage in the Cloud**

In 2020, Charlotte Water began work for the Davidson Water Transmission Main Project, which included adding a water main to the neighborhood of Davidson Pointe and taking the community off well water and into the Charlotte Water system.

The project, broken into three phases, was designed to increase the resiliency and reliability of the water transmission system in the northern portion of our service area, specifically to address pressure reliability and water capacity for existing and future customers.

Phases 1 and 2 of the project were completed in 2019. After preparing and communicating with the neighborhood for months, in February 2022, crews from several Charlotte Water divisions completed a years-long project to connect the Davidson Pointe neighborhood to the Charlotte Water system. Town of Davidson Charlotte Water customers within Iredell County (previously existing sewer-only Charlotte Water customers) will now have access to clean, reliable water service and enhanced fire protection within the community. Although Phase 3 was completed in February 2022, the ultimate connection to Davidson Pointe was made in February 2023.

More than 50 employees from Field Operations, Engineering, Lab Services, Communications, and Customer Service worked from sun-up to sundown to connect the neighborhood to the City’s system, flush the old well water from pipes, install new meters, pass out water, answer questions, and provide up-to-date information and overall amazing customer service. Davidson Pointe residents routinely expressed how impressed and grateful they were for Charlotte Water’s presence, professionalism, hard work, and quality of service.

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Another exciting aspect of this water project included Charlotte Water piloting new water meters with a newer, advanced water meter reading system in this neighborhood. Currently, residents get monthly updates with their water bill about their water usage. The new transmitter on the water meter will send updates to the cloud every 15 minutes. Residents will be able to see these updates online.

With these updates, residents can spot leaks and adjust usage accordingly. You won't have to wait until you get your water bill to find out that a toilet upstairs has been running all month, or that your child is taking hour-long showers. The new updates will let residents know that usage is occurring and the time of day it's being used. It will be up to residents to determine the source of their higher bills, but the extra data will help people to identify problems earlier.

This data will also allow Charlotte Water to anticipate and identify leaks and issues on our end, giving us needed information to better serve customers. We can reallocate resources away from driving meter routes and instead focus on meeting the needs of our customers.

Advanced Meter Infrastructure allows Charlotte Water to create a better experience for Charlotte Water customers. Having greater access to consolidated data allows Charlotte Water to better prepare for droughts, usage surges, changes in water pressure and temperature, etc. Currently, these advanced water meters are only used for a few commercial clients. Charlotte Douglas International Airport, Bank of America Stadium, Frito-Lay, Lance, and SouthPark Mall use the new advanced water meters. Davidson Pointe is the first residential area to use these new meters. The Davidson Pointe neighborhood location was chosen because the surrounding water meter routes were full due to the growth in the area. Rather than restructuring existing water meter routes, they were a practical choice for a pilot. This is all part of Phase 1 of a three-phase launch of these advanced water meters throughout the City. Future rollout of the new meters across the system will occur in different phases over several years.

Advanced meter infrastructure allows Charlotte Water to create a better experience for its customers.

## **Page 24 – Reducing the Risk of Forever Chemicals**

In March 2023, the U.S. Environmental Protection Agency (EPA) proposed a National Primary Drinking Water Regulation (NPDWR), to establish a Maximum Contaminant Level (MCL) in drinking water for six per- and polyfluoroalkyl substances (PFAS). An MCL establishes a level for a contaminant in drinking water below which there is no anticipated risk to human health. The Safe Drinking Water Act (SDWA) requires the EPA to create NPDWRs for contaminants that might cause negative health outcomes.

Due to known health risks, PFAS “forever chemicals” are becoming more regulated and being used less frequently across industries. There are thousands of different kinds of PFAS compounds that do not break down naturally in the environment or the human body.



Forever chemicals have been used for decades in numerous industries and are currently part of many products such as waterproof jackets, nonstick pans, and fast food wrappers.

When the recent NPDWR is finalized, MCLs will establish a maximum level at which the six PFAS contaminants can be present in drinking water. The EPA will require public water service providers to not exceed that level. Moreover, the EPA has proposed regulating two of the six types of PFAS specifically, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS), to a level that can be reliably measured: 4 parts per trillion (ppt) MCL.

This government action represents a move toward stricter regulation of PFAS compounds. Yet until the NPDWR becomes an enforceable regulation, it is known as a health advisory, or guidance provided by the EPA until a formal rule is established. A health advisory level identifies the amount of a contaminant in drinking water at which adverse health effects are not expected to manifest over a specific amount of time spent being exposed to that contaminant.

