Brown AND Caldwell

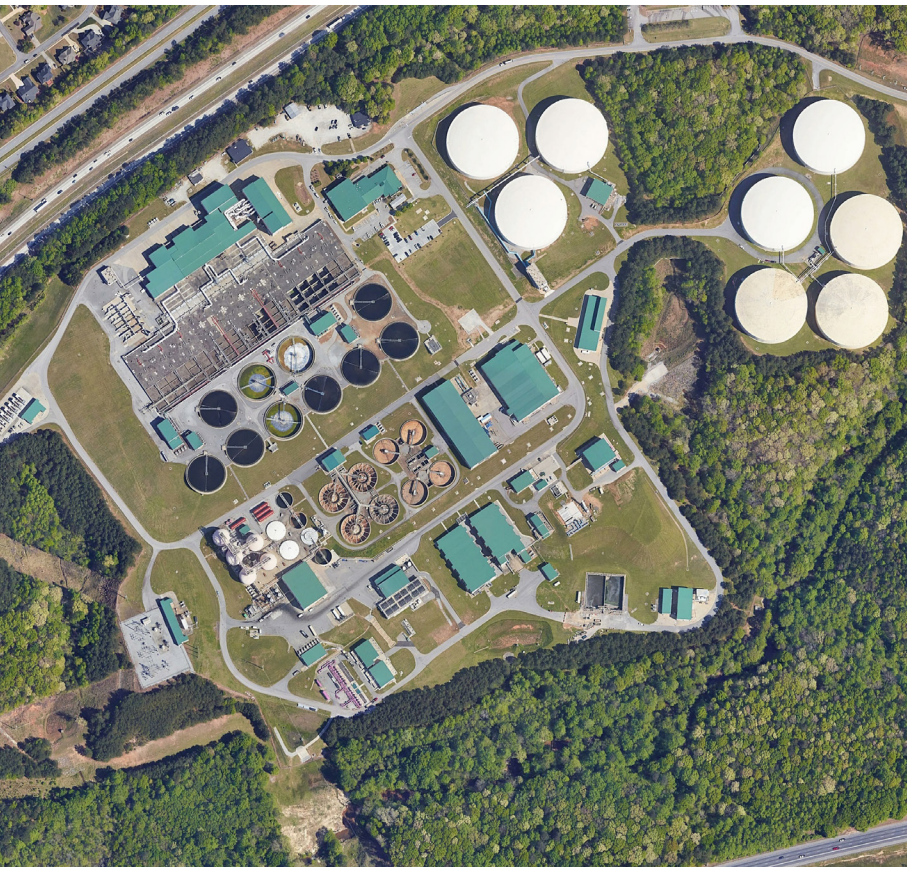
Engineering Design and Support during Preconstruction and Construction of the

F. Wayne Hill Water Resources Center Biosolids Dryer Project

Gwinnett

STEP 1 - PROPOSAL

April 20, 2023 // RFP# RP003-23



Right Facility

Return on Investment

Reliable Delivery

990 Hammond Drive, Suite 400
Atlanta, GA 30328
T: 770.394.2997
www.brownandcaldwell.com

April 20, 2023

Brittany Bryant, Purchasing Associate II
Gwinnett County
Financial Services – Purchasing Division
2nd Floor, 75 Langley Drive
Lawrenceville, Georgia 30046

Engineering Design and Support during Preconstruction and Construction of the F. Wayne Hill Water Resources Center Biosolids Dryer Project

STEP 1 PROPOSAL – RP003-23

Dear Ms. Bryant,

Brown and Caldwell (BC) understands that GCDWR is committed to maintaining outstanding service, financial vitality, and environmental sustainability for Gwinnett County and its vibrant communities. Twenty years after beginning operations, FWH WRC remains one of the most advanced facilities of its kind on the East Coast.

BC and our teammates are ready to partner with the county and your CMAR contractor and Owner's Agent (OA) to deliver a biosolids dryer facility that will maintain the county's commitment and continue its operational legacy. Featuring Wade Trim (WT) as our major subconsultant, as well as local DBE and specialty subconsultants, **the BC team provides the experience, local resources, and accountability to help you deliver a successful project.**

Right Facility. The project will require confirming the optimal site and sizing for the facility and tailoring it to FWH WRC. Understanding site conditions and collaborating with dryer technology providers and county plant staff will be vital to achieve your goals and provide reliability, ease of operations, and safety for your personnel.

Our dryer specialists provide lessons learned to help GCDWR build the right facility. We work daily designing rotary drum dryers, coordinating with their manufacturers, and helping utilities to tailor their design and operation. We will deliver a project that meets your needs and provides flexibility for the future.

Return on Investment. The facility must be cost-effective and deliver a high value over its lifecycle. Beyond reducing landfill costs, the county has the potential to generate revenue from a Class A product. Additionally, the project should promote the use of biogas and reduce reliance on natural gas, as well as provide flexibility for potential future needs (e.g., PFAS regulations).

The BC team offers specialists in CMAR, biosolids, biogas, and emerging areas like PFAS. Our Atlanta office is a leader in design-build delivery. We have teamed to deliver projects and have relationships with the major construction contractors in the region and will work in a collaborative manner with the CMAR from day one. We have helped clients to reduce costs through alternative delivery, maximize biogas utilization, and promote adaptability for the future.

If desired, we offer value-added options to further advance your ROI:

- A Blue Ribbon Panel of utility owners could share their lessons learned with similar dryers and biosolids programs to benefit the county.
- BC could help develop the framework to market and distribute the Class A biosolids product using inhouse specialists or third-party consultants.

Reliable Delivery. The county must develop the project to meet available funding; deliver it on time and on budget while mitigating supply chain risk and complying with a federal grant and state loan; and avoid unnecessary impacts to FWH WRC operations. Close collaboration with GCDWR and its CMAR and OA will be essential to meet these requirements and deliver an optimal project.

The BC team offers leadership who deliver for GCDWR and local collaboration at The Water Tower. Project Manager Scott Adams is a Gwinnett resident who has managed dozens of projects in serving GCDWR for 29 years, including high quality alternative delivery contracts. Lead Design Engineer George Dick and WT Principal Chris Haney contributed to the recent FWH WRC Biosolids Master Plan and CHP projects. BC has recently worked with each of our subconsultants, including multiple projects for Gwinnett.

BC and all but one of our partners are based in Gwinnett or the Atlanta metro area. BC and WT have offices at The Water Tower, adjacent to FWH WRC. We are ready to facilitate onsite collaboration with you, your CMAR, and your OA to deliver outstanding results.

We appreciate the trust that Gwinnett County has placed in our local staff over the years to deliver more than 200 projects for GCDWR.

We are committed to:

- **Uphold** and promote the Gwinnett Standard of excellence in all that we do
- **Utilize** and make available all key staff resources identified in our proposal, including the Project Manager and all other Key Team Leaders
- **Complete** all tasks within the project schedule

BC reviewed the Agreement, can meet all insurance and other requirements, and will sign the Agreement if selected.

Very truly yours,

Brown and Caldwell

Correggio Peagler, Sr.
Principal-in-Charge
(Authorized Company Officer)

Scott Adams, P.E., DBIA
Project Manager

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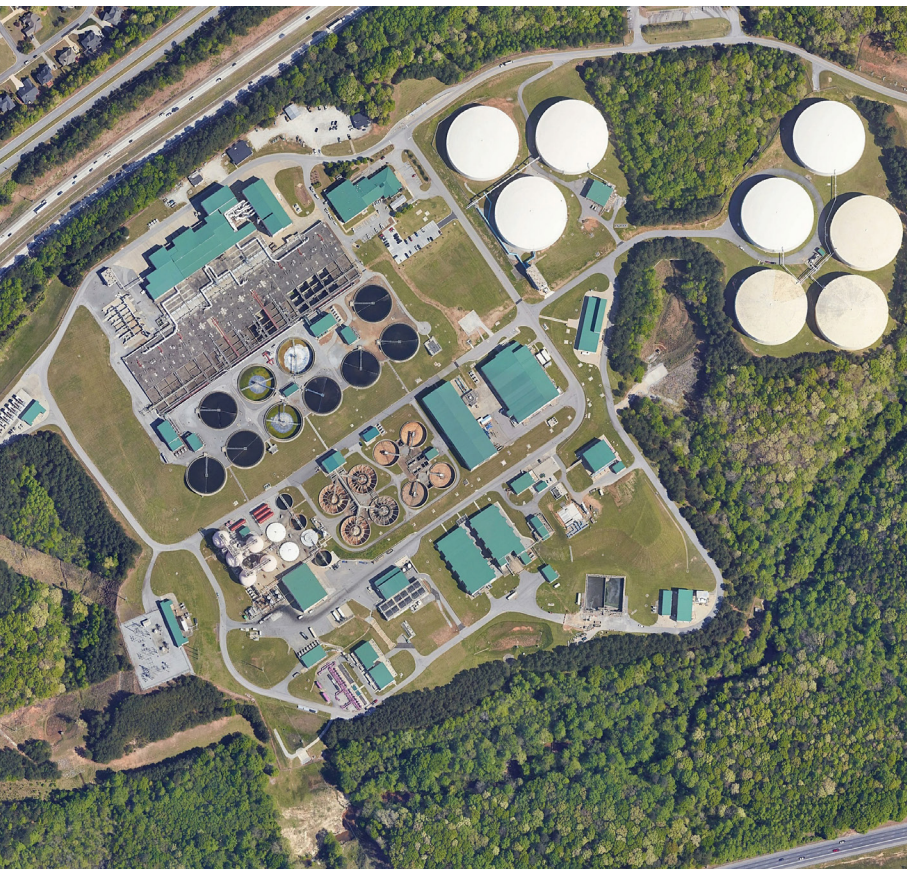
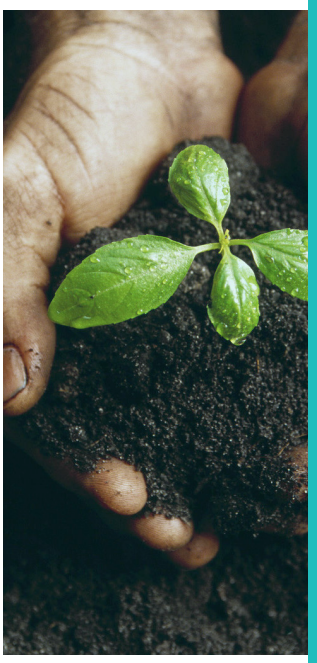
Prime Consultant Identification

TAB A





Brown AND Caldwell

Tab A: **Prime Consultant Identification**

BC is among the largest A/E firms focused on the country's environmental needs.

Brown and Caldwell

Engineering News-Record (ENR) has ranked BC among the top ten wastewater treatment design firms for 15 years. Our services include solids, energy, and compliance. BC offers over 1,900 staff in North America, including nearly 100 in Gwinnett and Atlanta.

Providing alternative delivery since 1993, our staff have served as president of the Water Design-Build Council and on the National Board of Directors of the Design-Build Institute of America (DBIA).

BC works with clients to share lessons learned that help them succeed. Partnering with GCDWR and its CMAR and OA, our team will deliver a dryer that achieves your operational and financial goals.

#3
Wastewater treatment plant design firm, *ENR*

350+
Treatment plant design projects

170+
Alternative delivery projects

BC'S RECENT WWTP PROJECTS IN THE EASTERN U.S. HAVE EARNED:

- DBIA National Award and Honor Award
- AAEE Excellence in Engineering Grand Award
- ACEC National Recognition Award
- IWA Global Honour (Planning), Superior Achievement, and Project Innovation Awards
- AAEES Excellence in Environmental Engineering Grand Prize for Research
- WERF Award in Excellence for Innovation
- ENR Best of the Best Award
- IEC Excellence in Construction Award
- WEF Fuhrman Medal (Research)
- ACED National Honor Award

PRINCIPAL OFFICES (STAFF)
990 Hammond Dr, Ste 400
Atlanta, GA 30328 (95)

2500 Clean Water Ct
Buford, GA 30519 (1)
POC: Scott Adams
770.673.3637
shadams@brwncald.com

SUPPORT OFFICES (STAFF)
220 Athens Wy, Ste 500
Nashville, TN 37228 (104)

2301 Lucien Wy, Ste 250
Maitland, FL 32751 (33)

5405 Cypress Center Dr
Ste 250, Tampa, FL 33609 (27)

223 S West St, Ste 900
Raleigh, NC 27603 (43)

200 Brickstone Sq, Ste 403
Andover, MA 01810 (63)

100 W Big Beaver Rd, Ste 540
Troy, MI 48084 (27)

370 Wabasha St N, Ste 500
Saint Paul, MN 55102 (45)

1527 Cole Blvd, Ste 300
Lakewood, CO 80401 (199)

2 N Central Ave, Ste 1600
Phoenix, AZ 85004 (89)

LEGAL NAME
Brown and Caldwell, Inc.

OWNERSHIP & HISTORY
Private, 100% employee-owned, incorporated in 1958

ACQUISITIONS & MERGERS
None

AFFILIATES & SUBSIDIARIES
Brown and Caldwell LLC
Brown and Caldwell Constructors
Brown and Caldwell Ohio, LLC
Brown and Caldwell Consultants Canada Ltd.
Eckenfelder Engineering P.C.

For 76 years, BC has been nationally recognized for pioneering financially and environmentally sustainable wastewater solutions.

Rotary Drum Dryer, MWS Nashville, TN

Advancing Biosolids Management

Reliability today with flexibility for the future is essential in biosolids. More stringent regulations (potentially including PFAS), increasing landfill costs, growing waste streams, and the imperatives related to reducing carbon footprints are making dependable, affordable treatment and management essential. We provide a full range of biosolids expertise to support the county in developing its program, from planning and design through construction, operations, and marketing.

BC has pioneered many of the biosolids technologies in use and been at the forefront of the industry's greater focus in the past 25 years on Class A biosolids and co-digestion of biosolids and organic waste. We are a thermal processing industry leader performing innovative research on the fate of PFAS and energy efficiency for thermal processes for the Water Research Foundation and Water Environment Federation.

Leading Dryer Experience

BC offers Gwinnett County comprehensive capabilities and industry leading experience in the study, design, construction, and operation of biosolids dryer facilities. We have completed over 60 dryer projects and designed every type of dryer for municipal biosolids, including rotary drum, low temperature belt, rotary auger, and paddle. Our staff has recent experience and lessons learned with Andritz, Baker-Rullman, and Berlie Falco, the manufacturers and vendors of integrated rotary drum dryers, which GCDWR has selected for the FWH WRC and proposed biosolids program.

BC is one of the few select firms—if not the only firm—that has designed every type of dryer for municipal biosolids, including the integrated rotary drum dryer GCDWR selected.

Maximizing Biogas Utilization

BC has experience with all major methods for achieving energy neutrality, including on-site power generation, large-scale energy reduction, co-digestion, and biogas utilization. We have been a pioneer in using biogas since the 1950s, when we developed the first biogas cogeneration engines in the wastewater treatment industry. In the 2000s, BC was the first in the industry to use high-efficiency cogeneration engines.

The biogas calibration process can require in-field verification of data such as collecting solids quantities in and out of digestion to crosscheck biogas quantities obtained by flow meters. BC can perform digester gas characterization testing in-house to determine the quality of biogas and anticipated treatment requirements.

Nearly 50 Years of Local Roots

In 1977 BC opened our first office in the Eastern U.S. in Atlanta. Today, this office is one of our core design centers, with more than 100 staff. Our project team is based and led in our Atlanta office and includes our Principal, QA/QC Manager and CMAR Liaison, and many engineering staff.

Personal Commitment to Gwinnett County

BC has worked with GCDWR since the early 1990s. We opened our Gwinnett County suite in 2018 and moved to The Water Tower in 2022, where our Project Manager is based. We have delivered a range of projects at FWH WRC in recent years, from a biosolids incineration study to electrical safety improvements to instrumentation and controls (I&C) upgrades. We look forward to working with you again to advance FWH WRC's legacy as a model of innovation.

BC has many employees who make their home in Gwinnett. As a company and citizens, we actively participate in and contribute to the county, from wetlands cleanups to high school STEM career events. In March, BC sponsored Gwinnett's State of the County address on serving with intention.

Proven Teamwork with Our Partners

BC and major subconsultant Wade Trim (WT) serve large clients together such as NYCDEP (New York City), GLWA (Detroit metro), and NEORSD (Cleveland metro). WT is currently a third-party CM for BC's Big Creek WRF expansion in Fulton County. On this progressive design-build (PDB) project, we are helping the county to reduce project costs and operational impacts.

BC currently works with each of our partners, including at FWH WRC.

Strengthening our team is Corporate Environmental Risk Management (DBE), Dustcon Solutions, S. L. King (DBE), and Wendel Architecture. BC has worked with each firm for GCDWR or other clients, including at FWH WRC.

BC and our subconsultants have formed a good-fit team that draws on each firm's expertise and resources to best serve your project. With local staff, complementary skills, and proven teamwork, we will be an outstanding partner to GCDWR.

BC recently sponsored Gwinnett's State of the County address. Project Manager Scott Adams (pictured right, with other BC staff) shares the Board of Commissioners Chairwoman's operating philosophy of serving with intention.

BC's subconsultants and our teamwork are highlighted immediately below. As prime, BC will perform all services not listed, and we will manage and provide construction services in coordination with our partners.

