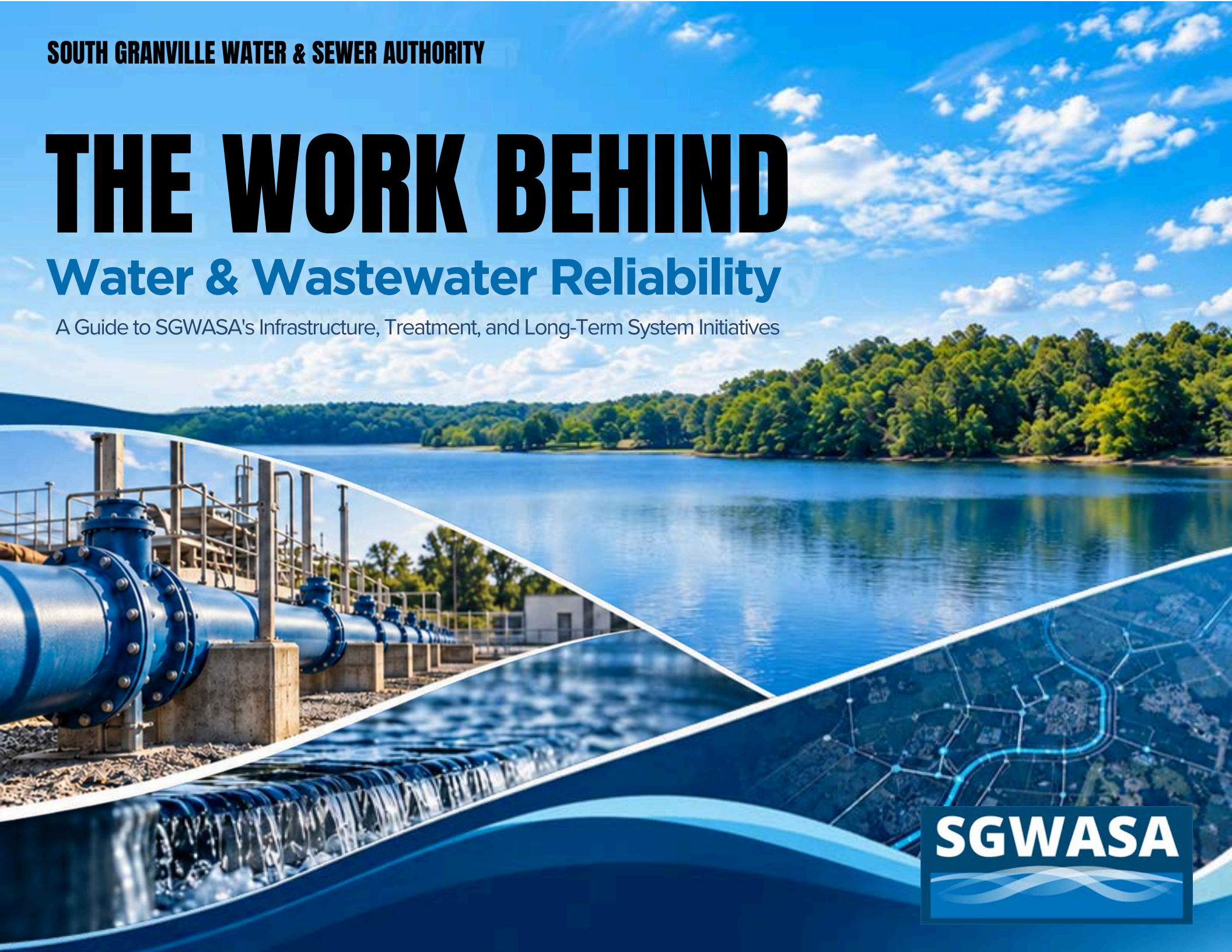
SOUTH GRANVILLE WATER & SEWER AUTHORITY

THE WORK BEHIND

Water & Wastewater Reliability

A Guide to SGWASA's Infrastructure, Treatment, and Long-Term System Initiatives



About This Publication:

This guide provides a concise look at the infrastructure, treatment, and planning initiatives shaping SGWASA's water and wastewater system.

Through project profiles and system insights, the publication serves as a companion to the presentations featured at SGWASA Connect and the SGWASA website. Explore how current water quality and infrastructure projects work together to strengthen reliability, support water quality, and prepare the system for long term community needs.

Visit the links included in the guide to view corresponding information on the official SGWASA website.



Strengthening Southern Granville County's Water & Sewer Infrastructure





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SGWASA

Thank you for joining us at SGWASA Connect: Community Information session and for taking an active interest in the work of the South Granville Water and Sewer Authority. Your participation reflects an important principle of public service: strong communities depend not only on reliable infrastructure but also on informed engagement, access to information, and public trust.