Charlotte Water had no detections for any of the six PFAS during UCMR3 monitoring in 2013-2014. In 2018, Charlotte Water began additional, voluntary monitoring of source water and drinking water. The organization currently proactively and voluntarily monitors source and drinking water for more than 70 PFAS quarterly. Charlotte Water meets or exceeds all drinking water standards. Monitoring results demonstrate very low levels of PFAS, with either undetectable levels of PFAS or levels that are barely above the detection limit. All detections have been within the anticipated 4 ppt MCL.

## **Page 25 – Crews Repair Central Avenue Leak**

In February 2023, crews managed to stop a wastewater overflow along Central Avenue and discovered a water main leak that was not visible above ground level. The road was closed during this time, and the crews took the opportunity to inspect and replace other water, wastewater, and storm water pipes to reduce the need for future repairs. The repair work spanned several weeks. Charlotte Water worked with CSX to maintain railway routes during this time and coordinated with the Charlotte Department of Transportation (CDOT) to ensure uninterrupted water service and business access to the affected area. The primary goal of the repair effort was to minimize disruption to nearby businesses and maintain water service.

## **Wastewater Pipe Rehabilitated Below Carolina Place Mall Parking Lot**

Charlotte Water successfully installed a new interior lining within a huge wastewater pipe, which measured 78 inches in diameter, beneath the Carolina Place Mall parking lot. The installation of the sock-like lining created a new pipe inside the older pipe, thereby extending service without requiring crews to dig and install a new pipe. This foresight will reduce the risk of future overflows and protect water quality in nearby creeks.

During the project, crews installed temporary pipe bridges across Carolina Place Parkway and Park Road to convey the community's wastewater while the underground pipe was cleaned and the new lining was being installed. The use of bridges to pump wastewater over streets to

maintain service was a first in Mecklenburg County. These bridges reduced road and traffic delay impacts for drivers during the project.

## **Page 26**

### **Photo Captions**

McDowell Creek – Platinum  
Mallard Creek – Platinum  
McAlpine Creek – Platinum  
Sugar Creek – Platinum  
Irwin Creek – Gold  
Ashe Plantation – Gold

### **NACWA Peak Performance Awards**

The Peak Performance Awards recognize NACWA member agency facilities for excellence in permit compliance. The Platinum Award recognizes 100 percent compliance with permits during a consecutive five-year period, and the Gold Award recognizes 100 percent compliance for the calendar year.

## **Page 27 – Charlotte Water’s Awards & Recognitions in 2022**

### **UTILITY OF THE FUTURE TODAY AWARD**

This program recognizes utilities that exhibit sustainability and resilience in the communities they serve.

### **WEF FELLOWS** *Angela Charles*

The Water Environment Federation (WEF) selected Charlotte Water Director Angela Charles as a member of the class of 2022 WEF Fellows. Angela is one of 14 distinguished members in this cohort. This prestigious designation honors members’ contributions to the water sector, as well as their professional prominence and achievements. WEF Fellows are recognized in various areas of expertise including design, education, operations, regulation, research, utility management, and leadership.

### **ACEC ENGINEERING EXCELLENCE AWARD**

*Awarded to Irwin Creek Tributaries Sanitary Sewer Replacement Project*

### **NC AWOP AWARD**

*Awarded to all Water Treatment Plants: Franklin, Vest, and Lee S. Dukes*

The NC Area Wide Optimization (AWOP) Award is a prestigious award that is part of a state effort to enhance the performance of existing surface water treatment facilities. Awards are given each year to water systems that demonstrate outstanding turbidity removal, a key test of drinking water quality. While all drinking water systems must meet strict state and federal drinking water standards, these systems met performance goals that are significantly more stringent than state and federal standards.

## **NC ONE WATER AWARDS AND RECOGNITIONS:**

### *Disaster Preparedness Award - Charlotte Water*

This award is presented to utilities in acknowledgment of outstanding achievement in advancing disaster preparedness initiatives, thereby strengthening our preparedness and increasing our resolve to prepare for, respond to, recover from, and mitigate the effects of natural disasters, man-made disasters, and acts of aggression against our locality, county, state, and nation.

### **Golden Manhole Award - Jackie Jarrell**

This award recognizes individuals who are significant contributors to the advancement of the systems design, education, training, certification, construction, operations, maintenance, and management of water distribution systems or wastewater collection systems.

### **Treasurer - Carolyn Ross**

Carolyn Ross has been active with the association since 1996 and is continuing her service role. She is the outgoing Secretary of the NC One Water Board and received the nomination to serve as the incoming Treasurer for 2023.

### **Board of Trustees - Carl Wilson**

Carl Wilson has been involved with NC One Water for almost 10 years where he has served in various roles. Most recently, he worked as a program committee chair during the annual conference. Wilson also was nominated and selected to serve on the Board of Trustees for NC One Water.