Subconsultant, Role (DBE Status / Location)	Teamwork with BC (Role)
Corporate Environmental Risk Management Surveying, Geotechnical, Construction Services (DBE / Tucker, GA)	1 project, the current FWH WRC RAS Pump Evaluation, Gwinnett, GA (sub for surveying)
Dustcon Solutions, Inc. Dust Safety (West Palm Beach, FL)	3 projects including current Biosolids Dryer Design, Auburn, NY (sub for dust safety)
S. L. King & Associates, Inc. Electrical (DBE / Atlanta, GA)	11 projects including current Big Creek WRF Expansion (alternative delivery), Fulton, GA (sub for electrical)
Wade Trim, Inc. Sludge Conveyance, Structural, Civil, Site Permitting, Construction Services (Buford, GA)	21 projects including current Big Creek WRF Expansion (alternative delivery), Fulton, GA (third-party CM working with BC)
Wendel Architecture, PC Architecture, Building Mechanical (Atlanta, GA)	6 projects including current Shoal Creek Filter Plant Chemical Design, Gwinnett, GA (sub for architecture and bldg. mechanical)

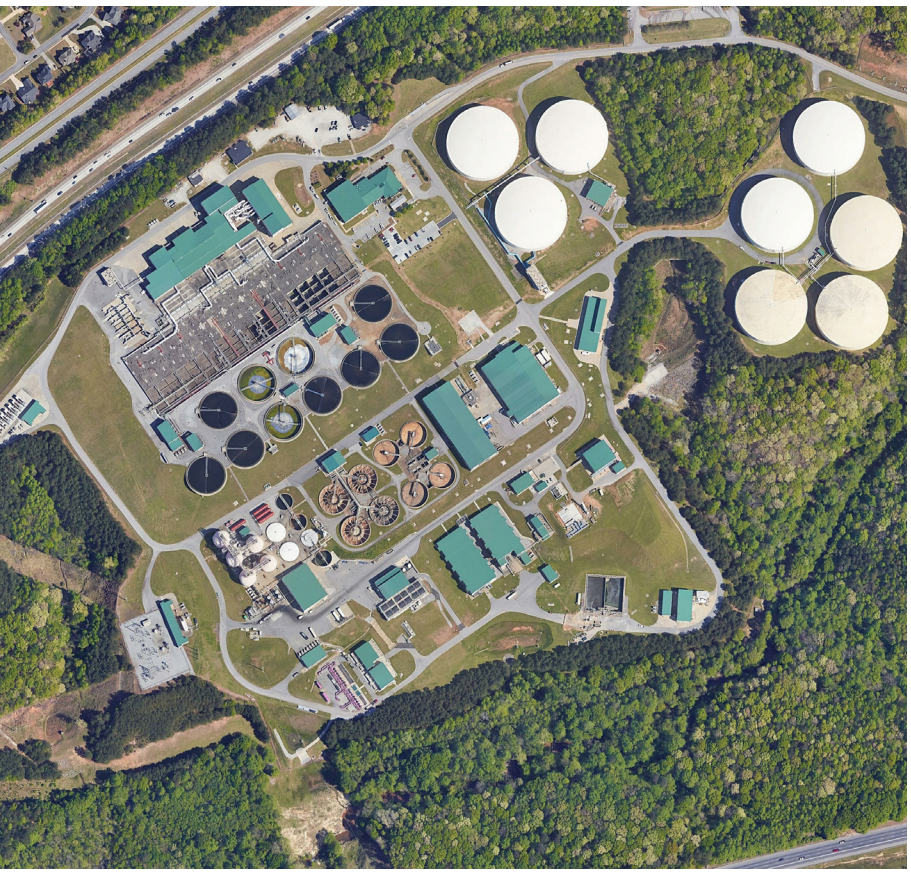
Employee assignments and locations are provided below, as well as in Tab E (organizational chart and staff tables) and Tab F (resumes). As detailed, our team will be managed in Gwinnett County and largely supported by staff in the Atlanta metro area, with additional support from contributing team offices.

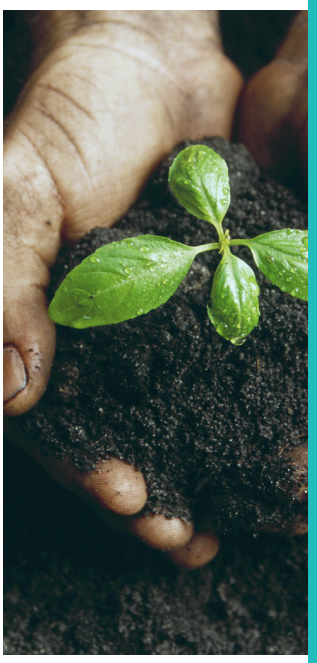
Employees Assigned (Residence Location / and Office Location if Different)

Scott Adams *(Gwinnett)*
Correggio Peagler, Sr. *(Atlanta / Lithonia, GA)*
Chris Haney *(Gwinnett / Alpharetta, GA)*
George Dick *(Tampa)*
Ken Schnaars *(Nashville)*
Tim Masterson *(Atlanta / Atlanta metro)*
Ken Hoff *(Orlando / Winter Park, FL)*
John Ross *(Detroit / Ann Arbor, MI)*
Ted Hull *(Atlanta)*
Gary Emmel *(Gwinnett / Peachtree City, GA)*
Jeff Reynhout *(Detroit)*
Jason Wiser *(Phoenix)*
Nancy Andrews *(Saint Paul / Minneapolis-St Paul)*
Raymond Johnson II *(Williamsville, NY / Buffalo)*
Floyd Keels *(Atlanta)*
Waine Pittman *(Atlanta / Villa Rica, GA)*
John Diedrich *(Atlanta)*
Brian Williams *(Atlanta)*
Brian Gombos *(Detroit)*
Jim White *(Detroit)*
Roberta Unger *(Atlanta / Atlanta metro)*
Shen Zhou *(Gwinnett / Marietta, GA)*
Steve Bupp *(Gwinnett / Roswell, GA)*
Thomas Tye *(Atlanta)*
Erick Smith *(Atlanta / McDonough, GA)*
Robert Taylor *(Nashville / Nashville metro)*
Tim Henecks *(West Palm Beach, FL)*
Dave McEwen *(Raleigh)*
Paul Pepler *(Boston / Auburn, NH)*
Sam Atere-Roberts *(Atlanta / Atlanta metro)*
James Cook *(Atlanta)*
Akimza Gunn *(Atlanta / Ellenwood, GA)*
Richard Brown *(Atlanta / Austell, GA)*
Herve Yondo *(Gwinnett / Norcross, GA)*
William Agster *(Denver)*

Major Subconsultant Identification

TAB B





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Tab B: **Major Subconsultant Identification**

WT solves complex wastewater issues with committed service to clients like GCDWR.

Wade Trim

An employee-owned engineering firm, WT has been serving governmental clients since 1926. Today, they have 600 employees across offices in nine states. Their growth has occurred primarily through geographic expansion in the water and wastewater markets with a focus on consistent project delivery for large and small clients. WT is predominantly a water firm whose core services include wastewater treatment and biosolids management.

Wade Trim opened an Atlanta office in 2018 to grow operations in the metro area. This office relocated to the Water Tower in 2022 to serve Gwinnett County and build a hub for southeast operations.

WT's philosophy can be summarized in three statements:

- Use a collaborative design process that focuses on operator-friendly features, practicality, and innovation
- Embrace technology to improve efficiencies and decision-making in everything they do for our clients
- Build long-term client relationships and function as an extension of the client's staff

WT specializes in water and wastewater planning, design, and construction management services. Their staff includes civil, electrical, instrumentation and control, modeling, structural, and process/mechanical system design to support any treatment facility project. As a major consultant for this contract, WT will support design in close coordination with BC and other team partners.

Wastewater Leadership

WT built a solid reputation solving complex wastewater issues and addressing regulatory challenges. The firm has delivered over $5B in completed projects for planning, design, regulatory compliance, construction, startup and commissioning assignments for water and wastewater treatment facilities and pumping stations.

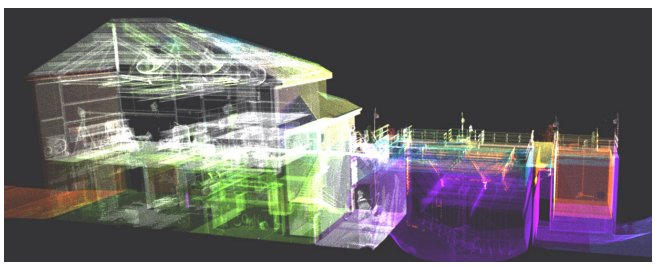
VALUE TO GWINNETT
WT team members have similar recent experience that will help to streamline the budget and schedule for this project. They also offer staff with established working relationships with BC and GCDWR.

FULL LEGAL NAME
Wade Trim, Inc.

PRINCIPAL/LOCAL OFFICE
The Water Tower, 2500 Clean Water Court, 3rd Floor, Buford, GA 30519

SUPPORT OFFICE/ HEADQUARTERS
500 Griswold St #2500, Detroit, MI 48226

PROJECT ROLE (SERVICES TO BE PROVIDED)
Sludge Conveyance, Structural, Civil, Site Permitting, Construction Services



WT is leading the upgrade to GCDWR's Lanier Filter Plant using reality capture technology. This provides sub-centimeter accuracy, improving the quality of the data, accelerating the work, and making staff safer in the field.

WT honed its expertise through decades of work at the 1.7 bgd Water Resource Recovery Facility (WRRF) currently operated by the Great Lakes Water Authority (GLWA). The firm has supported over $1B in completed projects at this plant, the largest single-site wastewater treatment facility in the world. This work includes the $424-million, 8-year at-risk contract for implementing systematic renewal and replacement projects across the entire facility; the $135-million Biosolids Dryer Facility; and an overhaul to the main 1.4 bgd and 800 mgd influent pump stations. The firm also led an 8-year program to upgrade twelve 90 mgd primary clarifiers at the WRRF.

1.7 bgd GLWA WRRF Improvements

Alternative Delivery Expertise

WT has delivered a range of water and wastewater projects serving as the owner's advisor, lead designer, or at-risk partner with construction contractors for DB, progressive DB, and CMAR projects. This includes Third-Party CM Services in conjunction with BC on the $300M PDB project for Fulton County to upgrade the WWTP to membrane bioreactor (MBR) technology and expand capacity to 32 mgd, making it one of the largest MBR facilities in North America. WT and individuals on our team are providing third-party CM services over the 5-year construction period with completion expected in 2024.

Big Creek WRF Expansion PDB, Fulton County, GA (in coordination with BC and SLK)

WT has completed over $2.3B in alternative delivery in the past 15 years.

Team Members' Facility Knowledge Will Benefit GCDWR

50 Total GCDWR Projects

- 2 Water Pump Storage Facilities
- 11 Wastewater Pump Stations
- 2 Raw Water Pump Stations

ADDITIONAL METRO ATLANTA EXPERIENCE

- City of Atlanta DWM
- RM Clayton WRC
- South River WRC
- Utoy Creek WRC
- Intrenchment Creek WRC
- Hemphill WTP
- Chattahoochee WTP
- 8 CSO facilities
- 2 additional pump stations

FULTON COUNTY

- Big Creek WRF
- Ono Road Pump Station
- 8 additional pump stations

DEKALB COUNTY

- Scott Candler WTP
- 12 additional pump stations

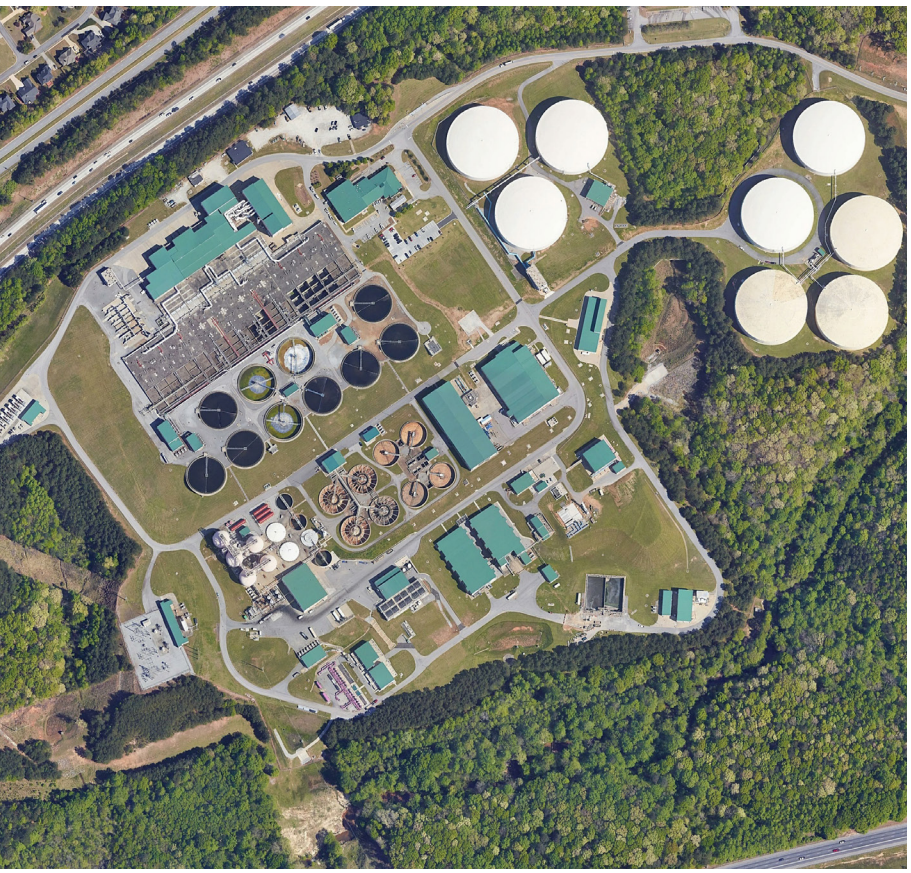
TEAM MEMBERS

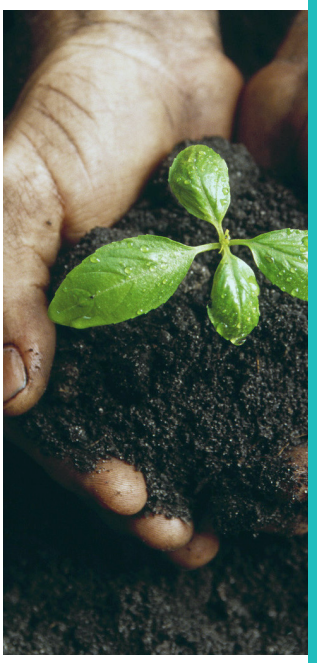
Chris Haney
Gary Emmel
Steve Bupp
Herve Yondo

F. Wayne Hill WRC 17 projects
Lanier Filter Plant 11 projects
Crooked Creek WRF 2 projects
Shoal Creek Filter Plant 5 projects

Minor Subconsultant Identification

TAB C





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Tab C: **Minor Subconsultant Identification**

Proven with GCDWR and BC, our minor subconsultants bring critical insight and established teamwork that will benefit your project.

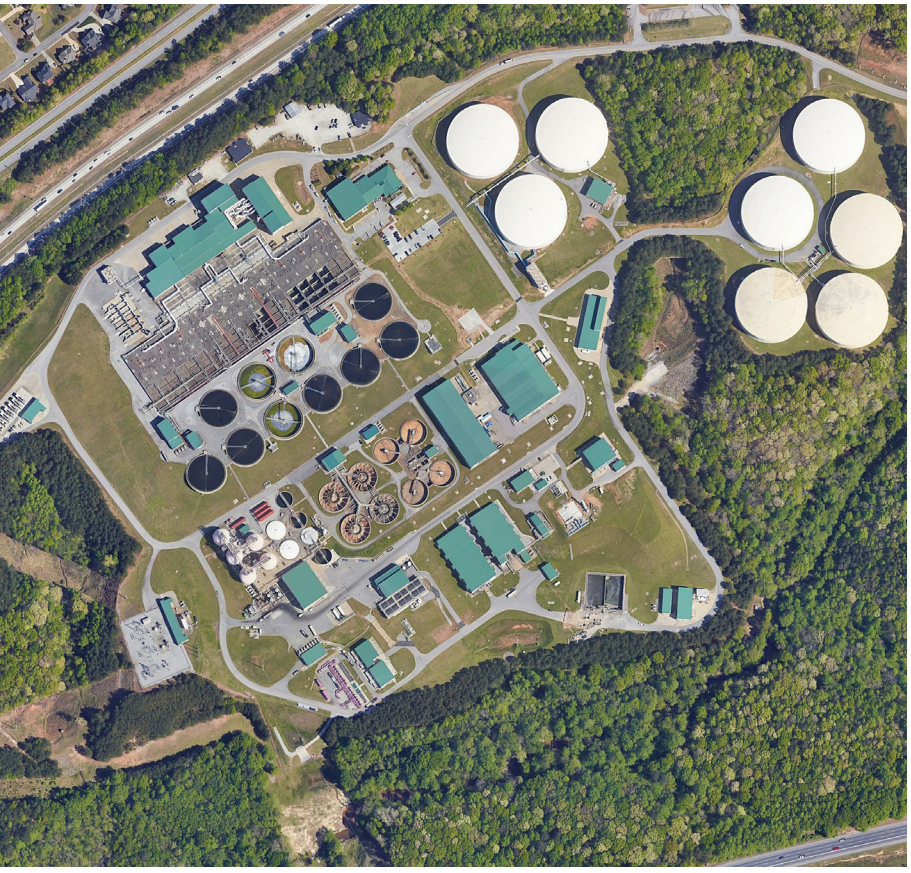
BC's partners add expertise and resources to our team. Most have worked with GCDWR and BC, bringing knowledge of FWH WRC and established teamwork to foster successful project delivery. All but one are in the metro area to provide responsive and locally aware service.

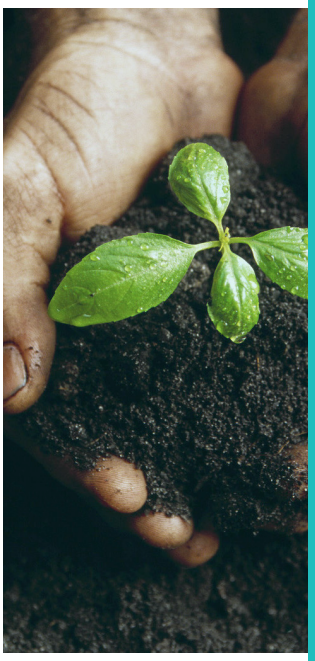
Our work plan will provide meaningful roles for our two DBE partners to help them grow and support Gwinnett's contracting goals. BC values the strengths these businesses bring to benefit our clients.