SGWASA's responsibility extends beyond operating water and wastewater systems. We are also responsible for carefully managing public resources, advancing critical infrastructure, and communicating openly about the projects, programs, and decisions that shape the future of service in southern Granville County. We established SGWASA Connect as part of that commitment and as a direct forum for sharing information, inviting dialogue, and building a greater understanding of the work underway across the Authority.

As you move through the event, we invite you to speak with our representatives, engineers, project partners, and technical experts. Ask questions, review the project and water quality exhibits, and learn more about investments in system reliability, treatment, infrastructure, and customer service. These conversations help ensure that our work remains connected to the people and communities it is intended to serve.

That connection should continue beyond this event. We encourage customers to subscribe to SGWASA news, service notifications, project updates, and emergency alerts at sgwasa.org/alerts. Staying informed provides a clearer view of the work taking place throughout our service area and helps strengthen the relationship between the Authority and the public we serve.

On behalf of the South Granville Water and Sewer Authority, thank you for your time, participation, and continued interest in SGWASA's work. We remain committed to serving our community with accountability, professionalism, and a long-term focus on the reliable systems and services our customers depend on.

Sincerely,

Scott N. Schroyer

SGWASA Executive Director

Board of Directors

SGWASA is governed by a Board of Directors whose members are appointed by the agencies they represent to serve three-year terms. Through this regional governance structure, the Board provides oversight and direction for the South Granville Water & Sewer Authority, while supporting responsible decision making, long-term system stewardship, and the continued delivery of reliable water and wastewater services to the communities SGWASA serves.

sgwasa.org/board



Kenneth McLamb
Stem Commissioner
Board Chair



Georgana Kicinski
Creedmoor Commissioner
Board Vice Chair



Vicky Daniels
Butner Mayor Pro Tem



Archer Wilkins
Creedmoor Mayor Pro Tem



Tom Lane
Butner Councilperson



Russ May
Granville County Commissioner



Jimmy Gooch
Granville County Commissioner

HISTORY OF THE SGWASA SYSTEM

SGWASA's system began in the 1940s from water and wastewater facilities serving Camp Butner during World War II.

As the surrounding area developed, the system expanded to serve homes, businesses, industries, and neighboring communities. In the early 2000s, local and state leaders worked toward a regional management structure that would bring greater local oversight to the utility system.

Regional agreements initiated SGWASA's formation in 2004. The South Granville Water & Sewer Authority was incorporated in 2005, assumed full management of the facilities in January 2006, and received the State-owned water and wastewater system property later that year.

The regional system continued to grow through additional asset transfers, including the City of Creedmoor's water distribution and wastewater collection assets in 2015.



BUILT FOR A WARTIME MISSION. ADAPTED FOR A GROWING COMMUNITY.

In the 1940s, water and wastewater infrastructure in Butner was constructed to support Camp Butner, a military reservation designed to accommodate troops. When the war ended, those facilities remained and became part of the infrastructure serving North Carolina institutions and the surrounding community.

Over the following decades, water and sewer lines expanded beyond the former reservation, Creedmoor connected to the wastewater system, and the utility network evolved into the regional system now managed by SGWASA.

Learn More: sgwasa.org/sgwasa-history



Lake Holt serves as the source of raw water entering SGWASA's treatment process. From the reservoir, water is conveyed to the Water Treatment Plant, where it is treated before entering the distribution system.



SERVICE AREA

SGWASA provides water and sewer service to Butner, Creedmoor, Stem, and surrounding areas within its established service boundary in southern Granville County. The service area extends generally from the Tar River south to the Durham and Wake county lines.

1 LAKE HOLT RESERVOIR

2.2 billion gallons in volume

374 acres surface area

2 WATER TREATMENT PLANT

Five treatment steps:

- coagulation
- flocculation
- sedimentation
- filtration
- disinfection



7.5 MGD treatment capacity

3 DISTRIBUTION SYSTEM



145 miles of distribution system lines

4 OUR COMMUNITY



+ 6,600 water meters systemwide

2,200 older meters in the Creedmoor area identified for replacement

5 WASTEWATER COLLECTION SYSTEM



154 miles of sewer piping

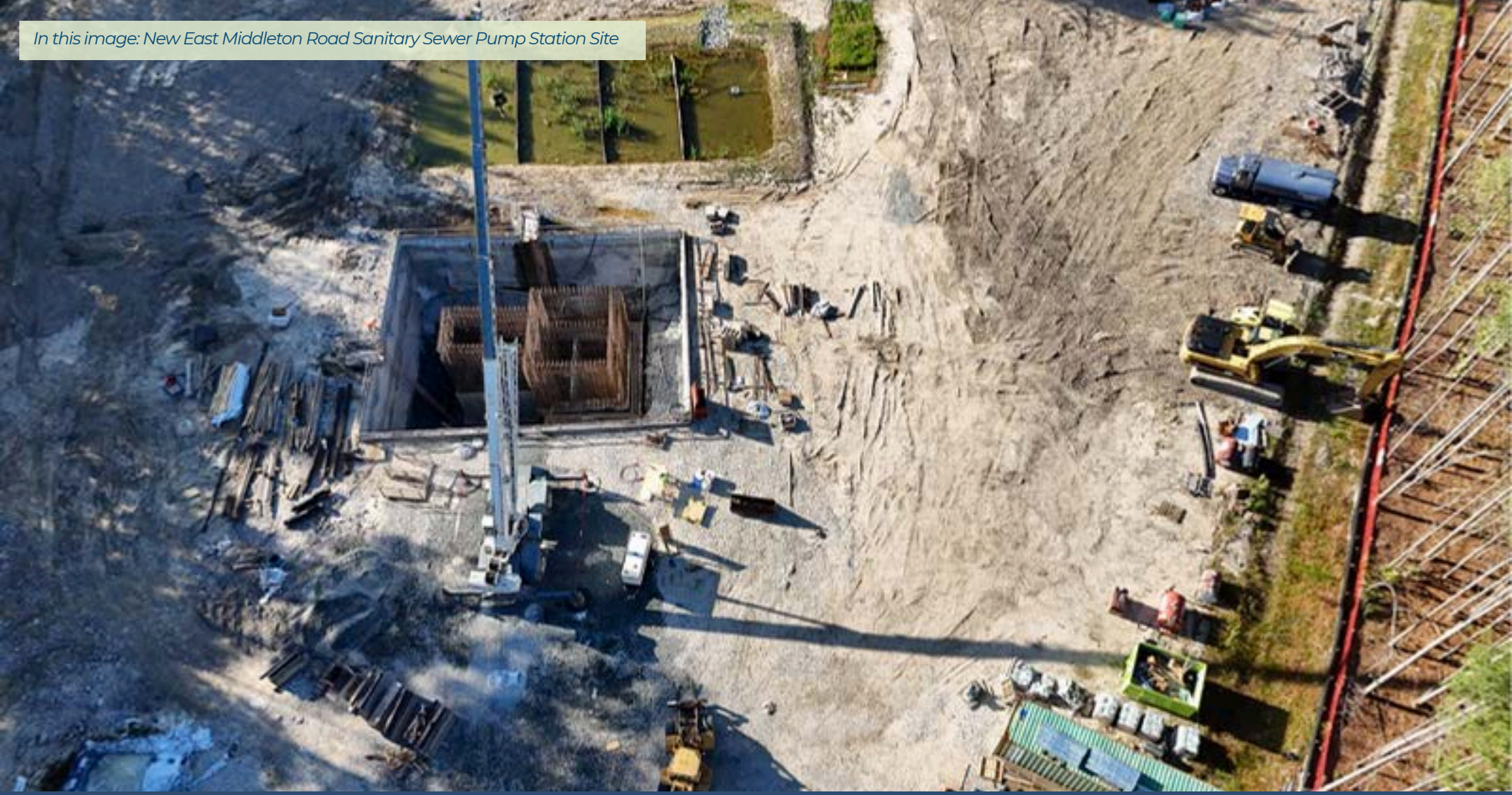
48 wastewater pumping stations

6 WASTEWATER TREATMENT PLANT



5.5 MGD treatment capacity

Learn More: sgwasa.org/contact



In this image: New East Middleton Road Sanitary Sewer Pump Station Site

Infrastructure + Water Quality Projects In Motion

SGWASA

Core Infrastructure + Quality Projects

- PFAS Mitigation Program
- Filter Media Replacement Program
- I-85 Sanitary Sewer Improvement Program
- Unidirectional Flushing Program Pilot
- Master Planning + Infrastructure Assessment

PROJECT OVERVIEW:

PFAS MITIGATION

PROJECT PARTNER: CDM SMITH

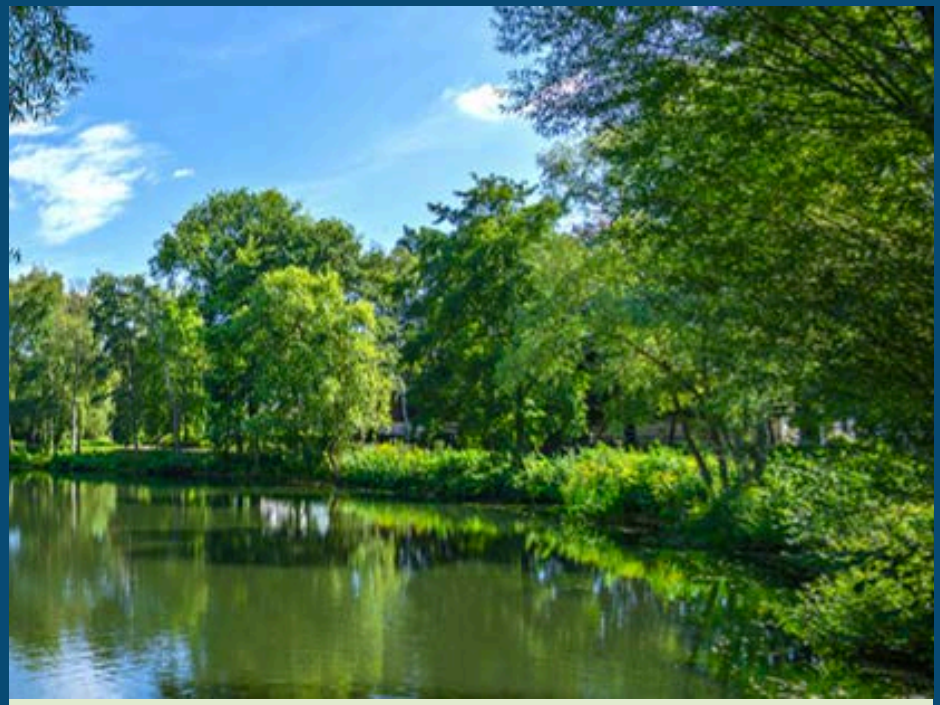
In 2024, the U.S. EPA established nationwide Maximum Contaminant Levels (MCLs) requiring public water utilities to monitor and treat for regulated PFAS compounds.

Following local testing that detected PFAS in SGWASA's raw water source, SGWASA launched a comprehensive mitigation program to meet federal requirements and safeguard drinking water quality.

The PFAS Mitigation Project was developed to position SGWASA for long term compliance while strengthening protection of the drinking-water supply.

Solution: The South Granville Water & Sewer Authority's phased PFAS mitigation approach combines pilot testing with the design of a permanent Advanced Water Treatment facility. The program evaluates treatment performance while advancing the infrastructure needed for long-term PFAS reduction.





FUNDING + PROGRESS

Project funding includes state grants, State Revolving Fund assistance, loans, and other external resources.

A $10,658,880 State Water Infrastructure Authority award includes $6,658,880 in grant funding and $4 million in repayable loans, helping reduce the amount of long-term debt required for the project.

Next steps: Pilot evaluation and engineering work toward final design, permitting coordination, construction, and eventual operation of permanent PFAS treatment infrastructure.



Learn More: sgwasa.org/pfas



PROJECT OVERVIEW:

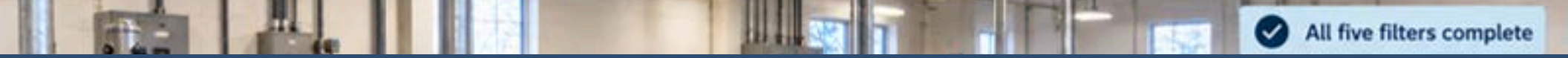
FILTER MEDIA REPLACEMENT PROGRAM

PROJECT PARTNER: HAZEN & SAWYER

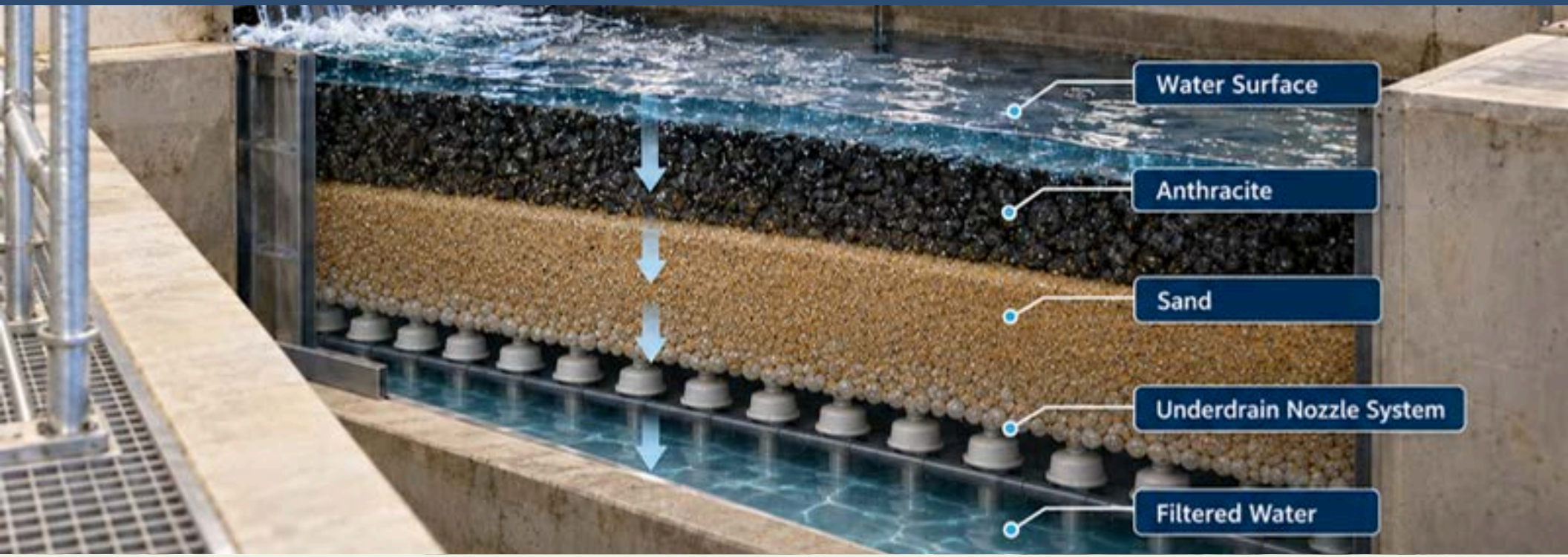
In 2024, SGWASA experienced water-production challenges associated with the filtration process. Engineering evaluation found that the existing filter media was approximately 22 years old and recommended replacement along with other filter-system improvements