## **Page 28 – Charlotte Water Financials**

Charlotte is a rapidly growing city in an equally rapidly expanding region. Investments in vital resources and infrastructure will not only support that growth but also allow everyone to have a quality of life that is only possible through access to a safe, clean, and reliable water system. Charlotte Water works toward its goal of ensuring safe drinking water for all through improvement and enhancement projects and by working dependably to maintain, repair, and replace foundational infrastructure across the region.

Charlotte Water is legally required to operate as a “cost-of-service provider.” This means that as a utility, the organization must strictly use fees and rates to support, maintain, and grow the water system. That requires Charlotte Water to operate as a sound water steward and as a business that, on the one hand, does not make a profit, but, on the other, cannot legally operate at a loss.

Charlotte Water does not use property tax or sales tax to operate or fund capital improvements. Charlotte Water is supported entirely by water and sewer rates and fees paid by customers. Thus, each dollar earned has a specific purpose in how it goes to work in the water system.

These rates allow Charlotte Water to:

- Provide clean, safe and reliable drinking water
- Maintain more than 9,000 miles of water and wastewater pipes
- Rehabilitate, replace and invest in aging infrastructure

- Exceed regulatory requirements
- Support regional growth
- Safely transport and treat wastewater

To achieve these objectives each year, Charlotte Water systematically evaluates its existing infrastructure, upcoming capital needs, and other industry and economic variables. This helps determine if a rate adjustment is necessary. Potential adjustments are presented to the Charlotte City Council, explaining how each dollar will be used and where it will go. If approved, the new rates typically go into effect in July of that year. Charlotte Water operates on a fiscal year plan which runs from July of the current year into June of the following year.

To calculate these rate adjustments, Charlotte Water uses a nationally recognized rate consultant to evaluate and audit its rate model. This complex model uses many variables, such as regulatory, personnel, and industry costs to create a ten-year projection.

## **Page 29 – Capital Investment Plan**

A large part of these rates goes toward funding Charlotte Water’s Capital Investment Plan (CIP). Each year, the organization identifies and prioritizes several projects that are needed within a five-year period. Projects selected must meet certain requirements, such as fulfilling capacity needs, supporting future development, or improving the quality of life for the community.

The goal of the CIP is to:

- Line up with Charlotte Water’s mission and vision to serve customers
- Identify the right projects
- Identify the funding needs
- Maintain consistent annual funding levels
- Ensure financial viability
- Balance goals against supporting municipal vision plans, economic development, and regulatory requirements

## **FY 24 Industrial Sewer Rates**

Charlotte Water recently worked with a utility consulting firm to complete a rate study and better understand its rates and cost of treatment. During the evaluation, the organization learned that some of its industrial sewer rates had not been updated since 2011. This meant a rate recovery was needed for:

- Increased costs of treatment
- Treatment plant improvements
- Operational costs and program costs

Industrial fees are different than regular customer sewer rates because industries usually have different or stronger compositions of certain chemicals in their water waste. Yet treatment plants typically are designed and regulated for residential-strength wastewater.

Each industry or business is unique in its water usage and discharge. For most commercial and utility users, the bill is calculated based on how much water is used and the wastewater's composition. In general, the more water is used, the greater the bill. For monitored industries, the higher the concentration of Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), or ammonia discharged, the more a business will pay. Non-monitored industries such as breweries and restaurants incur the high-strength volume charge.

To mitigate the impact of the rate recovery, rates are proposed to increase in three phases:

- July 1, 2023
- January 1, 2024
- Incremental increases annually expected to start July 1, 2024

### **Pages 30-31 A Look Ahead**

“As we consider the days to come, we are excited about the future of our organization.”

As we end another successful year and eagerly anticipate the coming one, we remain steadfast in our mission to provide the highest quality water services possible.

We have implemented new technologies, improved our infrastructure, and taken proactive steps.

This report showcases the great strides we have made in providing our customers with access to safe, clean, and affordable water to ensure that we are exceeding all regulatory standards, while also satisfying the needs of our customers. We take pride in reporting that our water quality remains excellent, and we are committed to continuing to invest in meeting the requirements of our growing community. We also pledge to be a responsible steward of our environment and protect our natural resources for future generations.

As we consider the days to come, we are excited about the future of our organization. There is nothing more important to us than supplying our community with access to one of life's most vital needs: water. We will continue to invest in cutting-edge technology and infrastructure, and we will work closely with our partners and communities to assure that we are ever responsive to the changing needs of our customers.

We want to thank our customers for their continued support and trust in our organization. It is a true honor to serve the Charlotte region, and we look forward to strengthening our relationship with you in a more sustainable tomorrow.

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Charlotte Water logo  
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Operated by the City of Charlotte