Subconsultant		Past Teamwork and Benefit to GCDWR
LEGAL NAME	Corporate Environmental Risk Management (CERM)	BC and CERM are performing the FWH WRC RAS Pump Evaluation for GCDWR (CERM is BC's sub for surveying). CERM's familiarity with the site and teamwork with GCDWR and BC will allow them to work efficiently on this project. CERM is an award-winning MBE whose **COO serves on the Water Tower Institute Board**. The firm's engineering and environmental staff of more than 130 includes 23 employees who live in Gwinnett.
ROLE	Surveying, Geotechnical, Construction Services	
PRINCIPAL AND/OR SUPPORT OFFICE	1990 Lakeside Pkwy, Ste 300, Tucker, GA 30084 **Registered DBE**	
LEGAL NAME	Dustcon Solutions, Inc. (DSI)	DSI has supported dust safety as sub to BC on three recent projects, including our Biosolids Dryer Design for Auburn, NY (see Tab D) and our drum dryer commissioning, startup, and operations support to Metro Water Services, Nashville, TN. The firm's staff has 25 years of involvement with the National Fire Protection Association on standards pertinent to dust safety. DSI's expertise will help GCDWR to maintain safe operations at the new facility.
ROLE	Dust Safety	
PRINCIPAL AND/OR SUPPORT OFFICE	PO Box 33207 West Palm Beach, FL 33420	
LEGAL NAME	S. L. King & Associates, Inc. (SLK)	BC and SLK have performed 11 projects including the current Big Creek WRF Expansion (alternative delivery) for Fulton, GA (SLK is BC's sub for electrical). SLK has also performed electrical design and testing at FWH WRC. Their experience at FWH WRC and with BC will be key to powering the dryer. Since its founding in 1996, SLK has been a premier provider of electrical and other engineering to clients including GCDWR and GDOT. The firm has over 45 local personnel.
ROLE	Electrical	
PRINCIPAL AND/OR SUPPORT OFFICE	1100 Abernathy Rd NE, Bldg 500, Ste 925, Atlanta, GA 30328 **Registered DBE**	
LEGAL NAME	Wendel Architecture, PC (WA)	WA and BC have performed three recent projects together for GCDWR, including our Shoal Creek Filter Plant Chemical Design (WA is BC's sub for architecture and building mechanical). WA's knowledge of Gwinnett and work in similar roles with BC will benefit the design in integrating the new dryer into the WRC campus. WA offers a staff of 280, with an Atlanta office (formerly The Architecture Group) serving local clients since 1996.
ROLE	Architecture, Building Mechanical	
PRINCIPAL AND/OR SUPPORT OFFICE	381 Venable Street NW Atlanta, GA 30313	

Experience of Prime Consultant

TAB D





Brown AND Caldwell

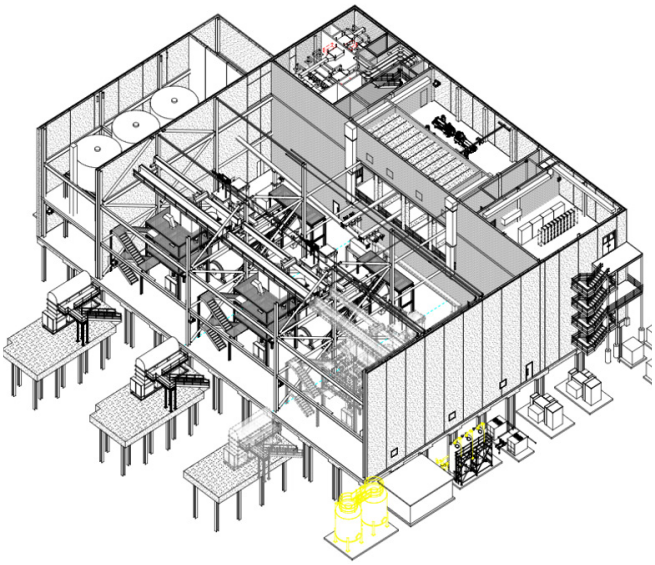
Tab D: **Experience of Prime Consultant**

BC has delivered more than 60 thermal drying projects. Drawing on lessons learned with integrated rotary drum dryers, biogas systems, and Class A biosolids management, we will achieve your project goals.

A sample of our team's relevant dryer and related experience is highlighted below. Five projects meeting RFP requirements are presented on the following pages.

	BC and WT Key Relevant Experience // ● Alternative Delivery	Thermal drying	Anaerobic digestion	Financial modeling / business case eval.	Biosolids market analysis	Class A distribution planning	FOG and/or food waste	Biogas combined heat and power	Biogas upgrade and pipeline injection
Featured	Dry Creek WRF Dryer and Headworks, MWS, Nashville, TN	●		●	●			●	●
Featured	Biosolids Dryer Facility DBOM, GLWA, MI (WT)	●		●	●	●			
Featured	Biosolids Dryer and STP Improvements, Auburn, NY	●	●	●		●	●		
Featured	Regional Biosolids Drying Facility, Metro Vancouver, B.C.	●		●				●	●
	Sludge Dryer Feasibility Study, Keene, NH	●	●	●	●	●	●		
	Dryer Feasibility Report, Lewiston-Auburn WPC Auth., ME	●	●	●	●		●	●	●
	WW Master Plan and Digester Upg., East Bay MUD, CA	●	●	●	●	●	●	●	●
	Bio-Energy and Thermal Drying DB, Montpelier, VT	●	●	●			●	●	
	Biosolids Facility PDB, Downriver UWW Authority, MI (WT)	●				●			
	Biosolids Master Planning, Portland W Dist., Portland, ME	●	●	●	●	●	●		
	Biosolids and Yard Waste Energy CMAR, St. Petersburg, FL	●	●	●		●	●		●
	Biosolids Master Plan, NH Dept. of Environ. Services, NH	●	●	●	●		●		
	Chambers Creek WWTP Dryer Facility, Pierce County, WA	●	●	●	●	●		●	
	Regional Biosolids Facility, Springfield W&S Comm., MA	●	●	●	●	●	●		
	Biosolids Master Plan, Orange County Sanitation Dist., CA	●	●	●	●	●	●		
	Food Waste and Biosolids Mgmt., MWRA, MA	●	●			●	●	●	
	Biosolids, Energy, and Emissions Plan, Encina WWA, CA	●	●	●	●	●	●	●	●
	Biosolids and Energy Enhancements, Derry TMA, PA	●	●	●	●	●	●	●	●
	Biosolids Program and CIP Update, Lynchburg, VA	●	●	●	●	●			
	Blue Plains AWWTP Biosolids Pgm. Mgt, DC Water, D.C.		●	●	●	●		●	
	Biosolids Tech. Evaluation, Metro BC, San Diego, CA	●	●	●	●	●	●	●	●
	Biosolids and Odor Master Plan, MSDG Cincinnati, OH		●	●	●		●	●	●
	Biosolids Study and Biomethane Reuse, King County, WA	●	●	●		●	●		●
	Cogeneration and Biosolids Evaluation, Eureka, CA	●	●	●	●			●	●

BC has served Metro Water Services' biosolids and dryer needs for 20 years. We are currently designing a new dryer to provide a Class A biosolids product and utilize biogas.



Dry Creek WRF Dryer and Headworks

Metro Water Services, Nashville, Tennessee

63 mgd
WRF

$39.5M
Construction

BC has served Metro Water Services (MWS) for 20 years in support of biosolids management, providing planning, design, construction, progressive design-build (PDB) owner advisor, and emergency flood recovery services at the Central and Dry Creek WRFs. The following project details our dryer and headworks design work at Dry Creek.

The current Dry Creek WRF biosolids facility produces a Class B product that is stabilized in anaerobic digesters, dewatered, and then hauled to a landfill for disposal. The landfill is nearing capacity and MWS will soon need to haul their solids a greater distance, resulting in significantly higher costs.

Dry Creek WRF requires a sustainable biosolids solution that reduces the overall volume of biosolids produced and delivers a product that offers a diverse range of disposal options. BC is designing an estimated $39.5 million construction project (design-bid-build) that will achieve these goals and provide the following improvements and upgrades at Dry Creek:

- A new rotary drum dryer facility that produces Class A biosolids
- A new headworks facility with perforated plate screens and grit removal
- Odor control improvements for the dryer and headworks facilities
- A complete update to the WWTP O&M manual will be provided

Site Feasibility for Existing Operations. Dry Creek WRF has tight site constrains for siting the new dryer facility. BC identified an optimal location just west of the existing anaerobic digesters. This site reduces plant interruptions and consolidates the dewatering and drying processes together.

Dryer Sizing. BC sized the dryer based on a 20-year service life scenario, incorporating a custom capacity derating to account for typical wear observed at MWS' existing dryers at the Central WRF. To enable the plant to operate without interruptions, the dryer building is designed with a partially redundant dryer train and cake bypass system so that sludge cake can be directly loaded into trucks if the dryer is removed from service due to maintenance or repairs. The new dryer facility includes pellet storage and other support systems.

BC's Role in Project
Prime, Lead Engineer

Project Value
Fee (Initial): $8.4 million
Fee (Final): $10.1 million (owner scope change/ add'l. needs, BC is on budget)

Project Dates
Start: October, 2021
Completion (Initial): January, 2024 (design)
Completion (Final): May, 2024 (est. design) (owner scope change/add'l. needs, BC is on schedule)

Reference
Ron Taylor, Project Manager, MWS
615.915.0384
ron.taylor@nashville.org

BC Key Staff, Role
G. Dick, Design Egr.
K. Schnaars, Dryer SME
J. Ross, Dryer Design
N. Andrews, Energy SME
W. Agster, Cost & Sche.

Key Subconsultants, Role
Black Dog, Grit Support
Cornerstone, Structural
Tegrah, Proc-Mech Asst.
Water Mgmt., Odor Asst.
KS Ware, Geotechnical
Wilson & Assoc., Surveying

Dewatering Integration and Odor Control. The existing belt filter presses are aging and create significant odors. BC's design replaced these with centrifuges and located this equipment in the dryer building to minimize cake pumping challenges and significantly reduce odors. Additionally, BC evaluated the existing biofilter system.

Lessons Learned

Real-world operating history should inform dryer design. BC recently served as the engineering partner for MWS's Central WRF Design-Build Dryer Facility Optimization to upgrade the 15-year-old dryer facility. These optimizations were then incorporated into the Dry Creek WRF dryer facility and include increased maintenance platform sizing, climate-controlled control rooms, and moving key wear items to ground level.

Biogas Utilization and Conditioning. Under a separate project, BC evaluated biogas alternatives for the Central WRF Biosolids facility including Renewable identification numbers (RINs, i.e., renewable energy credits) and combined heat and power. We leveraged that knowledge on this project to identify the optimal digester gas conditioning scenarios for the Dry Creek WRF dryer and digestion process using a business case evaluation. The dryer will be powered by biogas from digesters with a natural gas backup system.

Food Waste Evaluation. Based on our work with MWS on a proposed Food Waste Program (separate contract), for this project, BC evaluated the impacts of importing additional digester feedstocks on the operating schedule, quantity of biogas available for dryer fuel, and compatibility with the gas train and process equipment.

Consistent Operations and Class A Product. BC has supported MWS with commissioning and operator training for Andritz drum dryers at Central WRF (separate contract). We also provided recommendations to increase Central WRF's digester gas utilization, Class A pellet end use, and potential food waste addition at the anaerobic digesters. Based on that work, for this project, BC is helping MWS implement the same equipment and O&M procedures at Dry Creek WRF for the new dryer. This will help MWS produce a consistent Class A product, achieve maintenance efficiencies, and facilitate the sharing of O&M staff.

BC has completed the feasibility study and preliminary design, and we recently submitted the 60 percent design for MWS' review. We are contracted to provide final design, bid and award support, construction administration services, and commissioning and operator training services to help MWS plant staff standup the new dryer facility.

Project Approach

MWS issued BC a more than $1.4M amendment to add scope to the project to include a second, redundant dryer; expand the existing WRF site; relocate portions of an existing road; and address various other WRF facility needs. BC incorporated this large addition and scope change with only a 3.5-month impact to the overall schedule.

Achieved Your Same Objectives:

RIGHT FACILITY BC issued a comprehensive RFI to review rotary drum dryer vendor offerings using a best value approach to provide the project with competitive pricing and defensible decision making.

RETURN ON INVESTMENT The Dry Creek dryer facility provides selective redundancy at critical subsystems to provide a reliable and cost-effective system.

RELIABLE DELIVERY BC SME Ken Schnaars has provided operations and commissioning support for the Central WRF dryer facility for over 15 years. He is developing a comprehensive O&M training program to onboard Dry Creek WRF staff efficiently and effectively during commissioning of the new rotary drum dryer.

WT led design of one of the largest biosolids dryer facilities in North America. The new system treats 93% of the WRRF's average solid loads (average day 420 dtpd; peak solids capacity of 850 dtpd).

Biosolids Dryer Facility DBOM

Great Lakes Water Authority (GLWA), Michigan

1,700 mgd
WRRF (peak flow)

$135M
Construction

GLWA's Water Resource Recovery Facility (WRRF) is big—it requires unique solutions on a routine basis because the scale of everything is beyond the norm. As such, innovation is prized by the authority to promote cost-efficiency and sustainability throughout its operations. When the new Maximum Achievable Control Technology (MACT) standards and regulations required modifications to the aging multiple-hearth sewage sludge incinerators, GLWA decided to introduce sustainable technologies to reduce environmental harm, air emissions, and annual operating costs. Their ability to embrace the design-build-operate-maintain (DBOM) approach, share risks, and support innovative design concepts drove cost savings and led to an award-winning and nationally-recognized biosolids dryer facility (BDF).

Project Approach

Beating Accelerated Deadline for Regulatory Compliance. An extremely aggressive schedule of less than three years was required to design, construct, and place the BDF into operation to meet the deadline for EPA's mandated air emissions guidelines. The DBOM approach enabled collaboration and innovation within the fast-track delivery. Wade Trim served as the lead designer on the NEFCO DBOM team.

Seven design packages—including two early release packages for the dewatering sludge conveyance system, site work, building foundations, and blended sludge piping connections—accelerated the construction ahead of schedule. The design and construction processes interfaced closely throughout the development of the seven design packages. Two early design packages were completed and constructed as the other five packages were designed. This included modifications to the Complex 1 Dewatering Sludge Conveyance system as well as work on the BDF that could be completed ahead of time, such as the civil/site work, building foundations, and blended sludge piping connections.

WT's Role in Project
Lead Engineer

Project Value
Total Design-Build portion of contract:
$143M (initial)
$134.7M (final)

WT Design and Cons. Administration Fees:
$3.3M (initial)
$3.9 (final: client added sludge feed pumps)

Project Dates
Design Start-End:
5/2013 to 9/2015 (initial and final)

Construction Start-End:
5/2013 to 3/2016 (initial)
5/2013 to 10/2015 (final)

Reference
Philip Kora, Eng. Const. Manager, GLWA
✆ | 313.297.5909
✉ | philip.kora@glwater.org

WT Key Staff, Role
B. Gombos, Lead Struc.
J. White, Structural
J. Reynhout; Process

Key Subconsultants, Role
DOC, Construction
Tighe&Bond, Engineering
NTH Constr., Air Permit
Somat Eng., Geotech.

Overcoming Challenging Site Conditions. The BDF is located across the street from the WRRF. Wade Trim engineers addressed multiple key design challenges, including pumping and transporting sludge with highly variable flow characteristics and designing a foundation in soft clay to support the silos.

Lessons Learned

Engaging operators is key to optimizing the design and reducing construction impacts. For example, locating the BDF across the street from the WRRF was welcomed by GLWA to simplify maintenance of plant operations during construction and minimize routine trucking disruptions through the plant.

The sludge drying process consists of a triple-pass rotary drum for thermal drying, and the air emissions control system includes regenerative thermal oxidizer (RTO) technology to destroy odor-causing compounds, carbon monoxide, and organic vapors. Two sets of scrubbers reduce particulates and sulfur dioxide.

The sludge delivery system includes two thickened sludge storage tanks and two sludge feed pumps at the WRRF, as well as two half-mile-long redundant sludge force mains (12- and 16-inch diameter) to convey sludge to the BDF. Sludge concentrations range from 2.5% to 6% solids and required flows vary from 350 to 2,400 gallons per minute. New centrifugal chopper pumps and a recirculation system recycle the portion of flow not required at the BDF back to the sludge storage tanks to satisfy minimum flow requirements. The force mains include a flushing system to prevent sludge deposition.

The BDF site is in close proximity to the Detroit River, and soil conditions required deep foundations for the four pellet storage silos, storage bins, and pellet oil tanks. This program included 391 piles driven 100 feet deep and socketed into bedrock for the building foundation, 92 piles for the silos, and eight piles for pellet oil tanks.

Reducing Costs and Increasing Sustainability. The BDF is a world-class nutrient recovery system and recycler. The WWRF treats flows from 77 communities with a population of approximately 3.5 million people. Before this project, GLWA's biosolids disposal was 67% incineration, 11% land application, and 22% landfilled. Today, 93% of the plant's average solids load can be processed in the BDF and converted to a pelleted product for use as a fertilizer or industrial furnace fuel. The new system has also reduced air emissions, greenhouse gases, and natural gas consumption; improved operational efficiency; reduced truck traffic in the neighborhood; and produces Class A biosolids for beneficial reuse.

GLWA minimized their risk using an experienced biosolids management team to deliver and operate the facility. This expertise was particularly critical during startup on a BDF of this size and marketing dried biosolids products. NEFCO will operate and maintain the BDF through 2037. Wade Trim continues to support GLWA through ongoing asset management for the BDF and supporting facilities at the WRRF.

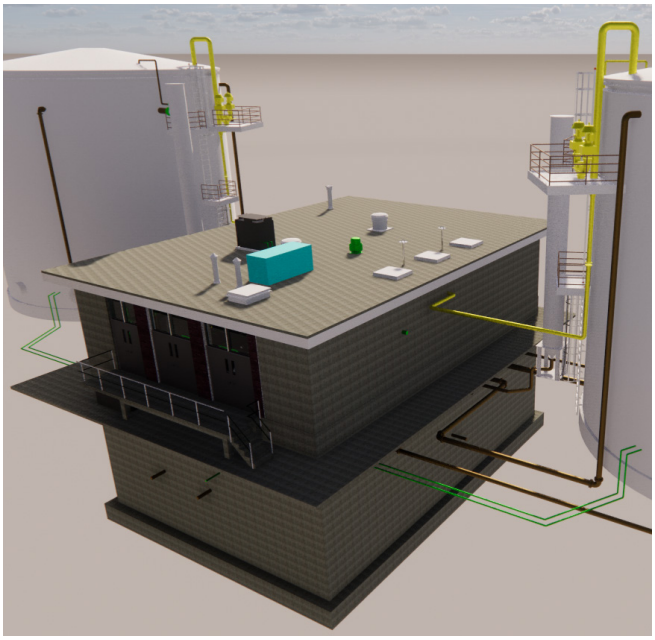
Achieved Your Same Objectives:

RIGHT FACILITY The successful facility earned the ACEC National 2018 Honor Award and ACEC of Michigan 2018 Honorable Conceptor Award.

RETURN ON INVESTMENT The BDF is estimated to save GLWA nearly $11 million a year in WRRF O&M costs, representing a 9-year payback period on capital investment.

RELIABLE DELIVERY The DBOM approach reduced design and construction costs by 15% and enabled delivery ahead of schedule in only 30 months. Fast-tracked early design work provided a head start on construction. Early engagement and collaboration with permitting agencies expedited permit approvals.