Solution: Renewal of the media inside all five treatment filters addressed the identified filtration concerns. Filter media, the layered granular material water passes through during filtration, was replaced one filter at a time.

The phased approach allowed SGWASA to maintain treatment capability while improving filter performance and reliability.



SGWASA's renewed filters use carefully specified layers of anthracite and sand to remove suspended material as water moves downward through the filter bed. The rehabilitation restored media properties to their intended design ranges and addressed filter components associated with backwashing and water collection. Following replacement, SGWASA documented 16% longer average filter runs, 42% less backwash water use, lower finished-water turbidity, and more consistent finished-water quality.



FUNDING + PROGRESS

The authorized construction budget was $987,528 and the final construction cost was $881,146.60. The replacement program has been completed across all five filters. Reported performance trends following the work include longer filter run times, lower turbidity, and reduced ferric usage.

Next steps: With the project completed, the focus moves to continued monitoring of filter performance.



PROJECT OVERVIEW:

I-85 SANITARY SEWER IMPROVEMENT PROJECT

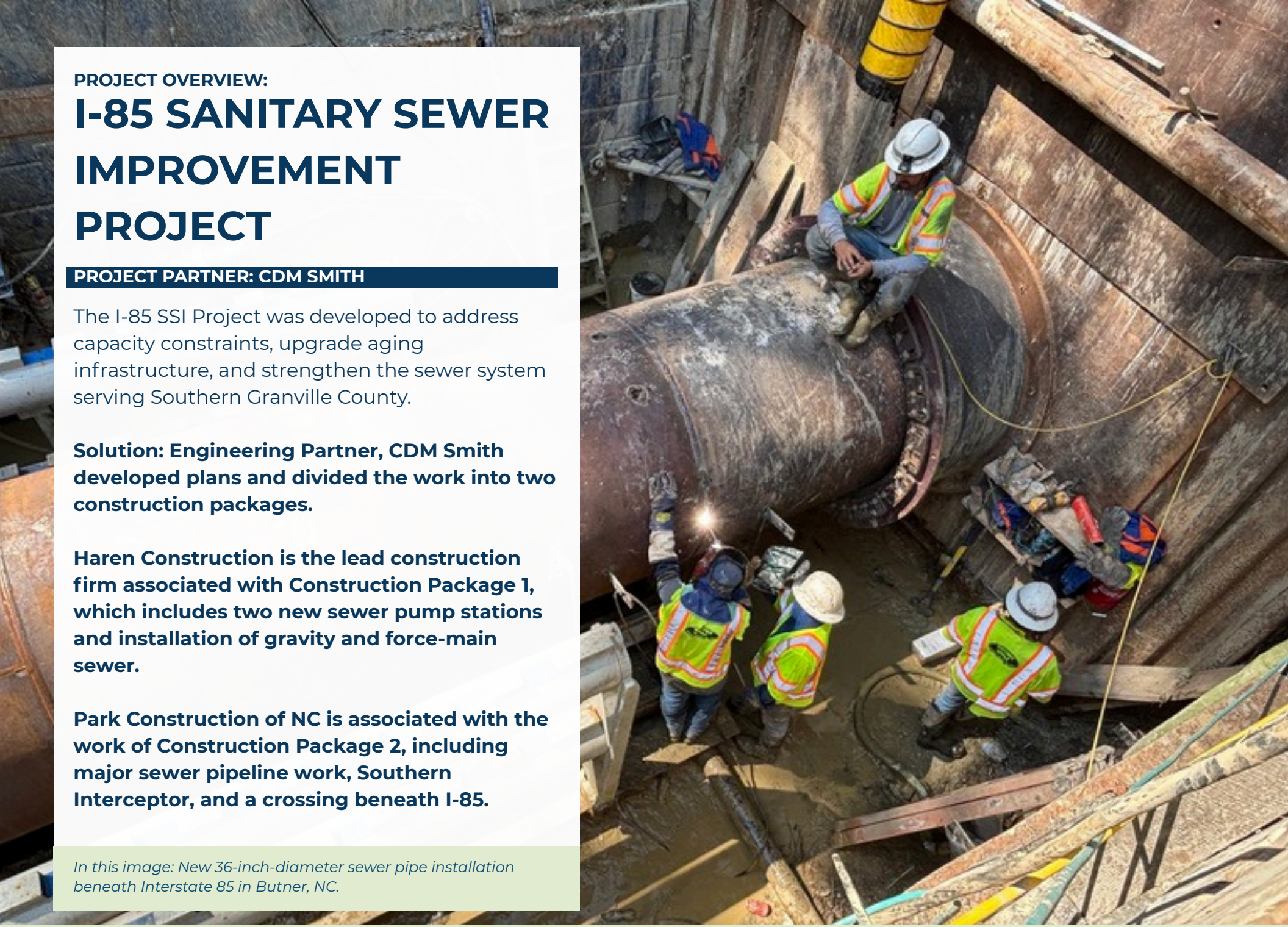
PROJECT PARTNER: CDM SMITH

The I-85 SSI Project was developed to address capacity constraints, upgrade aging infrastructure, and strengthen the sewer system serving Southern Granville County.

Solution: Engineering Partner, CDM Smith developed plans and divided the work into two construction packages.

Haren Construction is the lead construction firm associated with Construction Package 1, which includes two new sewer pump stations and installation of gravity and force-main sewer.

Park Construction of NC is associated with the work of Construction Package 2, including major sewer pipeline work, Southern Interceptor, and a crossing beneath I-85.



In this image: New 36-inch-diameter sewer pipe installation beneath Interstate 85 in Butner, NC.