BC is helping Auburn move to a Class A biosolids product, with provisions to address potential PFAS regulations. The city recently initiated construction of STP improvements featuring a rotary drum dryer.



Biosolids Dryer and STP Improvements

City of Auburn, New York

25 mgd
WRC

$71M
Construction

Auburn has experienced a significant increase in solids disposal costs in recent years due to shrinking landfill capacity and a tightening disposal market. The city selected BC to perform a financial study and alternative analysis of biosolids dryer installation options to control these rising costs.

The city produces 7,600 wet tons of solids per year. BC evaluated options for dryer installation in an existing and new building, as well as integration with new upstream (e.g., sludge thickening and holding, anaerobic digestion) and post-drying (pyrolysis) processes. The study found that market costs supported installation of a dryer and that anaerobic digestion improved project economics over a 20-year planning horizon. BC also identified a pathway to address potential future PFAS restrictions by providing onsite space for the future addition of a pyrolysis unit at the Sewage Treatment Plant (STP).

BC compiled the study results into a comprehensive report and presented findings to the Auburn City Council to obtain support for advancing the project. We also secured $48,000 in funding for the project's preliminary design phase through a state incentive program (New York State Energy Research and Development Authority) that supports energy efficiency.

After the study phase, Auburn re-selected BC to develop the preliminary design of the proposed digester and dryer facilities. We worked to familiarize Auburn staff with dryer vendors to aid in the procurement document development. In assessing technologies, BC and Auburn reached consensus on innovative technology solutions that will further improve the project budget and schedule from our prior study projections. BC helped identify which technical solutions added value to produce a Class A biosolids product with the identified local market (e.g., primary sludge screening, product storage hanger) and which added cost on a net present value basis (e.g., storage silos, post-drying pelletizer). Using biogas as the primary fuel source for the dryer will dramatically reduce natural gas cost, as well as climate impact. BC also assisted Auburn in assessing options for purchasing equipment and acreage to take over management of their product as an alternative management strategy.

BC's Role in Project
Prime, Lead Engineer

Project Value
Fees (Initial): $7.4M
Fees (Final): $8.4M
(owner scope change/add'l needs, BC completed on budget)

Project Dates
Start: July 2019 (study)
Completion (Initial): May 2022 (design)
Completion (Final): October 2022 (design; owner scope change, BC completed on time)

Reference
Seth Jensen, Utilities Dir.
City of Auburn, NY
315.253.6511
sjensen@auburnny.gov

BC Key Staff, Role
B. Brower, Project Mgr
J. Ross, Lead Engineer
K. Schnaars, Dryer SME
N. Sierra, Biosolids SME
N. Andrews, Energy SME
P. Pepler, Env. Compliance
J. Wiser, Biogas Lead

Key Subconsultants, Role
CME Associates, Geotech.
Dustcon, Dust Safety
GHD, Financial Analysis
Truepoint Laser Scanning

Following preliminary design, the city re-selected BC to prepare the final design and provide construction phase services. During final design, the city greatly expanded BC's scope to address additional needs at its treatment facility, including repairing/upgrading multiple systems that were found to be near failure and/or presented opportunities to optimize plant operations. The final project, estimated at $71 million in construction value, includes not only the new dryer and digesters, but new dewatering and thickening, as well as other significant plant upgrades.

Lessons Learned

Never stop investigating opportunities to reduce costs to the owner. Beyond BC's cost-saving design, and despite beginning construction, we are currently helping the city become eligible for $14M in grants and $14M in low-interest loans (Bipartisan Infrastructure Law) to further reduce costs for ratepayers.

Construction was initiated in April 2023 with an estimated completion date of April 2026. BC will continue to support plant staff with commissioning, startup, training, and troubleshooting so that they are prepared and ready to assume operations of the new facilities, which include:

- Dewatering and drying building featuring a rotary drum dryer
- Biogas and natural gas blending skid to fuel the dryer
- Engineered-roof storage hanger
- Three 0.45 MG steel digesters
- Primary sludge screening
- Mechanical WAS thickening and storage

Project Approach

BC delivered the study and preliminary design on budget. Our design is estimated to save Auburn more than $1 million in current annual disposal costs. BC helped the city obtain funding through a state energy grant and is currently securing additional grant and low-interest loan support to potentially save the city more than $28 million dollars.

BC consistently met the owner's project schedule throughout each phase of delivery. The design schedule was extended by 5 months to accommodate an approximately $1 million increase in scope by the owner.

> *"The team's keen interest in client relations coupled with their national expertise was tremendous. The City was lucky to have the Brown and Caldwell team on the job and I look forward to working closely with Brown and Caldwell on other similar projects in the future.*
>
> — **SETH JENSEN**, Director of Municipal Utilities, City of Auburn

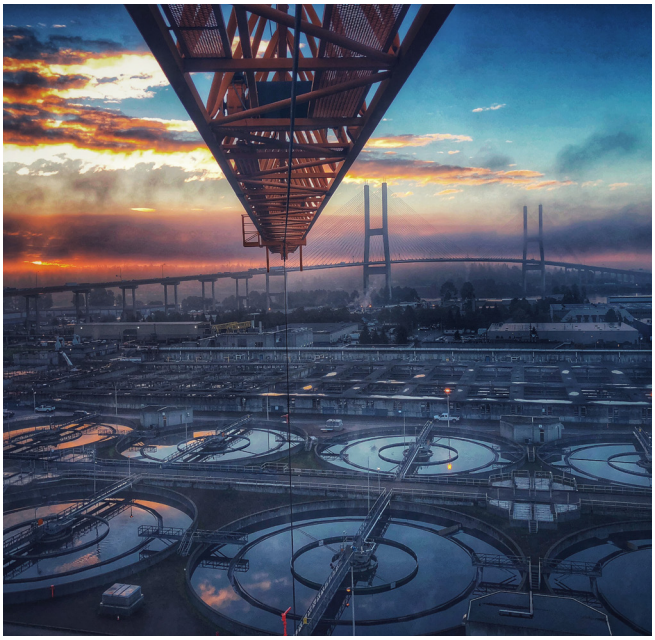
Achieved Your Same Objectives:

RIGHT FACILITY BC and city staff toured other biosolids dryers in the region and captured lessons learned on technology and O&M. Plant staff are now comfortable and prepared to run their new, tailored dryer. As one example, when the dryer is down for extended maintenance, dewatered cake can bypass the dryer and directly load onto trucks.

RETURN ON INVESTMENT BC's design saves money by avoiding landfilling, utilizing biogas, securing grants and low-interest loans, and providing for ease of future upgrades for potential PFAS regulations.

RELIABLE DELIVERY BC tailored the construction schedule to limit plant disruption.

After helping the utility select the site for a proposed Regional Biosolids Dryer Facility (rotary drum), Metro Vancouver re-selected BC to update our study and design for increased biosolids capacity.



Regional Biosolids Drying Facility

Metro Vancouver, British Columbia

90k btpy
Dryer

$250M
Construction

Metro Vancouver undertook several studies in recent years to determine the feasibility of constructing a 75,000 bulk tonnes per year (btpy) Regional Biosolids Drying (RBD) facility to treat biosolids from their five WWTPs. That work led to the recommendation of locating a third-party-operated RBD facility at the Northwest Langley WWTP.

After evolving circumstances around land availability, Metro Vancouver retained BC to further investigate the feasibility of locating the RBD facility at the Annacis Island (AI) WWTP and to assist in determining a preferred location. Some of these circumstances include the ability to purchase adjacent lots and the timing of the dryer now falling in a period of reduced projects at AIWWTP. Ultimately, Metro Vancouver envisions procurement of a Design-Build-Operate (DBO) contract to deliver and run the proposed facility.

Site Selection. BC reviewed the previous reports provided on the dryer feasibility and identified potential locations to site the RBD facility using the criteria and sizing of elements previously established with Metro Vancouver. In reviewing these locations, we considered current and planned capital projects at AIWWTP (Metro Vancouver's largest WWTP), to identify space and schedule clashes for construction sequencing within the bounds of the plant. BC developed site plans for three potential locations. We also considered additional space that could be required for items that were not identified as part of the feasibility studies (e.g., side-stream treatment, odor control, etc.).

Based on BC's analysis and recommendation, Metro Vancouver selected a preferred site with the most potential to locate the RBD facility. The selected site provides suitable space for the RBD, reduced odor control needs, and potential future expansion needs and careful planning could mitigate the challenges in coordinating with other active plant projects.

Synergies that BC also identified through our extensive work with Metro Vancouver with locating the dryer at the AIWWTP site was the potential for the additional space to incorporate a gasification system in the future for the dried biosolids product. Additionally, we identified an opportunity to use the biosolids loading facility to feed both the RBD as well as a pilot hydrothermal

BC's Role in Project
Prime, Lead Engineer

Project Value
Fee (Initial): $69,990
Fee (Final): $114,970 (owner scope change/ add'l. needs, BC delivered on budget)

Project Dates
Start: July 2021
Completion (Initial): October 2021 (study)
Completion (Final): June 2022 (study) (owner scope change/ add'l. needs, BC delivered on schedule)

Reference
Alvin Kim, Senior Project Engineer
Metro Vancouver
4730 Kingsway,
Burnaby, BC V5H 0C6
604.218.0097
Alvin.Kim@metrovancouver.org

BC Key Staff, Role
J. Ross, Dryer Designer
J. Wiser, Biogas SME

Key Subconsultants, Role
N/A

liquefaction (HTL) facility that Metro Vancouver is installing at AIWWTP.

BC completed a business case evaluation (BCE) for several different uses of the AIWWTP biogas. The AIWWTP digesters produce 56 GJ/hr, and BC evaluated over 10 scenarios that looked at fueling the combined heat and power (CHP) system, biogas upgrading for sale to the natural gas utility, the process heating boilers, and the dryer. We looked at greenhouse gas emissions, revenue generation and lifecycle costs to determine the optimal way to fuel the dryer and the plant.

Conceptual Design. Building on the study work, BC developed further footprint options for the RBD facility at AIWWTP. We prepared three conceptual design drawings indicating potential siting locations and documenting the advantages and disadvantages of each location. Our conceptual design included reviewing access for operators and truck drivers, additional technology requirements (e.g., onsite pre-treatment for the waste liquid and air), and how the location may impact future expansion at AIWWTP. A key piece to the conceptual design was confirming the construction and laydown area for the project and sequencing this 3-year construction project within all the other construction projects and laydown areas ongoing at the AIWWTP.

Lessons Learned

Site evaluation should look beyond simply the dryer facility itself. BC's evaluation for Metro Vancouver considered space that could be required for dryer alternative delivery contractors; for potential future systems not part of our feasibility study (e.g., side-stream treatment, etc.); and future plant expansion.

Study and Design Update. Metro Vancouver and BC are currently initiating an update to the study and design to increase the RBD facility volume to 90,000 bulk tonnes per year. BC will:

- Further develop requirements for auxiliary equipment such as condensate treatment, biofiltration, and biogas treatment
- Provide an equipment list with estimated size, as well as equipment layout with consideration of truck traffic flow and truck turning radius
- Revise heat and material balance and provide a list of utilities required and the expected amount for each utility stream
- Provide a revised GHG emissions projection
- Perform a preliminary site investigation to determine environmental risk
- Develop Class 4 level cost estimates

Project Approach

Our approach to delivering this initial work with Metro Vancouver was by providing a small, engaged team supported by key specialists. Our team was able to quickly identify construction sequencing constraints and necessary design information to layout the dryer facility within an acceptable construction window.

We kept the project on schedule and on budget. Our work led to Metro Vancouver increasing our scope to include the BCE for the biogas utilization for AIWWTP, with the dryer, CHP, biogas upgrading, and the boilers.

Achieved Your Same Objectives:

RIGHT FACILITY BC helped Metro Vancouver confirm an appropriate site to reduce operational impacts and provide access and room for DBO procurement. We are now advancing the design and increasing the dryer size to meet regional biosolids needs.

RETURN ON INVESTMENT Our analysis is helping the owner maximize biogas utilization at the plant and the ROI of the dryer.

RELIABLE DELIVERY After delivering the study and conceptual design on time and on budget, our client recently selected BC for a $250,000 sole source contract to update and advance the design. This is a critical project in Metro Vancouver's large capital program at this treatment facility, and BC is helping them to deliver it on time and reduce project impacts.

BC partnered with the county and contractor to successfully deliver this multi-project alternative delivery contract. The project was a critical step in redirecting wastewater from Dekalb County for treatment by GCDWR.

South Gwinnett Wastewater Improvements

Gwinnett County, Georgia

Three
Pump Stations

$7.5M
Construction

BC was the lead designer for the South Gwinnett Wastewater Improvements design-build project. The project redirected sewage flow in the southwest quadrant of Gwinnett County to FWH WRC for treatment and discharge to Lake Lanier in the Chattahoochee River Basin. Key elements included:

- New Castlewood Pump Station (0.43 mgd)
- New Mineral Ridge Pump Station (0.19 mgd)
- New Bermuda Pump Station (2.20 mgd)
- 55,000 lf of new force main (mostly 4-, 6-, 12-, and 14-inch ductile iron)

Collaboration to Optimize Project Delivery. BC led the management and collaboration efforts through the design-build process with the contractor, GCDWR, and owner's representative. Planning and consensus was achieved through workshops prior to design-build contractor selection. Once selected, a series of workshops were conducted including the owner, owner's engineer, construction contractors, and design-build engineer to refine the design, develop value enhancements, and develop construction sequencing, including maintaining operations and reliability. These workshops and monthly progress meetings achieved a highly collaborative process with all parties throughout the design-build process that optimized the design, construction, schedule, and budget, while also avoiding operational disruption.

BC issued five separate design packages to facilitate construction of the project components as soon as they were designed and permitted, expediting the schedule. We provided preliminary engineering, pump selection, force main hydraulic modeling (including a discharge control valve and manifolded force main), and full discipline design services for the pump station and force main. BC also led the permitting for a Georgia EPD stream buffer variance, USACE Nationwide Permit, and local land disturbance permit and building permit. As part of construction phase services, BC provided SCADA and systems integration services as well as onsite inspections.

BC's Role in Project
Prime, Lead Engineer

Project Value
Total Cost (Initial): $7,359,867
Total Cost (Final): $7,467,818 (GCDWR scope change/add'l needs, BC delivered on budget)

Project Dates
Start: December, 2012
Completion (Initial): September, 2014
Completion (Final): September, 2014 (BC delivered on schedule)

Reference
Richard Schoeck, Senior Project Manager
GCDWR
678.376.6953
richard.schoeck@gwinnettcounty.com

BC Key Staff, Role
S. Adams, Project Mgr
J. Diedrich, Electrical SME

Key Subconsultants, Role
Global Control Systems, SCADA and Systems Integration

Schedule Acceleration. By using a design-build approach, GCDWR and our project team were able to initiate construction on portions of the project early in the schedule. For the Norris Lake Pump Station, this allowed for bypass pumps to be installed early and the flow redirected 4 months ahead of schedule. For the force main, sections requiring easement or federal and state environmental permitting were split out into separate design packages. This allowed sections requiring only local permits to begin construction within 2 months of notice to proceed.

Risk Management. Using a design-build contract in conjunction with an integrated project delivery approach allowed GCDWR and the project team to identify project risks and assign responsibilities to the entity most capable of controlling or mitigating the risk. Planning and execution for design and construction was a team effort lead by the party most experienced and knowledgeable, but using all available resources in a collaborative effort. This approach was critical in delivering the project successfully for the county, on time and on budget.

Examples of benefits that our design-build team provided to GCDWR and the community include:

- **Improved Odor Control**. Passive odor control carbon canister inserts are in air release valve manholes at all high points along the route, including larger underground 50 gallon drum canisters at critical locations. A discharge control valve at the termination of the force main also provides back pressure and keeps the force main full during pump operation and closed upon pump shutdown, which further reduces odor as well as the potential for internal corrosion.
- **Reduced Disruption to Community**. Notifications and communication with the community, coordination for emergency vehicles and school buses, and jack and bore crossings for major thoroughfares reduced public impacts. Restoration landscaping resulted in minimal complaints from residents.
- **Reduced Environmental Impacts**. The Bermuda Force Main crossing at the Yellow River was a major challenge. The banks are steep and rocky and the creek is picturesque. Open cut, rock bore, tunnel, or horizontal directional drill would result in significant river disruption and impacts, so we instead installed the pipeline on an existing bridge.

Lessons Learned

Collaboration drives cost savings in alternative delivery. Refinement of the design in a collaborative environment with the construction contractor and GCDWR allowed the county to assess and capitalize on value engineering opportunities throughout the project to reduce overall costs.

Project Approach

Through the close collaboration of all parties fostered by BC, the design and construction services budget was not exceeded. The final construction amount included $107,951 of project enhancements requested by GGDWR.

Through detailed project sequencing, construction of select project elements was accelerated by several months. This approach, coupled with proactive risk management among all parties, helped safeguard the project schedule to meet the county's established deadlines.

Achieved Your Same Objectives:

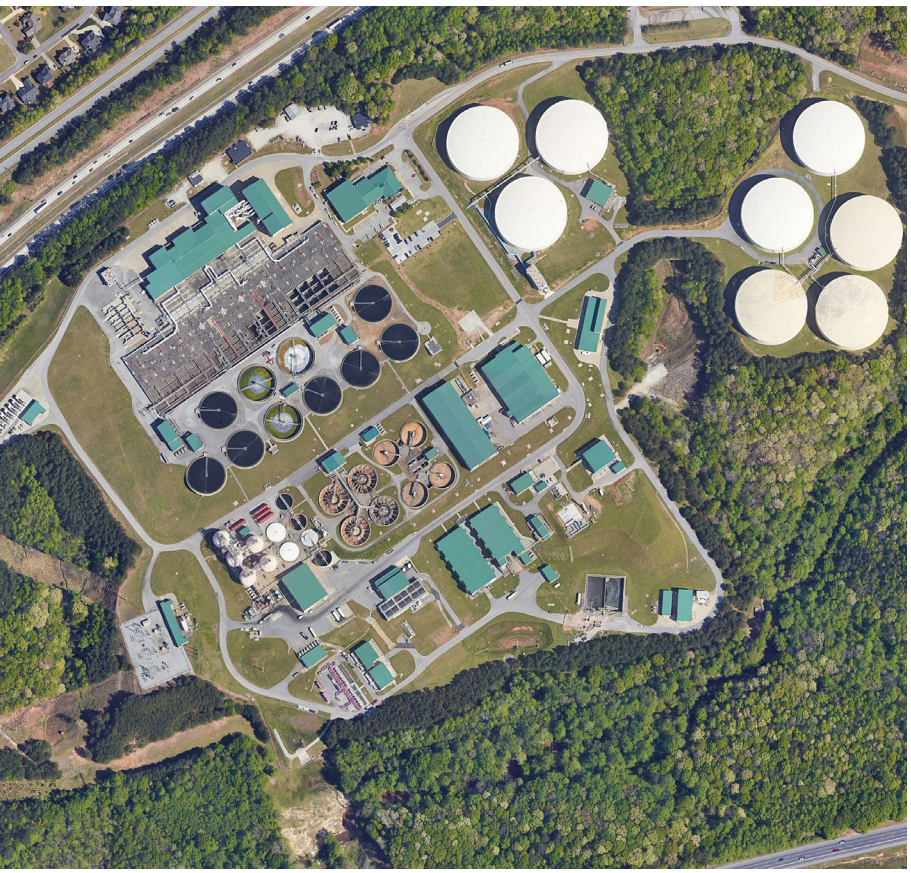
RIGHT FACILITY The project team tailored the design to meet facility requirements (three pump stations and 55,000 lf of pipeline), reduce community impacts (e.g., odor control, construction methods, landscape restoration, etc.), and reduce environmental disturbance (e.g., avoiding impacts to the Yellow River).