Haren Construction crew member measuring for the Joe Peed wet well pipe as part of the I-85 SSI Project

FUNDING + PROGRESS

The overall project has been estimated at approximately $75 million. The Northern Interceptor's approximately $8 million cost remained under separate funding consideration.

Next steps: The project continues through construction of the approved packages, testing, restoration, commissioning, and integration of the new sewer infrastructure into SGWASA's collection system.

The Northern Interceptor remains subject to separate funding and sequencing decisions.

PROJECT TIMELINE



2022 - 2024

PLANNING & DESIGN

Project planning, engineering, permitting, and final design.

2025 - 2026

CONSTRUCTION PACKAGE #1 (CP-1)

Gravity sewer, force main, and lift station improvements along Joe Peed Road and W. Middleton Drive to Will Suitt Road.

2025 - 2027

CONSTRUCTION PACKAGE #2 (CP-2)

Trunk sewer, microtunneling beneath Interstate 85, jack-and-bore at Wilkins Road for the Norfolk Southern railroad crossing, and associated pipeline installation

2027

SYSTEM INTEGRATION & TESTING

System tie-ins, testing, and commissioning of new infrastructure.

2027 - 2028

PROJECT COMPLETION

Final construction, restoration, and closeout.

PROJECT OVERVIEW:

UNIDIRECTIONAL FLUSHING PROGRAM

PROJECT PARTNER: HAZEN & SAWYER

SGWASA identified the need for a dedicated hydrant-flushing program to help manage water quality throughout the distribution system. The pilot was developed to evaluate a more systematic approach to moving water through mains and removing accumulated material.

Solution: Hazen & Sawyer developed the pilot program, including updates to the water system model, the flushing plan, field support, project coordination, and technical guidance.

FUNDING + PROGRESS

The pilot task order totaled $45,000 and included modeling updates, program development, field support, project administration, and Board presentations.

Next steps: The pilot provides SGWASA with a framework for evaluating how a structured flushing program can support distribution-system water quality and operational practices.

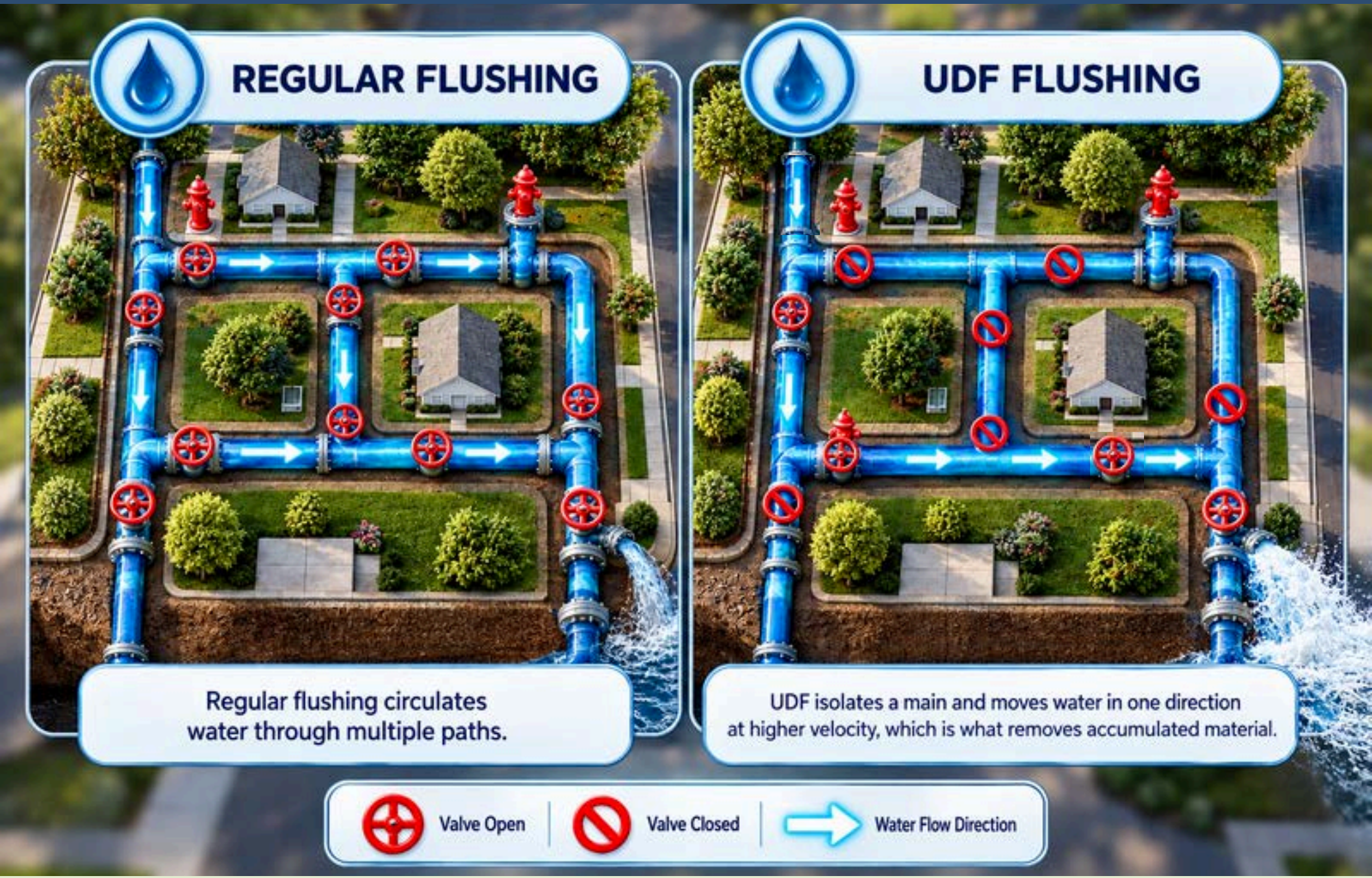
SGWASA prepares to identify and develop additional flushing areas in Creedmoor, Stem, Butner, and parts of Granville County, while planning distribution-system implementation.



This program was very successful in obtaining cleaner and clearer water and highlights SGWASA's continued efforts to provide its customers with the best service and highest quality water possible.

-Chris Summerlin, SGWASA Assistant Executive Director

How Unidirectional Flushing Works



PROJECT OVERVIEW:

MASTER PLANNING + INFRASTRUCTURE ASSESSMENT

PROJECT PARTNER: MCGILL ASSOCIATES

Long-range planning depends on knowing what assets exist, what condition they are in, and where future investment is most important. SGWASA's planning work is intended to strengthen asset management, capital planning, and infrastructure decision-making across both water and wastewater systems.

Solution: SGWASA partnered with McGill Associates on the Water Treatment Master Plan, along with separate completed water and wastewater infrastructure assessments.

These actions support long term system planning, including asset inventories, condition assessment of critical infrastructure, asset management planning, hydraulic modeling, and Capital Improvement Plan support.