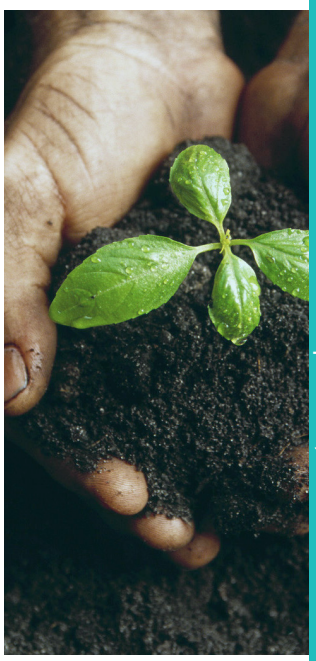
RETURN ON INVESTMENT Successful project delivery achieved Gwinnett's level of service goals by redirecting wastewater flow to FWH WRC and met the county's budget.

RELIABLE DELIVERY BC fostered collaborative delivery with GCDWR and the contractor throughout the design-build process, which provided schedule and value enhancements.

Key Staff Qualifications, Experience, and Location

TAB E





Brown AND Caldwell

Tab E: **Key Staff Qualifications, Experience, and Location**

The BC team offers Gwinnett County proven teamwork, experience and commitment to achieve your project goals.

Right
Facility

Lessons learned to optimize project

Our dryer specialists bring lessons learned to benefit GCDWR. Ken Schnaars and John Ross work daily with rotary drum dryers, coordinating with their manufacturers, and supporting utilities in tailoring dryer designs and operations to their WRC. They are joined by WT professionals who recently delivered one of the largest new dryer facilities in North America via design-build. Our dryer staff are supported by specialists in CMAR, biosolids, and biogas, as well as emerging areas like PFAS. We will deliver a project that meets your current needs and provides flexibility for your future goals and drivers.

Reliable
Delivery

Leadership that delivers for GCDWR

The BC team is led by proven performers for the county. Scott Adams has served GCDWR for 27 years, including successful alternative delivery leadership. George Dick and Chris Haney (WT) contributed to the recent FWH WRC Biosolids Master Plan and CHP Evaluation projects.

Co-located team for local collaboration

BC and all but one of our partners are based in Gwinnett or the Atlanta metro area. BC and WT have offices at The Water Tower, the county's hub for water innovation and research adjacent to FWH WRC. We are ready to facilitate onsite collaboration with GCDWR, your CMAR, and your Owner's Agent to deliver outstanding results.

"The Archer Western-Brown and Caldwell team's progressive design-build approach has allowed the County... to keep the largest expansion project in the county's history on schedule. Through an open and targeted process, the team has been instrumental in enhancing collaboration and communication among all stakeholders.

— **DAVID CLARK**, P.E., Director of Public Works, Fulton County

BC (lead designer), SLK (electrical and building mechanical design sub), and WT (third-party CM) are currently delivering Fulton County's $300M Big Creek WRF Expansion. BC and our JV partner Archer Western are the design-builder.

Your Biosolids Dryer Project Engineering Team

The BC team provides GCDWR comprehensive expertise from staff committed to your project. Further information on our project manager and key team leaders is provided on the following pages and resumes and resumes are provided under Tab F.

Return on Investment

Full-service offering to increase ROI

BC offers additional resources to provide full-service support to Gwinnett County as it works toward maximizing its ROI from the new dryer facility and Class A biosolids product. These two value-added options are available if desirable to GCDWR:

1. A Blue Ribbon Panel could evaluate recommendations and provide feedback at key project milestones (e.g., 30 and 60 percent design). Panel members would share lessons learned to benefit your project from their firsthand experience building and operating similar dryers and biosolids programs. As members of utility agencies, these individuals would donate their time and not be a member of our team.
2. BC could help the county develop the framework to market and distribute a Class A biosolids product and manage its biogas. Our specialists support biosolids marketing and biogas management locally and nationwide. BC also works with third-party marketing and distribution consultants and could integrate them into our team.

As these resources are outside the RFP scope, BC has not included resumes or rates for these BC personnel.

Gwinnett

Correggio Peagler, Sr.
PRINCIPAL
Atlanta

Chris Haney, PE* (WT)
WADE TRIM PRINCIPAL
Gwinnett

Scott Adams, PE, DBIA*
PROJECT MANAGER
Gwinnett

Tim Masterson, PE, DBIA*
QA/QC MANAGER & CMAR LIAISON
Atlanta

Ken Hoff, CSP, CHST
ENVIRONMENTAL HEALTH & SAFETY
Orlando

George Dick, PE*
LEAD DESIGN ENGINEER
Tampa

Ken Schnaars, PE
DRYER SME
Nashville

KEY
- CERM – Corporate Environmental Risk Management
- DSI – Dustcon Solutions
- SLK – SL King & Associates
- WA – Wendel Architecture
- WT – Wade Trim
- *Georgia professional license

VALUE ADD OPTIONS

Blue Ribbon Panel

- Metro Water Services (Nashville)
- Great Lakes Water Authority
- Massachusetts Water Resources Authority
- Milwaukee Metropolitan Sewer District

Specialty Support

BIOSOLIDS MANAGEMENT AND PFAS
Natalie Sierra, PE // *Boston*
Bill Brower, PE // *Syracuse*

BIOGAS MANAGEMENT
John Willis, PhD, PE, BCEE* // *Atlanta*
Ted Hull, PE, LEED AP* // *Atlanta*

Support Staff

Dryer
John Ross, PE // *Detroit*

Process Mechanical
Ted Hull, PE, LEED AP* // *Atlanta*

SLUDGE CONVEYANCE
Gary Emmel, PE* *(WT)* // *Gwinnett*
Jeff Reynhout, PE *(WT)* // *Detroit*

Biogas/Energy Recovery
Jason Wiser, PE // *Phoenix*
Nancy Andrews, PE // *Saint Paul*

Building Mechanical
Raymond Johnson, II, PE*, LEED AP *(WA)* // *Williamsville, NY*

Electrical
Floyd Keels, PE* *(SLK)* // *Atlanta*
Waine Pittman *(SLK)* // *Atlanta*

I&C
John Diedrich, PE* // *Atlanta*
Brian Williams, PE* // *Atlanta*

Structural
Brian Gombos, PE* *(WT)* // *Detroit*
Jim White, PE *(WT)* // *Detroit*

Architecture
Roberta Unger, RA*, FAIA, NCARB *(WA)* // *Atlanta*

Civil
CIVIL/STORMWATER
Shen Zhou, PE* *(WT)* *Gwinnett*

YARD PIPING/UTILITIES
Steve Bupp, PE *(WT)* *Gwinnett*

Geotechnical
Thomas Tye, PE* *(CERM)* *Atlanta*

Surveying
Erick Smith, PLS* *(CERM)* *Atlanta*

BIM
Robert Taylor // *Nashville*

Dust Safety
Timothy Heneks, PE*, ASP *(DSI)* *West Palm Beach, FL*

Odor Control
Dave McEwen, PE // *Raleigh*

Permitting
SITE
Shen Zhou, PE* *(WT)* // *Gwinnett*

AIR
Paul Pepler, PE // *Boston*

ARPA Administration
Sam Atere-Roberts, PE*, DBIA* *Atlanta*

Training, Commissioning, and Startup
Ken Schnaars, PE, *Nashville*
John Ross, PE // *Detroit*

Construction Services
CM
James Cook, PE*, DBIA // *Atlanta*

RE/RI
Akimza Gunn *(CERM)* // *Atlanta*
Richard Brown *(CERM)* *Atlanta*

CONTROLS
Herve Yondo, PE*, CCM *(WT)* *Gwinnett*

Cost Estimating and Scheduling
William Agster // *Denver*

Our Key Team Leaders bring significant—and in some cases unique—experience and insight that will help you achieve your project goals.

As detailed below, the BC team is led by staff who are proven and known to GCDWR and the industry for delivering biosolids dryers, biogas systems, WRC upgrades, and alternative delivery contracts.

Name, Role, Location, Years Exp.	Value of Experience to Project Goals	Degree(s)	Registration /Certification	Responsibility
 **Scott Adams** Project Manager *Atlanta, GA* *Total Years: 29* *Years at BC: 13*	Serving GCDWR for 27 years, Scott has managed dozens of county projects including alternative delivery. A resident of Gwinnett, he brings a personal commitment to deliver success and achieve a return on investment for the community.	B.S., Civil Eng., North Carolina State U.	Prof. Egr., GA, PE025402 Design-Build Prof., DBIA	**SCOTT** is responsible for achieving GCDWR's project requirements and service expectations. He will direct our team, oversee our work effort, and drive collaboration.
 **Correggio Peagler, Sr.** Principal *Atlanta, GA* *Total Years: 37* *Years at BC: 11*	Reggie has experience as a business leader, team manager, consultant, and military officer. He will drive his personal values of teamwork, quality, and service in overseeing our work to achieve GCDWR's project goals.	M.B.A., Georgia State U. B.S., Computer Science/ Economics, Alabama A&M U.		**REGGIE** will serve as BC's accountable corporate officer. He will execute the contract, commit company resources, and verify our team's service achieves the Gwinnett Standard.
 **Chris Haney** Wade Trim Principal *Atlanta, GA* *Total Years: 28* *Years at WT: 8*	Chris has worked with Gwinnett since 2001, including on the 2015 FWH WRC Biosolids Master Plan and Evaluation. He regularly works with BC (e.g., Big Creek WRF Expansion, Fulton, GA) and will foster teamwork to benefit GCDWR.	B.C.E., Civil Eng. and Envir. System Design, Georgia Tech	Prof. Egr., GA, PE028406	**CHRIS** will serve as WT's accountable corporate officer. He will commit company resources and verify WT's service achieves the Gwinnett Standard.
 **George Dick** Lead Design Engineer *Atlanta, GA* *Total Years: 8* *Years at BC: <1*	George brings a unique blend of experience to benefit GCDWR; he has delivered projects at FWH WRC, has recent biosolids dryer and alternative delivery experience, and has worked closely with BC and WT staff.	M.S., Envir. Eng., U. of South Florida B.S., Civil Eng., U. of South Florida	Prof. Egr., GA, PE044868	**GEORGE** will lead our team's daily work effort and development of engineering, design, and construction document deliverables.
 **Ken Schnaars** Dryer Subject Matter Expert *Nashville, TN* *Total Years: 47* *Years at BC: 9*	Ken has nearly 50 years of experience in plant design and operations. He is currently helping operators stand up a new biosolids facility with rotary drum dryers in Nashville. Ken will help verify operators' needs are addressed in the project.	B.E.T., Civil Eng., U. of Central Florida	Prof. Egr., WI, 29809	**KEN** will serve as a technical advisor and reviewer. He will work with plant staff from design through training, commissioning, and startup so that operators are prepared to run the dryer.
 **Tim Masterson** QA/QC Manager & CMAR Liaison *Atlanta* *Total Years: 31* *Years at BC: 9*	Tim's WRC experience spans design, construction, and alternative delivery. As quality or project manager for six recent WRC alternative delivery projects, he brings CMAR best practices to benefit GCDWR.	M.S., B.S., Civil Eng., Worcester Tech	Prof. Egr., GA, PE031330 Design-Build Prof., DBIA	**TIM** will oversee and verify implementation of a quality management plan. He will also facilitate collaboration with the CMAR to guide project delivery.

Name, Role, Location, Years Exp.	Value of Experience to Project Goals	Degree(s)	Registration /Certification	Responsibility
 **John Ross** Dryer Specialist *Detroit, MI* *Total Years: 10* *Years at BC: 6*	John is a specialist in drying and biogas utilization who works daily with rotary drum dryers and vendors. He is engaged in research to determine the fate of PFAS during biosolids thermal treatment. He will help GCDWR build the right facility for today with flexibility for tomorrow.	M.S., B.S., Civil/Envir. Eng., Marquette U.	Prof. Egr., MA, 53742	JOHN will support site selection, design, and integration of the dryer into WRC operations. He will coordinate with vendors and support construction and startup.
 **Ted Hull** Process Mechanical Lead *Atlanta* *Total Years: 27* *Years at BC: 27*	Ted's recent experience in biosolids, biogas, and alternative delivery is ideal and includes a dryer for Rensselaer County, NY; R. M. Clayton WRC Headworks DB for Atlanta; and DC metro bioenergy program (WSSC).	M.S., Envir. Eng., U. of NC at Chapel Hill B.S., Civil Eng., Duke U.	Prof. Egr., GA, PE025482 LEED Accredited Prof., USGBC	TED will lead the team's process mechanical engineering design, helping integrate the dryer into plant operations and facilities.
 **Gary Emmel** Sludge Conveyance *Atlanta* *Total Years: 40* *Years at WT: 2*	Gary's 40 years of wastewater treatment experience, including as a plant operator, will help him design an optimal system for FWH WRC's operations.	B.E., Mech. Eng., U. of Dayton, Ohio	Prof. Egr. GA, PE030326	GARY will lead the sludge conveyance design, a critical element in site selection and plant operations.
 **Jason Wiser** Biogas/Energy Recovery SME *Phoenix* *Total Years: 20* *Years at BC: 18*	Jason authored an EPA guidance manual on biogas (WRC digester gas) systems and designed a biogas system for the country's largest advanced WRC (Blue Plains, DC Water). His leading insight will help GCDWR increase biogas utilization.	M.S., B.S., Civil and Envir. Eng., U. of Utah	Prof. Egr., GA, PE025482 (inactive); NCEES, 35500	JASON will guide our team in developing a biogas system to power the dryer that is tailored to FWH WRC.
 **Floyd Keels** Electrical Lead *Atlanta* *Total Years: 23*	Floyd brings diverse electrical experience in the design of power distribution, lighting, fire protection, communications networking, and security to his role for the new dryer facility.	B.S., Electrical Eng., Georgia Tech B.S., Math, Morehouse College	Prof. Egr., GA, PE035071	FLOYD will lead the electrical design for the new biosolids dryer.
 **Shen Zhou** Civil/Stormwater & Site Permitting Lead *Atlanta* *Total Years: 20* *Years at WT: 1*	With over 20 years of local civil experience and a keen knowledge of area regulations, Shen will proactively manage site permitting and develop an optimal design for either site alternative.	M.S., Civil Eng., U. of New Mexico B.S., Highway Eng., Tongji U.	Prof. Egr. PE032480, GA	SHEN will play a key role in site selection and leading site design and permitting.

Name, Role, Location, Years Exp.	Value of Experience to Project Goals	Degree(s)	Registration /Certification	Responsibility
 **Timothy Heneks** Dust Safety Specialist *West Palm Beach* *Total Years: 10* *Years at DSI: 4*	Tim is a principal member of three National Fire Protection Association committees for dust explosion and fire prevention standards. He regularly works with BC and will help FWH WRC to maintain safe operations.	B.S., Chemical Eng., U. of Florida	Prof. Egr. PE032480, GA Assoc. Safety Prof., Board of Certified Safety Profs.	**TIM** will work closely with BC in evaluating and addressing dust safety in the design and operation of dryer.
 **James Cook** Construction Manager *Atlanta* *Total Years: 27* *Years at BC: 20*	James is an engineering and DB professional who was CM for the Norris Lake Pump Station and Force Main DB project and five other successful GCDWR contracts. He will help drive success through construction.	M.E., Civil Eng., U. of Louisville B.S., Eng. Science, U. of Louisville	Prof. Egr. PE029349, GA Design-Build Prof., DBIA	**JAMES** will support onsite construction observation and contract document conformance, working closely with GCDWR, the CMAR, and contractors.
 **Herve Yondo** Project Controls *Atlanta* *Total Years: 14* *Years at WT: 3*	Herve is a certified CM who leads project controls on the $300M PDB Big Creek WRF Expansion, working closely with BC. His experience and established teamwork will facilitate effective controls.	M.S., B.S., CM, Southern Polytechnic State U.	Prof. Egr, PE043407, GA Certified CM, CM Association of America	**HERVE** is experienced using Procore and will lead project controls and play a key role in construction coordination.

GCDWR's success is a priority to BC. Our team is available, ready to start, and committed to your project through startup of the new facility.

Available Local Project Team

As stated in our cover letter and detailed in the table on the following pages, BC and our partners are committed to maintaining the availability of our proposed team for GCDWR's dryer project, specifically including our Project Manager and Key Team Leaders. This commitment will be overseen by BC's principal, as well as the principal of our major subconsultant, WT. They are company officers with the authority to dedicate resources.

BC and our partner firms bring large and growing local staffs to support this effort, including space at The Water Tower in Gwinnett County (BC and WT). Our team is locally based with most staff in the Atlanta metro area, including key staff in Gwinnett such as our Project Manager.

Alternative Delivery Teamwork

BC and WT are already working together on a similar WRC DB project in Fulton county. We know firsthand the importance of maintaining a stable and engaged staff to foster collaboration and accountability for large alternative delivery projects, like the one proposed. GCDWR's success is a priority to our firms. We will maintain a consistent staff to facilitate outstanding teamwork with the county and its stakeholders.

Proactive Project Management

At the start of the project, our Project Manager, Scott Adams, will prepare a Project Management Plan (PMP). The PMP will be an integrated plan that details how BC will manage the project and how our team will execute the work. The PMP will establish schedule milestones and also incorporate a Quality Assurance and Quality Control Plan.