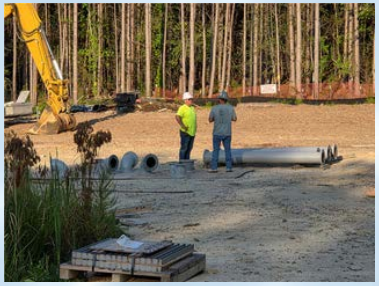




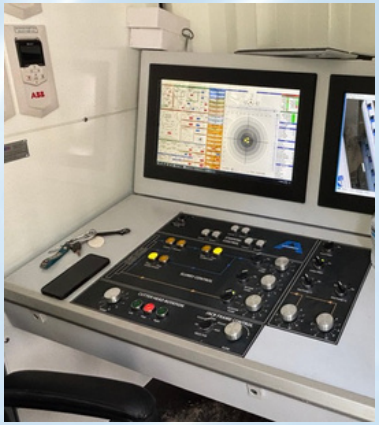


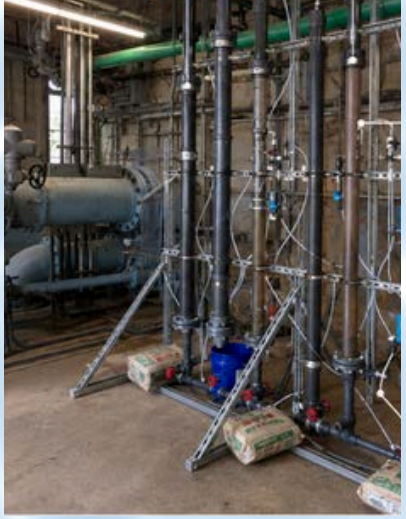


















FUNDING + PROGRESS

The Water Treatment Master Plan is supported by a $150,000 NCDEQ grant with a $30,000 SGWASA match. A separate $150,000 Water Distribution System Asset Inventory and Assessment grant was funded through ARPA resources with no local match required. The Wastewater Infrastructure Assessment received a $200,000 AIA grant, also funded through state ARPA resources with no local match required.

Next steps: The completed infrastructure assessments and ongoing master-planning work will inform asset management, capital planning, future project prioritization, and infrastructure investment decisions.

For the Water Treatment Master Plan, condition evaluation and master planning continue through completion of the planning process.



Impact of the Water Quality + Infrastructure Project Suite

Lasting improvements come from strengthening the system as a whole, not from a single project or treatment process. The upgrade initiatives in motion work across treatment, distribution, wastewater, engineering, and sustainable planning to address different points of the utility system.

PFAS mitigation strengthens the treatment barrier; filter media improvements strengthen treatment performance and filtration reliability; unidirectional flushing improves distribution system water quality; master planning helps identify and address infrastructure risks before they become larger problems; and the I-85 SSI Project expands and fortifies wastewater capacity and reliability.

The combined impact of SGWASA's water quality and wastewater initiatives is a more resilient utility system that is better positioned to protect water quality, maintain dependable service, respond to regulatory requirements, support needed capacity, protect the environment, manage aging infrastructure, and support reliable water and wastewater service across Southern Granville County.



PFAS Mitigation

Advanced treatment and long-term regulatory readiness

Filter Media Program

Stronger filtration performance and treatment reliability

Unidirectional Flushing Program

Improved distribution-system water quality maintenance

Master Planning + Infrastructure Assessment

Asset planning, resilience, and future investment guidance

I-85 SSI Project

Wastewater capacity, system reliability, and environmental protection



Water Quality & Sustainability

COLLECTIVE IMPACT: A STRONGER, MORE RESILIENT SYSTEM

- Treatment Performance
- Distribution Water Quality
- Regulatory Readiness
- Infrastructure Resilience
- Environmental Stewardship
- Long-Term Sustainability

SGWASA CUSTOMER

FAQ

View more commonly asked FAQs at sgwasa.org

1. **Why is SGWASA advancing several infrastructure and water-quality projects at the same time?**

The projects address different parts of the utility system, from source water treatment and distribution to wastewater capacity, asset condition, metering, and regulatory compliance. This proactive approach addresses water quality, infrastructure, and evolving service needs.



2. **What is SGWASA doing about PFAS in the drinking-water supply?**

SGWASA is designing a permanent Advanced Water Treatment facility in response to PFAS detected in its source water and new federal drinking water standards.

The 100% design milestone is scheduled for delivery in November 2026. Pilot testing and supporting corrosion control work are also being used to inform implementation of the treatment strategy.





3. Why does utility master planning matter for customers?

Master planning gives SGWASA a structured understanding of the condition and future needs of critical infrastructure.

4. How is SGWASA identifying aging infrastructure before it fails?

SGWASA has completed water and wastewater Asset Inventory and Assessment projects that examine system assets, condition, hydraulic performance, and long-term infrastructure needs.

The water assessment includes system inventory updates, hydraulic modeling, a water audit, asset-management planning, and capital-improvement planning; the wastewater assessment similarly supports condition assessment and long-term asset management.



5. **Why is it important to replace old water meters?**

Replacing older meters modernizes an important part of the distribution system and is intended to improve meter performance and accuracy.



6. **How is SGWASA working to manage the cost of these improvements for customers?**

SGWASA is actively pursuing grants, principal-forgiveness funding, state appropriations, settlement proceeds, and other outside funding sources to reduce the amount that must be supported through customer revenues.

These efforts are intended to lessen the long-term financial impact while allowing critical water quality and infrastructure improvements to move forward.



Providing quality water and sanitary sewer services to our customers in an efficient, sustainable, and environmentally conscious manner.

sgwasa.org