Scott will regularly update the PMP throughout the project lifecycle. This will include maintaining and updating the project work breakdown structure (WBS), which delineates tasks, budgets, and staffing. Scott will proactively monitor staffing throughout the work effort with resource management checks to verify our team is maintaining the availability required to fulfill their roles as proposed for GCDWR's project.

Scott Adams (pictured left) has served GCDWR for 27 years. A county native and graduate of Leadership Gwinnett, he drives the Gwinnett Standard daily in BC's work for GCDWR. As Project Manager, Scott will keep our team focused to deliver your project and achieve your goals.

The table below presents the estimated monthly availability our key team leaders can commit to GCDWR's project. The table also details staff commitments to other projects. During project negotiation with GCDWR, BC can further refine these staff commitments to verify they align with the county's project delivery requirements and the WBS prepared as part of BC's PMP.

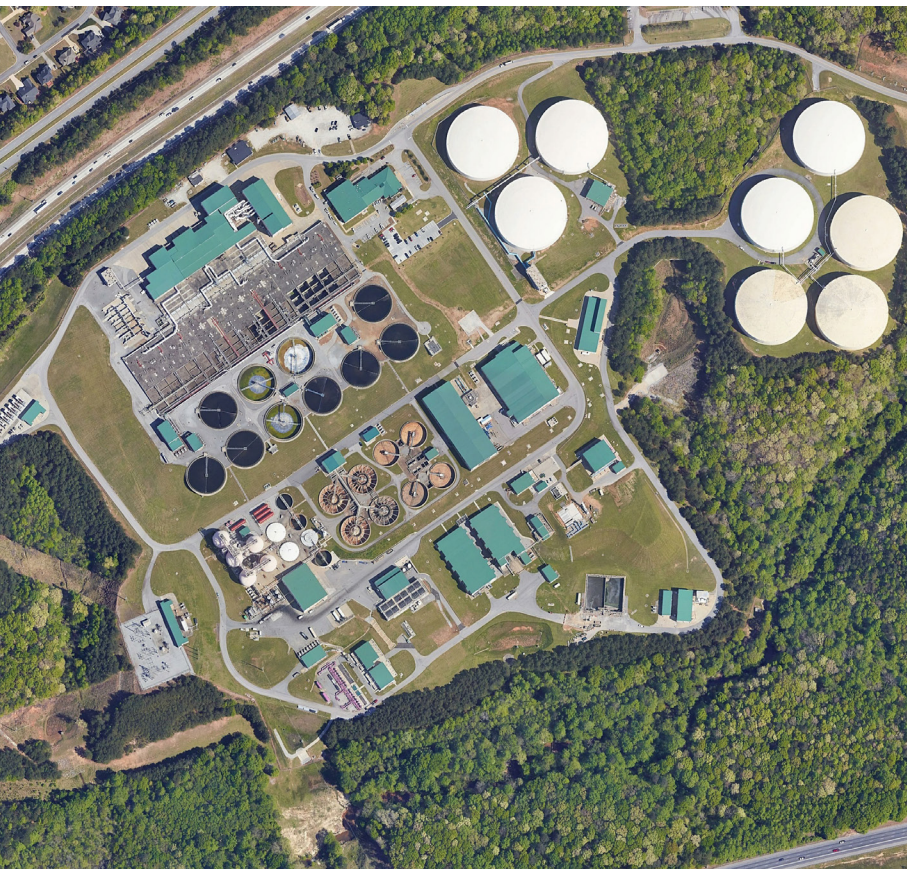
GCDWR Dryer Project Commitment	Other Project Commitments: Project, Client, Location / Role, Est. Monthly Hr. Commitment / Status / Est. Completion
Scott Adams Project Manager *50% or ~85 hrs. monthly availability*	**Shakerag WRF Expansion,** Forsyth, GA / QA/QC, ~3 hrs. / Active / June 2023 **Gas Pipeline Services,** Southern Company Gas, GA / QA/QC, ~1 hr. / Active / Dec 2023 **Fletcher Creek Sewer Rehabilitation,** Memphis, TN / Project Manager, ~25 hrs. / Active / Sep 2024 **Demand Services, GCDWR,** Gwinnett, GA / Contract Manager, ~40 hrs. / Active / Dec 2027
C. Peagler, Sr. Principal *20% or ~35 hrs. monthly availability*	**Shakerag WRF Expansion,** Forsyth, GA / Oversight, ~1 hrs. / Active / June 2023 **Workforce Racial Equity Support,** San Francisco, CA / Advisor, ~2 hr. / Active / Dec 2023
Chris Haney Wade Trim Principal *55% or ~95 hrs. monthly availability*	**TO2 WTP/WWTP,** Atlanta DWM, GA / Contract & Project Manager, ~20 hrs. / Active / May 2023 **Third-Party CM Big Creek WRF Exp.,** Fulton, GA, Principal Engineer, ~10 hrs. / Active / July 2024 **Wastewater Master Plan,** Pinellas County Utilities, FL, Principal, ~25 hrs. / Active / Mar 2027 **Demand Services, GCDWR,** Gwinnett County, GA / Contract Manager, ~25 hrs. / Active / Dec 2027
George Dick Lead Design Engineer *50% or ~85 hrs. monthly availability*	**NSWRD Biosolids Master Plan**, Northshore, IL / Project Egr. ~10 hrs. / Active / Dec 2023 **Sludge Storage Improvement Design**, Spartanburg, SC / Project Egr. ~25 hrs. / Active / Mar 2024 **Dry Creek WRF Dryer**, MWS Nashville, TN / Project Egr., ~40 hrs. / Active / Mar 2025 **One Water Campus**, Hillsborough County, FL / Project Egr. ~10 hrs. / Active / Dec 2026
Ken Schnaars Dryer SME *25% or ~42 hrs. monthly availability*	**WRF Aeration,** NEORSD, Cleveland, OH / Operations Specialist, ~3 hr. / Active / Dec 2023 **Fairview Pump Station,** GLWA, Detroit, MI / Operations Specialist, ~5 hrs. / Active / Jan 2024 **Central WRF Optimization,** MWS Nashville, TN / Operations Specialist, ~80 hrs. / Active / Sep 2024 **Dry Creek WRF Dryer,** MWS Nashville, TN / Operations Specialist, ~20 hrs. / Active / Mar 2025 **Energy Management Program,** MWS Nashville, TN / Ops. Specialist, ~10 hrs. / Active / Mar 2025

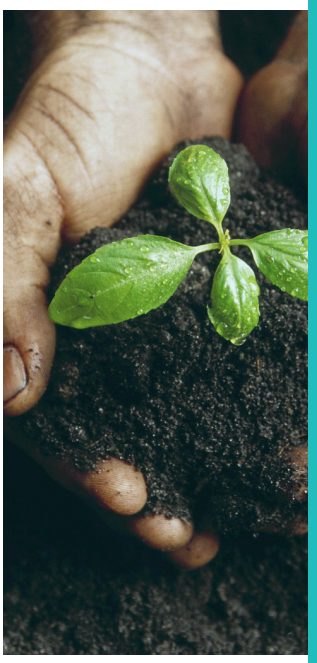
GCDWR Dryer Project Commitment	Other Project Commitments: Project, Client, Location / Role, Est. Monthly Hr. Commitment / Status / Est. Completion
Tim Masterson QA/QC Manager & CMAR Liaison *20% or ~35 hrs. monthly availability*	**Shakerag WRF Expansion,** Forsyth, GA / QC, ~8 hrs. / Active / June 2023 **Rocky River Rgl. WWTP Expansion DB,** Cabarrus WSA, NC / QC, ~4 hrs. / Active / May 2024 **7 Mile Water Main, DB, GLWA,** Detroit, MI / QC, ~4 hrs. / Active / June 2024 **Big Creek WRF Expansion PDB,** Fulton, GA / QC, ~10 hrs. / Active / July 2024
John Ross Dryer Specialist *35% or ~60 hrs. monthly availability*	**Biosolids Facility Imp. Design,** Derry Township MA, PA / Project Egr., ~10 hrs. / Active / Dec 2023 **Dryer Feasibility Study,** Keene, NH / Dryer Specialist, ~10 hrs. / Active / Dec 2023 **Dry Creek WRF Dryer,** MWS Nashville, TN / Dryer Design, ~40 hrs. / Active / Mar 2025 **SWWWTP Expansion,** Columbus, OH / Project Engineer, ~40 hrs. / Active / Mar 2025 **Dryer Construction Services,** Auburn, NY / Lead Engineer, ~2 hrs. / Active / Apr 2026
Ted Hull Proc. Mech. Lead *50% or ~85 hrs. monthly availability*	**Hunts Point WRRF Digesters**, NYCDEP, NY / Proc. Mech., ~20 hrs. / Active / Apr 2026 **WRRF Upgrade**, Timpanogos SS Dist., UT / Digester Lead, ~60 hrs. / Active / Mar 2025 **Dry Creek WRF Dryer**, MWS Nashville, TN / Senior QA/QC, ~4 hrs. / Active / Mar 2025 **Heat Transfer**, Alexandria Renew, VA / Proc. Mech. Lead, ~4 hrs. / Active / May 2023 **Bioenergy Program**, Wash. Sub. San. Dist., MD / Project Egr., ~8 hrs. / Active / April 2024
Gary Emmel Sludge Conveyance *55% or ~95 hrs. monthly availability*	**TO2 WTP/WWTP,** Atlanta DWM, GA / Sr. Engineer, ~15 hrs. / Active / May 2023 **TO5 ICWRC/SRWRC CM,** Atlanta DWM, GA / Sr. Engineer, ~30 hrs. / Active / Nov 2023 **Third-Party CM Big Creek WRF Expansion,** Fulton, GA ~10 hrs. / Active / July 2024 **Demand Services,** GCDWR, Gwinnett, GA / Sr. Engineer, ~15 hrs. / Active / Dec 2027
Jason Wiser Biogas/Energy Recovery Subject Matter Expert *10% or ~15 hrs. monthly availability*	**Digester Rehab,** Tolleson, AZ / Project Manager, ~20 hrs. / Active / Oct 2023 **South Plant Biogas and Heat Imprv.,** King County, WA / Biogas Advisor, ~20 hrs. / Active / Dec 2024 **WRRF Upgrade,** Timpanogos Special Service Dist., UT / Biogas Lead, ~40 hrs. / Active / Mar 2025 **Biogas Technical Advisor,** Various Clients, North America / Biogas Advisor, ~90 hrs. / Active / N/A

GCDWR Dryer Project Commitment	Other Project Commitments: Project, Client, Location / Role, Est. Monthly Hr. Commitment / Status / Est. Completion
Floyd Keels Electrical Lead *40% or ~70 hrs. monthly availability*	**As-Needed Electrical Engineering and QC**, Various Clients, ~70 hrs. / Active / N/A
Shen Zhou Civil/Stormwater & Site Permitting Lead *75% or ~125 hrs. monthly availability*	**Demand Services,** GCDWR, Gwinnett, GA / QA/QC, ~8 hrs. / Active / Dec 2027 **TO2 WTP/WWTP,** Atlanta DWM, GA / Sr. Engineer, ~15 hrs. / Active / May 2023 **TO5 ICWRC/SRWRC CM,** Atlanta DWM, GA / Sr. Engineer, ~8 hrs. / Active / Nov 2023 **Southerly Tunnel,** NEORSD, Cleveland, OH / Sr. Engineer, ~10 hrs. / Active / July 2028
Timothy Heneks Dust Safety Specialist *10% or ~15 hrs. monthly availability*	Tim and Dustcon are available and committed to serving GCDWR on this project. While a key member of our team, Dustcon's work will likely take place over a relatively short period of time (on the order of weeks) and will likely not exceed more than a few dozen hours total. This is typical for Dustcon's work, and as such, Tim's other project commitments are wide-ranging and it is not feasible to list them in the space allotted.
James Cook Construction Manager *50% or ~85 hrs. monthly availability*	**Big Creek WRF Exp. PDB,** Fulton, GA / GC Agent and RE Liaison, ~150 hrs. / Active / July 2024
Herve Yondo Project Controls *30% or ~50 hrs. monthly availability*	**Demand Services,** GCDWR, Gwinnett, GA / Project Manager, ~25 hrs. / Active / Dec 2027 **TO2 WTP/WWTP,** Atlanta DWM, Atlanta, GA / Deputy Project Manager ~20 hrs. / Active / May 2023 **Third-Party CM BCWRF Expansion,** Fulton, GA / Project Manager, ~10 hrs. / Active / July 2024 **CM Services,** DeKalb County DWM, GA / Project Manager, ~50 hrs. / Active / June 2026

Resumes of Individuals

TAB F





Brown AND Caldwell

Scott Adams, P.E., DBIA

Project Manager

Serving Gwinnett for 29 years, Scott has managed dozens of GCDWR projects including design-build. A long-time county resident, he is committed to leading his project teams to deliver success for Gwinnett.

Scott's past two decades have focused on project management and client service oversight, including driving collaboration on five alternative delivery projects. His project experience includes the design and construction of complex wastewater treatment, pumping, and collection systems; water storage, pumping, and distribution systems; and civil/site design and erosion and sedimentation control. Scott regularly navigates permitting at the local, state, and federal levels for clients, including wastewater discharge, water withdrawal, Georgia EPD, NPDES, and USACE Nationwide Permits.

South Gwinnett Phase Two Design-Build, Gwinnett County Department of Water Resources, Georgia

Project Manager/Design Manager. Led the design team for the successful on-time, on-budget delivery of $7.5M design-build project featuring three pump stations (2.2 mgd, 0.19 mgd and 0.43 mgd) and 55,000 lf of new 4-, 6-, 12-, and 14-inch force main. The project redirected sewage flow in the southwest quadrant of Gwinnett County to FWH WRC for treatment and discharge to Lake Lanier in the Chattahoochee River Basin. Led the management and collaboration efforts through the design-build process with the contractor, GCDWR, and owner's representative. Planning and consensus was achieved through workshops prior to design-build contractor selection. Once selected, facilitated a series of workshops with project stakeholders to refine the design, develop value enhancements, and develop construction sequencing, including maintaining operations and reliability.

Norris Lake Pumping Station and Force Main Design-Build, Gwinnett County Department of Water Resources, Georgia

Project Manager/Design Manager. Led the design team for the successful on-time, on-budget delivery of this design-build pump station and force main project including a 5.2 mgd pump station and 20,000 lf of new 16-inch force main.

Education
B.S., Civil Engineering, North Carolina State University, 1994

Registration
Professional Engineer, Georgia, PE025402

Design Build Professional, DBIA

Years of Experience
29

Years at BC
13

BC Office Location
Gwinnett County

Residence Location
Gwinnett County

Professional Affiliations
Georgia Association of Water Professionals (Wastewater Committee and Small Systems Committee Former Chair]

Georgia Water Environment Federation (Former Trustee)

Water Environment Federation (current House of Delegates Representative)

"Living in Gwinnett and serving GCDWR for almost 30 years, I am committed to helping the county establish a sustainable biosolids program. My top priority is managing all aspects of the project and delivering a dryer facility that is on time, on budget, and achieves your ROI goals.

Mineral Springs Water Main Design-Build, Gwinnett County Department of Water Resources, Georgia

Principal. Directed team and assisted the county in the development of design-build specifications and request for proposals for the construction of 17,000 feet of 24-inch water main.

Gravity Sewer Replacement Package One Design-Build, DeKalb County Department of Watershed Management, Georgia

Technical Advisor. Responsible for the planning and approach for replacement or rehabilitation of 63,000 lf of gravity sewer pipelines in 19 separate project areas, including assessment, point repairs, and design methods for the $28M DB project.

Crooked Creek WRF Basin Covers/Piping Modifications, Gwinnett County Department of Water Resources, Georgia

Project Manager. Responsible for evaluation of excessive algae growth due to conversion to ultraviolet disinfection, including hydraulic analysis for new piping through the chlorine contact chamber and aluminum channel covers.

Beaver Ruin WRF and Jackson Creek WRF Phosphorus Removal Upgrades, Gwinnett County Department of Water Resources, Georgia

Project Manager. Responsible for filter influent pumping station and alum and polymer feed systems for the addition of deep-bed sand filters and a chemical addition to the WRFs.

Beaver Ruin WRF Recycle Pumping Station, Gwinnett County Department of Water Resources, Georgia

Project Manager. Led design of a submersible internal recycle pumping station for the WRF. Special project considerations included a wide flow range of 200 to 1,500 gpm, deep wet well (46 ft), and force main routing within the WRF.

Yellow River WRF Pumping Station and Force Main, Gwinnett County Department of Water Resources, Georgia

Project Manager. Responsible for design of a 7 mgd raw sewage pumping station at the Yellow River WRF and 35,000 feet of 24-inch force main.

Demand Services Contracts, Gwinnett County Department of Water Resources, Georgia

Contract Manager and/or Client Service Manager. Directing service to GCDWR under repeat contracts for water and wastewater and associated services (Categories A, B, G, H, and I). Serving as contract manager for Category A, which includes WRF and pump station services.

James Creek WWTP, Expansion, Forsyth County, Georgia

Project Manager. Led design, permitting, and construction services to expand a 1 mgd membrane bioreactor (MBR) facility to 2.55 mgd.

Shakerag WRF Expansion, Forsyth County, Georgia

QA/QC. Providing QA/QC support for the expansion to double the capacity of the existing MBR wastewater treatment plant to 2.5 mgd.

Low Pressure Sewer Standards, Gwinnett County Department of Water Resources, Georgia

Project Manager and Technical Lead. Supported GCDWR in developing countywide standards for low pressure sewer systems.

Patterson Force Main Replacement, Gwinnett County Department of Water Resources, Georgia

Project Manager and Technical Lead. Responsible for the evaluation and replacement design for 3,300 lf of deteriorated 30-inch ductile iron pipe force main, including an options study evaluating multiple routes and construction methods including cured in place, pipe bursting, tunneling, and replacement in the same trench. Once the preferred route was determined, provided planning and design services for the new force main, including cost estimating, abandonment provisions, connection to and existing 48-inch force main, easements, 48-inch motor actuated valve, two jack and bores, and construction sequencing.

Correggio Peagler, Sr.

Principal

Reggie will drive his personal values of teamwork, quality, and service in overseeing our work to fulfill GCDWR's project requirements.

Reggie has experience as a business leader, team manager, consultant, and military officer. His employment and consulting experience has afforded him the opportunity to work in a variety of industries including municipal water and wastewater utilities, the Department of Defense, Department of Energy, financial services, forest products, and ports (marine and aviation). Reggie has provided utility industry leadership through AWWA research on the alignment of utility strategy and IT strategy. He also provided cybersecurity training for the industry nationally through AWWA and the Water ISAC.

Demand Services Contracts, Gwinnett County Department of Water Resources, Georgia

Principal. Directed service to GCDWR under repeat contracts for water and wastewater and associated services (Categories A, B, G, H, and I).

R.M. Clayton WRC Headworks Improvements Design-Build, Atlanta, Georgia

Principal. R.M. Clayton was a fast-tracked design-build project to completely rehabilitate the $54M, 240 mgd headworks and grit removal structure. Work involved 30-foot-deep excavation in granite next to the existing facility, a new headcell structure for grit removal, hydraulic improvements, bar-screen and screening equipment replacement, and drumscreen rehabilitation. Work also included duct bank and site electrical and controls work along with major upgrades to the odor control system.

R.M. Clayton WRC Compliance Upgrade, Atlanta, Georgia

Principal. Design of the $24.8M, 122 mgd upgrade included a heavy-duty grit pumping/removal system, primary clarifiers retrofit, electrical and I&C, odor control, dewatering building, chemical feed and storage, digester, piping, and reinforced concrete.

Education
MBA, Management, Georgia State University, 1995

Graduate Certificate Program, Computer Engineering - Telecom., Air Force Institute of Technology, Wright-Patterson AFB, Ohio 1986-1987

B.S., Computer Science/ Economics, Alabama A&M University, Huntsville, Alabama, 1985

Years of Experience
37

Years at BC
11

BC Office Location
Atlanta

Residence Location
Lithonia, GA

"The success of Gwinnett County has remained a priority for BC for many years. We are committed to delivering the resources, service, and solutions required to achieve your goals on this critical project.

Christopher Haney, P.E.

Wade Trim Principal

Chris's historical knowledge of the facility, biosolids and collaborative delivery expertise, and familiarity with Gwinnet County goals will help guide the team.

Chris is a senior vice president with 28 years of experience in resource recovery, biosolids management, and wastewater treatment. He began working with Gwinnett County in 2001 and led successful completion of work at multiple treatment plants and pump stations. He has first-hand knowledge and experience with the biosolids system and combined heat and power systems at F. Wayne Hill WRC. Chris has supported over 40 collaborative design projects including CMAR valued at over $1.5B and will utilize this experience to lead Wade Trim efforts on this project.

F. Wayne Hill WRC Biosolids Master Plan and Beneficial End Use Study, Gwinnett County DWR, Gwinnett County, Georgia

Contract Manager / Technical Advisor. Chris supported the biosolids master plan and beneficial end use study that looked at new technologies and long-term disposal methods to benefit the County. Options included expanding the digester complex as well as sludge minimization technologies including thermal hydrolysis and biosolids thermal drying. The cost to implement the options were valued in excess of $120M. The County paused on a decision as the digesters were re-evaluated and determined to have additional capacity for short-term needs.

F. Wayne Hill WRC CHP Generator Optimization Study, Gwinnett County DWR, Gwinnett County, Georgia

Technical Advisor. Chris supported the team that evaluated the combined heat and power generators at F. Wayne Hill WRC.

Biosolids Management Strategies, Atlanta DWM, Atlanta, Georgia

Project Manager / JV Board Member. As part of the 50-Year Comprehensive Wastewater Master Plan valued at over $4B, Chris led the team through a $350M biosolids master plan. The plan included detailed evaluations of the

Education
B.C.E., Civil Engineering and Environmental System Design, Georgia Institute of Technology

Registration
Professional Engineer PE028406, Georgia

Years of Experience
26

Years at Wade Trim
4.5 years

Wade Trim Office Location
Gwinnett County

Residence Location
Alpharetta, GA

Professional Affiliations
The Water Tower Research Advisory Committee Member

Georgia Association of Water Professionals

"Gwinnett County DWR provides exceptional customer service and treatment for its constituents, employees, and engineering consultants. Wade Trim's vision is to be the best FOR the best. In forming our team, we looked for a partner who also values client feedback and goes above and beyond to maximize value and overall client experience. Wade Trim and Brown and Caldwell share similar values of client service and accountability. As a team, we will be a tremendous partner to Gwinnett County DWR.

220-MGD RM Clayton, 45-MGD Utoy Creek, and 49-MGD South River WRCs and considered the latest technologies including biosolids drying and thermal hydrolysis for sludge minimization and Class A biosolids. The final recommendation included two new biosolids thermal drying units at RM Clayton and either South River or Utoy WRC.

Guaranteed Energy Savings Performance Contract, Atlanta DWM, Atlanta, Georgia

Principal-in-Charge / JV Board Member. The Atlanta 50-Year Comprehensive Wastewater Master Plan included over $100M in energy conservation measures to lower the City's energy usage and reduce the $600M operational budget. Chris led the energy management planning, capital program development, and worked with the City team and Mayor's office to implement the public / private partnership (P3) contracts and construct these improvements that guaranteed energy savings. The City also utilized this contract for further planning and implementation of a design-build biosolids dryer at RM Clayton WRC based on the recommendations from the Biosolids Management Strategies. Ultimately, the design-build team recommended a Suez belt-dryer which is currently in operation.

Biosolids Facility Progressive Design-Build, Downriver Utility Wastewater Authority, Wyandotte, Michigan

Technical Advisor / Quality Manager. Supported design to reduce solids volume, disposal cost, and environmental impact. The core project added a biosolids dryer system and Class A solids and handling components, including sludge feed pumping, additional centrifuge dewatering equipment, sludge conveyors, and truck load-out facilities.

Atlanta A/E Contract, BGR and BGR 2, City of Atlanta, Georgia

JV Principal / Strategic Advisor / Technical Leader / Project Director / Project Manager. Served the City on two consecutive contracts and over 80 task orders. Provided leadership on the $500M Wastewater Intensification and Resource Recovery Program through the planning, design, or construction management of projects including RM Clayton WRC Headworks, RM Clayton Ostara Nutrient Harvesting, Guaranteed Energy Savings Performance ESCO contracts that included thermal drying, RM Clayton Digester Phase I and II, and South River WRC Primary Clarifiers. Also led the planning of this work in the 50 Year Wastewater Management Plan valued at $4.3B.

Demand Services Category A and I, Gwinnett County DWR, Gwinnett County, Georgia

Contract Manager / Project Manager. Led multiple work authorizations for CIP renewal and replacement projects at the 90-MGD Shoal Creek Water Filter Plant, the 150-MGD Lanier Water Filter Plant, and the 60-MGD F. Wayne Hill WRC. Projects included the F. Wayne Hill WRC Biosolids Master Plan, electronic O&M manuals, HSW valve replacement, and other assignments at Lanier and Shoal Creek Filter Plants and RWPS.

Big Creek Water Reclamation Facility Expansion Construction Management Services, Fulton County, Georgia

Principal in Charge / Technical Advisor. Expanded the facility from 24 MGD to 32 MGD using state-of-the-art membrane bioreactor technology to address current and future anticipated nutrient limits. Other key elements include new screening and grit removal facilities, primary clarification, biological nutrient removal, offline equalization tanks for peak flow management, aerobic digesters, a new solids dewatering facility with high efficiency screw press technology, ultraviolet disinfection, and post-aeration of effluent. The over $300M progressive-design-build facility expansion is the largest single capital project in the County's history.

Central District Wastewater Treatment Plant (CDWWTP) Oxygen Production Facility, Miami-Dade County Water and Sewer Department, Miami, Florida

Mechanical Process QC Reviewer. Provided review for design of a new vacuum-pressure swing adsorption (VPSA) oxygen production system to reduce energy consumption and improve reliability. The system is comprised of two 90-TPD contained oxygen trains to provide full redundancy and reliability for this 143-MGD plant.

George Dick, P.E.

Lead Design Engineer

George is ideal for his role; he has delivered biosolids and energy projects for FWH WRC, has recent dryer and alternative delivery design experience, and has worked closely with BC and WT team members.

George has eight years of experience in wastewater treatment design, including two design-build WRC improvement and expansion projects. He has managed, led, or been responsibly involved in multidiscipline designs for treatment facilities throughout Georgia and the Southeast. George's specialties include biosolids treatment, thermal drying, and optimization of associated processes to improve biosolids product consistency and sustainability and ease of operations.

F. Wayne Hill WRC Combined Heat and Power Generator Optimization, Gwinnett County Department of Water Resources, Georgia

Project Engineer. Provided evaluation for the combined heat and power (CHP) generator. Responsibilities included an analysis of the digester gas generation, gas collection, gas storage, and gas cleaning capabilities along with the maintenance needs of the CHP system. George led the performance evaluation and analyzed the improvements and recommendations for the CHP system including alterations to CHP operations to reduce startup frequency and wear and tear on the generator while providing maximum payback by comparing and evaluating the hourly real-time pricing structure from the local electricity provider to the CHP electricity generation potential.

F. Wayne Hill WRC On-Call Services, Gwinnett County Department of Water Resources, Georgia

Project Engineer. Provided overall project coordination and management support for urgent and emergency work performed by on-call water and wastewater facility equipment repair and maintenance contractors. Responsibilities included developing scopes, evaluating repair and replacement alternatives, reviewing proposals, managing scopes, monitoring schedules, and generally management/coordination of various on-call contractors, sole source contracts, and service providers on annual contract to form a cohesive delivery team for work at FWH WRC. Responsibilities

Education
M.S., Environmental Engineering, University of South Florida, 2015

B.S., Civil Engineering, University of South Florida, 2013

Registration
Professional Engineer, Georgia, PE044868

Years of Experience
8

Years at BC
<1

BC Office Location
Tampa

Residence Location
Tampa

Professional Affiliations
Florida Water Environment Association (Biosolids Committee-Membership Chair, West Coast Chapter Chair)

"I look forward to leveraging my working experience at FWH WRC and on similar dryer systems to deliver a project that meets the needs of plant staff and the goals of the county.

included project closeout activities including updates to fixed assets registry, CMMS, and technical memorandum with future CIP project recommendations.

Dry Creek WRF Headworks and Class A Biosolids Improvements, Metro Water Services, Nashville, Tennessee

Design Engineer. Engineering design services for improvements to the existing headworks and solids handling facility at Dry Creek WRF. George's role focused on upgrades to the solids processing facility, which included a new biosolids building with new centrifuge dewatering, two rotary drum dryer systems, new truck loadout facility, as well as improvements to the facilities biogas conditioning and emergency biogas flare. The system is designed for treatment of 44 wet tons per day.

R.M. Clayton Digester Rehabilitation and Improvements Phase 1, Atlanta, Georgia

Project Engineer. Provided engineering design services for rehabilitation of two of the facility's four 4.3 MG digesters. Oversaw replacement of one floating digester cover, rehabilitation of one digester cover, a new pump mixing system, new biogas conditioning and safety equipment, and replacement of the centrifuge feed system.

R.M. Clayton Digester Rehabilitation and Improvements Phase 2, Atlanta, Georgia

Project Engineer/Owner's Advisor. Developed design criteria package (DCP) for rehabilitation of two of four 4.3 MG digesters. Developed the design improvements and DCP, which included one new floating digester cover, rehabilitation of one digester cover, a new pump mixing system, new biogas conditioning and safety equipment, new boiler heating system and four heat exchangers, improvements to the facilities CHP system, and centrifuge feed system replacement.

R.M. Clayton Noresco Guaranteed Energy Savings Performance Contract-ECM 2 Biosolids Production, Atlanta, Georgia

Project Engineer/Owner's Advisor. Provided technical review for the City's ESCO projects. The ESCO program included three energy conservation measures (ECM). George was involved with ECM 2, which focused on biosolids production and treatment. Reviewed ESCO's drawings and submittals including a new biosolids dryer building, two belt dryers, wet cake conveyance and pumping, hot water heating system dried product storage, and truck loadout facility. Reviewed ESCO proposal including energy savings, chemical consumption, and the project lifecycle cost to assist city with design decisions.

South River WRF Biosolids Upgrades, Atlanta, Georgia

Design/Project Engineer. Provided engineering design for biosolids process upgrades including thickening, anaerobic digesters, dewatering, polymer systems, and truck loadout facility. The design consisted of facilities expansion and design of anaerobic digesters to increase solids retention time to meet future biosolids needs. An upgraded polymer system increases capture rate of solids and cake dryness to deliver consistent biosolids.

R.M. Clayton WRC Energy Management and Sustainability Upgrades, Atlanta, Georgia

Design/Project Engineer. Implemented energy projects at the 120 mgd WRC to approach energy net neutrality for wastewater operations. Projects included biosolids improvements, UV replacement, and process control.

Buckman WRF Biosolids Conversion and Dryer, Jacksonville Electric Authority, Jacksonville, Florida

Project Engineer. Oversaw design of nine projects including new thickening and centrifuge dewatering buildings, new electrical switchgear building, new polymer storage and feed building, new sludge dryer facility and truck loadout, and new warehouse building. Among other duties, George coordinated the sizing, design, and procurement of the rotary drum dryer system.

South Cross Bayou Dewatering System Improvements, St. Petersburg, Florida

Lead Engineer. Provided a state-of-the-art solids dewatering system for improved sustainability, including new centrifuges, conveyance, piping, polymer storage and feed, controls and power distribution, and SCADA interface.

Ken Schnaars, PE

Dryer SME

As technical advisor and reviewer, Ken will collaborate onsite with plant staff, delivering a design that allows the staff who maintain this facility to operate it with ease. During construction, he will continue to support operators through leading onsite training, commissioning, and startup activities.

Ken's nearly 50 years of experience in wastewater treatment design and operations inform his practical perspective on what an efficient, maintainable plant looks like. He brings lessons learned from current experience supporting operators in standing up a new 100 dry ton biosolids facility with rotary drum dryers in Nashville. With an operator-first mindset, Ken will verify that FWH WRC operators' needs are addressed throughout delivery.

Dry Creek WRF Dryer and Headworks, Metro Water Services, Nashville, Tennessee

Operations Specialist. Supported team in evaluation of technical and financial feasibility of implementing a source-separated organics co-digestion program at the 63 mgd Dry Creek WRF and options for upgrading the existing solids processing facility to produce Class A biosolids. Worked with team in site feasibility evaluation and dryer sizing and currently supporting design effort that includes new sludge dryer facility that produces Class A biosolids and is powered by biogas from digesters with a natural gas backup system; a new headworks facility with perforated plate screens and grit removal; odor control improvements for the dryer and headworks facilities; and a complete update to the WRF O&M manual.

Biosolids Dryer Study and Design, City of Auburn, New York

Operations Specialist. Supported team in completing a financial study and alternatives analysis of constructing a biosolids dryer in response to rising landfill disposal costs. Supported design for drum dryer that will enable Auburn to move to a Class A biosolids product, with provisions to address potential PFAS regulations. The city recently initiated a $71M construction project to build the dryer and numerous associated upgrades and repairs the project team designed to improve plant operations.

Education
B.E.T., Civil Engineering, University of Central Florida, 1974

A.S., Sanitary Engineering and Highway Design, University of New York, 1972

Registration
Professional Engineer, No. 29809, Wisconsin, 1993

NCEES, US, 1996

CET, US, 1999

Years of Experience
47

Years at BC
9

BC Office Location
Nashville

Residence Location
Nashville metro

I appreciated the opportunity to support GCDWR's tour of Nashville Metro's Central WRF drum dryer operations. I look forward to working with FWH WRC plant staff throughout this project and helping them prepare to run their new dryer facility safely and efficiently.

Ken Schnaars continued

Central Optimization Project, Metro Water Services, Nashville, Tennessee

Project Engineer/Operations Specialist. Currently serving as project engineer and operations specialist for the optimization of Central WRF, Ken's role is to review contract documents to remove conflicts and to assure operational and maintenance aspects are incorporated into the design. Ken has also prepared MOPOs, construction inspections, assisting in plant commissioning, and conducting operator training programs. This project includes a 350 mgd UV system and modifications at the 100 dry ton biosolids facilities with DAFTs, anaerobic digestion, centrifuges, and thermal drum dryers. The goal of the project is to provide cost effective solutions to maximize treatment capacity while minimizing new construction. The recommendations include both liquid and solid stream processes. The evaluation of the Biosolids Facility is currently in progress and will include improvements to reduce equipment downtime and maximize throughput.

Metro Water Services, Nashville, Tennessee

Operations and Startup Manager. Ken has been working with this client for almost 48 years. Ken has commissioned several large projects at their 125 mgd (adf) Central WRF, the 37.5 mgd (adf) Whites Creek WRF and their 24 mgd (adf) Dry Creek WRF. Ken also wrote Operations Manuals for the for the 1975 and 1991 Whites Creek WRF and the 1978 and 1996 Central Operations Manual. Ken is currently updating the operations manuals at the Central and Dry Creek facilities. Ken also conducted numerous Operator Training programs for Metro's 3 WRF's both for the liquid areas of the plants and solids handling portions of the plants.

Flood Mitigation, Metro Water Services, Nashville, Tennessee

Operations. Ken's role after the floodwaters receded was to help bring the CWWTP Biosolids Facility back online. Leveraging his previous Biosolids Facility work and his knowledge of the Whites Creek and CWWTPs, Ken provided ideas to convert two of the Central aeration tanks into aerobic digesters and provide piping modifications to move aerobically digested sludge to different locations within the plant to feed temporary belt presses until the Biosolids Facility was back online. These temporary modifications kept the plants in compliance until permanent repairs were installed.

Energy/Organics to Energy Program Management, Nashville, Tennessee

Project Engineer/Operations Specialist. Currently serving as project engineer/operations specialist for multiple assignments as part of the Energy Program, Ken's role is to review contract document to remove conflicts and to ensure operational and maintenance aspects are incorporated into the design. Ken is also overseeing the construction aspects of the project, providing start-up assistance and operator training.

Easterly Wastewater Treatment Plant, Cleveland, Ohio

Operations Specialist. Commissioned a 400 mgd aerated grit system that consisted of 4 aerated grit tanks, 20 grit pumps, 20 grit cyclones, 4 grit classifiers, 2 blowers and other equipment. Also conducted operator training of the system providing the plant staff a PowerPoint of the training and other handouts.

Loveland WWTP, Loveland, Colorado

Operations Specialist. Conducted a field investigation of the plant's primary sludge pumping system and anaerobic digestion process. Prepared a field report of the site investigation with recommendations to correct their problems.

McAlpine Secondary Clarifiers Assessment, Charlotte Water, Charlotte, North Carolina

Operations Specialist. Reviewed equipment submittals, such as clarifier equipment, aeration equipment, etc. Also assisted with eOM manual.

Lower North Tygar River RWTP, Spartanburg, South Carolina

Operations Specialist. Oversaw the commissioning of UV system and conducted Operator Training for the new UV system.

Tim Masterson, P.E., DBIA

QA/QC Manager & CMAR Liaison

Tim's CMAR best practices will drive success. A design-build specialist, he recently managed quality or project delivery for six WRC alternative delivery contracts (e.g., $300M Big Creek WRF Expansion).

Tim is an experienced manager, engineer, and construction leader who drives collaboration and quality results. He has led or been responsibly involved with the alternative delivery of more than 20 projects, primarily for the development or improvement of wastewater treatment plants. Tim has been a featured speaker on alternative delivery, including his presentation on PDB of wastewater treatment systems at WEFTEC. As project manager or construction engineering manager, his treatment plant projects have won the DBIA National Excellence Award (R.M. Clayton WRC Headworks, Atlanta) and ACEC/GA Engineering Alliance Honor Award (Stone Mountain Park WTF, GA).

Big Creek WRF Expansion Progressive Design-Build, Fulton County, Georgia

Design Management and QC Lead. $300 million progressive design-build to expand an existing wastewater treatment plant to a 38 mgd MBR facility. Provided project direction to the DB team. Using a PDB approach, the design includes influent screens, vortex-type grit removal systems, double entry-type fine screens, primary clarification basins, biological nutrient removal, membrane bioreactors, UV disinfection, and post-aeration, as well as aerobic digesters and solids dewatering. The DB team completed the guaranteed maximum price (GMP) design deliverable and the project is in construction.

McAlpine Creek WWMF Reliability and Process Improvements Design-Build, Charlotte Water, Charlotte, North Carolina

QC Manager. This project is providing design, permitting, construction and start-up of improvements to the plant's secondary treatment process. In addition, BC is constructing and operating a full-scale pilot to determine the effectiveness of several changes to the secondary process to improve biological phosphorus removal and reduce chemical and power usage. Our team worked hand-in-glove with the owner to develop detailed maintenance of operations (MOPO) plans early in the project. This project includes upgrades

Education
M.S., Civil Engineering, Worcester Polytechnic Institute, 2003

B.S., Civil Engineering, Worcester Polytechnic Institute, 1991

Registration
Professional Engineer, Georgia, PE031330

Design Build Professional, DBIA

Years of Experience
31

Years at BC
9

BC Office Location
Atlanta

Residence Location
Atlanta metro

Professional Affiliations
Georgia Association of Water Professionals (Collaborative Delivery, Program, and Wastewater Treatment Committees)

Water Environment Federation

How will you add value in your role for QA/QC and CMAR project delivery?

My role will allow our team to maintain quality by executing the design plan in collaboration with the CMAR and GCDWR, providing the contractor with design elements on a schedule that maps onto the construction schedule and allows the CMAR to succeed.

to sixteen secondary clarifiers, aeration blower equipment, aeration tank process equipment, and aeration basin reliability improvements.

Biosolids Facility Digesters Rehabilitation, Nashville Metro Water Services, Nashville, Tennessee

Task Manager. Managed development of a design-build package for improvements to four anaerobic digesters. Design components included a new fixed digester cover and draft-tube mixing systems, modifications to three existing fixed covers, electrical distribution and controls system improvements, site work, yard piping and digester gas safety equipment. The design included technical specifications and basis of design drawings for implementation by a design-builder.

Rocky River Regional WWTP Expansion, Water and Sewer Authority of Cabarrus County, Concord, North Carolina

Quality Control. Responsible for technical quality during the design to increase the capacity of this two-stage, high-purity oxygen plant from 26.5 to 34 mgd. The project includes improvements and new facilities for influent pumping, grit removal, flow equalization, sidestream treatment, biological treatment, aeration, secondary clarification, effluent flow metering, thickening, dewatering, and sludge pumping. The project is expected to cost over $115 million to construct.

R.M. Clayton WRC Headworks Improvements Design-Build, Atlanta, Georgia

Construction Engineering Project Manager. Led delivery of engineering services during construction for the 240 MGD, $54M headworks improvements project. Facilities included bar screens and screenings handling, multi-tray grit removal systems and pumping, grit dewatering and associated ancillary mechanical, electrical and control systems. Responsibilities included on-call coordination of shop drawing submittal reviews, RFIs and Designer Clarifications. Led coordination of design team during checkout, startup, commissioning and operations support phases of the project. Provided on-call on-site support for post-design phase coordination. Project earned the 2018 DBIA National Excellence Award.

Lower North Tyger River Reclaimed Water Treatment Facility Expansion and Improvements Design-Build, Spartanburg Water, Spartanburg, South Carolina

Project Manager. Responsible for treatability testing and influent wastewater characterization related to a significant carbon fiber manufacturing facility in the plant's service area. Responsible for execution of final design work and design QA/QC for upgrades to the plant as required by the results of the treatability work. These upgrades include the expansion of the influent pump station and pumping redundancy improvements, influent flow equalization facilities with flushing systems, and the expansion of the UV disinfection system.

Process Water Recycling Facility Design-Build, Bush Brothers & Company, Chestnut Hill, Tennessee

Design Manager. Responsible for delivering the basis of design, preliminary design, and final design of an approximately 1.5 mgd plant that includes influent flow equalization, anaerobic contact treatment, activated sludge biological nutrient removal, membrane bioreactor tertiary treatment and reclaimed water reuse facilities. Other unit processes include DAF solids separation, biogas recovery and reuse, and screw press solids dewatering. Design work includes innovative processes for biogas and effluent water reuse. Responsibilities included design discipline coordination and progress reporting, design review and QA/QC, and maintaining primary design POC with the project manager, procurement team, and construction team leads.

North District WWTP Secondary Clarifier Emergency Design-Build, Miami-Dade Water and Sewer Department, Miami, Florida

Project Manager. Responsible for development of a basis of design report, specifications, and equipment procurement support for upgrades to 12 secondary clarifiers, 3 return sludge pumping stations and ancillary support systems at an 85 mgd wastewater plant. Delivery of the secondary clarifier upgrades was executed on an emergency design-build basis.

Kenneth Hoff, CSP, CHST

Environmental Health and Safety

Ken is a collaborative leader with more than 17 years of experience in environmental health and safety (EHS) program development, and hazard mitigation related to civilian and military projects.

His operations experience includes manufacturing, warehouse, construction, and heavy equipment safety (cranes, loaders). Ken has extensive experience in implementing effective EHS policies and processes, establishing training programs, and executing metrics-based operational decisions. He provides a unique global perspective with a proven ability to operate in high-pressure team environments.

Brown and Caldwell, Health and Safety Program Management

Senior Municipal Safety Management. Responsible for health and safety (H&S) program oversight of BC's three Municipal Business Units (East, West and Cal/Desert). He participates in Prevention through Design (PtD) efforts for active DEP projects, such as PS-DES-4, by reviewing and advising on designs to confirm end user safety. Responsible for the comprehensive review of Field Work Safety Plans (FWSP), EHS Management Plans and control of work permits for municipal water/wastewater projects. He also oversees the management of the Work From Home Ergonomics Plan and coordinates the efforts of the 50+ individuals working for the program. Ken supports teams involved with collaborative delivery, construction/ project management, and design projects by advising on hazard mitigation, subcontractor prequalification, and internal safety requirements. He frequently leads Field Work Safety Training (4 hour) and Hazardous Waste Operations and Emergency Response (HAZWOPER) refresher (8 hour) training for employees that perform operations in the field. Additional responsibilities include reviewing and generating monthly H&S performance indicator reports for distribution to the organization, overseeing the annual review of BC's H&S manual to reflect regulatory and internal policy changes, conducting monthly internal H&S communication meetings with multiple internal teams, and approving business continuity plans for the company. Ken has provided EHS services on several biosolids dryer projects including:

- Dry Creek WRF Dryer and Headworks, Metro Water Services, Nashville, Tennessee
- Biosolids Dryer Study and Design, City of Auburn, New York

Education
B.S., Workforce Leadership (Occupational Training and Development), University of Louisville

Registration
Certified Safety Professional, Board of Certified Safety Professionals

Construction Health and Safety Technician, Board of Certified Safety Professionals

Years of Experience
17

Years at BC
5

BC Office Location
Orlando

Residence Location
Winter Park, FL

John Ross, P.E.

Dryer Specialist

John is a specialist in drying and biogas utilization and is researching the fate of PFAS during thermal treatment. He will help GCDWR build the right facility for today with flexibility for tomorrow.

John specializes in water resource recovery facilities with a focus in residuals management and energy recovery, namely drying and thermal treatment and biogas utilization. He works daily with rotary drum dryers and recently led a comparative study and procurement with the manufacturers of these systems. John is also actively engaged in biosolids and energy research, with active studies to determine the fate of PFAS during thermal treatment of biosolids and to develop a framework for evaluating energy efficiency projects.

Dry Creek WRF Dryer and Headworks, Metro Water Services, Nashville, Tennessee

Dryer Design Lead. Evaluated technical and financial feasibility of implementing a source-separated organics co-digestion program at the 63 mgd Dry Creek WRF and options for upgrading the existing solids processing facility to produce Class A biosolids. Worked with team in site feasibility evaluation and dryer sizing and currently supporting design effort that includes new sludge dryer facility that produces Class A biosolids and is powered by biogas from digesters with a natural gas backup system; a new headworks facility with perforated plate screens and grit removal; odor control improvements for the dryer and headworks facilities; and a complete update to the WRF O&M manual.

Regional Biosolids Drying Facility, Metro Vancouver, British Columbia

Dryer Designer. Supported team in feasibility study of locating a Regional Biosolids Drying (RBD) facility at the 128 mgd Annacis Island WWTP and determining a preferred site. Prepared concept design for the RBD featuring a rotary drum dryer. Metro Vancouver envisions procurement of a Design-Build-Operate contract to deliver and run the proposed facility. The client recently retained BC to update and advance our study and design and to accommodate for an increased capacity of up to 90,000 bulk tonnes per year.

Education
M.S., Civil/ Environmental Engineering, Marquette University, 2014

B.S., Civil/ Environmental Engineering, Marquette University, 2012

Registration
Professional Engineer, Massachusetts, 53742

Years of Experience
10

Years at BC
6

BC Office Location
Detroit

Residence Location
Ann Arbor, MI

Professional Affiliations
Water Environment Federation

Northeast Biosolids and Residuals Association

Midwest Biosolids Association

New England Water Environment Association

"Thermal drying and biosolids are my passion. I've dedicated myself to this practice area to become a trusted advisor to our biosolids drying clients. I'm excited to bring the best of what we have learned as an industry to tailor the design of the Biosolids Dryer Project to FWH WRC.

Biosolids Dryer Study and Design, City of Auburn, New York

Lead Engineer. Performed a financial study and alternatives analysis of constructing a biosolids dryer in response to rising landfill disposal costs. Developed design for dryer that will enable Auburn to move to a Class A biosolids product, with provisions to address potential PFAS regulations. The city recently initiated a $71M construction project to build the dryer and numerous associated upgrades and repairs the project team designed to improve plant operations.

Deer Island Treatment Plant Rotary Drum Dryer Evaluation, Massachusetts Water Resources Authority, Boston, Massachusetts

Project Manager. Led benchmark study of the operational efficiency of the rotary drum dryers serving DITP, which has a peak capacity of 1,200 mgd. Provided comparisons to the recently constructed Great Lakes Water Authority Biosolids Dryer in Detroit. The study helped MWRA confirm continued investment in their dryer over a 20-year planning horizon and identified multiple short- and medium-term opportunities for optimization.

Bio-Energy and Thermal Drying Design-Build, City of Montpelier, Vermont

Dryer Lead. Design services for implementation of a new bioenergy program. Responsible for design of the imported organic wastes receiving, upgrades to the anaerobic digesters, biogas management and a follow-on dryer feasibility study with alternatives analysis and a preliminary engineering report.

Biosolids Dryer and Waste Heat Recovery Preliminary Engineering, Lewiston-Auburn Water Pollution Control Authority, Lewiston, Maine

Dryer Lead. Evaluated technical and economic feasibility of installing three different belt dryer types at a 12 mgd avg. flow WRRF. Project considered future phasing of a pyrolysis system for PFAS control, incorporating biogas and CHP operation into the dryer project, and separately upgrading biogas for pipeline injection. Conducted biosolids end use market outreach to assess impact of Maine DEC PFAS screening standards on management options and identify viable beneficial use outlets for dried product. Project has advanced through preliminary design and is being supported by Efficiency Maine for its potential to optimize CHP with thermal drying.

Biosolids Drum Dryer and Gasifier Design, Derry Township Municipal Authority, Hershey, Pennsylvania

Lead Engineer. BC and DTMA recently completed a comprehensive biosolids master plan that recommended drum drying and gasification for biosolids management. Work is being delivered under the PA COSTARS program to reduce procurement costs, provide construction cost certainty and increase collaboration to manage risks from implementing an innovative technology.

Water Research Foundation Project #5111 Fate of PFAS Through Sewage Sludge Incineration (SSI)

Researcher. Thermal treatment of PFAS-laden wastewater solids through sewage sludge incinerators (SSIs) offers a potential PFAS control strategy; however, with few published research studies available, the ability of SSIs to fully destroy PFAS is unknown. This study aims to evaluate the fate of PFAS compounds through SSIs and provide utilities with an indication of the extent to which SSIs can eliminate or reduce PFAS emissions. John is serving as a primary researcher and will develop sampling and analytical plans, assess data, and generate project reports and presentations.

Water Research Foundation Project #5091 Developing a Framework for Quantifying Energy Optimization Reporting

Co-Principal Investigator. The broad objective of this project is to increase confidence in the economic feasibility and energy reduction impact analyses used by water and wastewater utilities to determine whether to proceed with energy efficiency projects. John is investigating forecasted and actual energy savings from completed projects to inform development of an improved and standardized framework for future economic feasibility evaluations and post-construction measurement and verification of energy performance.

Ted Hull, P.E., LEED AP

Process Mechanical Lead

Combining expertise in biosolids, biogas, and alternative delivery, Ted is the ideal candidate to lead this team's process mechanical engineering design services. He will play a key role in integrating the new dryer into FWH WRC operations and facilities.

Ted's experience is focused in the design, bidding, construction, and startup of wastewater treatment systems, including design-build delivery of new facilities. Ted knows biogas, whether in biogas-gas-fired cogeneration systems or renewable natural gas production for vehicle fuel. He also managed the development of an innovative patented anaerobic digestion process and the preliminary design of one of the largest digestion facilities in the country.

Dry Creek WRF Dryer and Headworks, Metro Water Services, Nashville, Tennessee

Senior Reviewer. Supporting team in upgrading the existing headworks and solids processing facility to produce Class A biosolids at the 63 mgd Dry Creek WRF. Reviewed design effort that includes new sludge dryer facility that produces Class A biosolids and is powered by biogas from digesters with a natural gas backup system; a new headworks facility with perforated plate screens and grit removal; odor control improvements for the dryer and headworks facilities; and a complete update to the WRF O&M manual.

Biosolids Upgrade and Dryer Project, Auburn, New York

Senior Reviewer. Provided QA/QC for deliverables and ongoing senior design input for project including new manufactured Lipp digesters and belt-type sludge drying.

Big Creek WRF Expansion. Fulton County, Georgia

Project Engineer. Developed a solids processing business case evaluation for continuing aerobic digestion or converting to anaerobic digestion and biogas use. Senior review for QA/QC of new sludge dewatering facilities.

Education
M.S., Environmental Engineering, The University of North Carolina at Chapel Hill, 1996

B.S., Civil Engineering, Duke University, 1994

Registration
Professional Engineer Georgia, PE025482

LEED Accredited Professional, USGBC

Years of Experience
27

Years at BC
27

BC Office Location
Atlanta

Residence Location
Atlanta

How will you integrate the new dryer at FWH WRC?

The new biosolids dryer facility should be developed with the objective of complementing and advancing the overall facilities and operations of FWH WRC. I look forward to working with GCDWR, our Lead Design Engineer, and other team members to achieve this objective.

Ted Hull continued

Dryer Replacement Project, Rensselaer County, New York

Design manager. Completed 100% design and provided office engineering and startup assistance for replacement of existing solids dryer with a new paddle dryer heated with hot thermal oil.

Piscataway PDB Bioenergy Program, Washington Suburban Sanitary Commission, Accokeek, Maryland

Project Engineer. Alternatives and economic analysis for the biogas program for new $271M regional solids-processing facility with thermal hydrolysis-based digestion system. Conceptual design, program management, technical reviews and utility negotiations for a renewable natural gas production and combined heat and power facility implemented through progressive design-build.

R.M. Clayton WRC Headworks Improvements, City of Atlanta, Atlanta, Georgia

Grit Area Process Mechanical Lead. Design-build implementation of replacement screens and a new multi-tray grit removal and grit dewatering facilities with 320 mgd hydraulic capacity for this 122 mgd plant.

President Street WRF Biosolids Handling Facilities, City of Savannah, Georgia

Project Manager. Design of a new Class A temperature-phased (TPAD) anaerobic digester facility, conversion of gravity thickeners to dissolved air flotation, and a new dewatered sludge truck loading system for this 27 mgd plant.

South District WWTP Cogeneration System, Miami-Dade Water & Sewer Department, Miami, Florida

Process/Mechanical Engineer. Provided design, office and field engineering for the design-build delivery of a replacement cogeneration system including four 2 megawatt Cummins engine generators. The system includes digester and landfill gas treatment, natural gas blending for supplemental fuel, and hot thermal oil heat recovery for use in an absorption chiller and for sludge drying.

Mauldin Road WWTP Cogeneration System, Renewable Water Resources, Greenville, South Carolina

Lead Process Mechanical Engineer. Designed cogeneration facility based on containerized 800-kilowatt engine generator system. Assisted Owner with pre-purchase of generator equipment package and prepared general contractor installation bid package. Provided office engineering, construction management and startup/troubleshooting services for a fast-track construction completed in 6 months to meet an ARRA grant funding deadline.

Cedar Creek WRF, Athens-Clarke County, Georgia

Lead Process/Mechanical Engineer. Lead the process/mechanical design in 3D AutoCAD of a new 4 mgd wastewater treatment plant, including self-cleaning submersible pump station, fine screening and grit removal, biological nutrient removal secondary process, UV disinfection, aerated sludge holding and centrifuge dewatering. Developed hydraulic model for the facility.

Lynchburg Regional WWTP, Lynchburg, Virginia

Project Engineer. Preparation of biosolids master plan for long-term planning purposes. Plan included feasibility, site layout, and life-cycle cost analyses for options including anaerobic digestion, thermal processing, composting, and landfill disposal. Plan included dewatering options and system upgrades for Class A treatment and sidestream treatment technologies.

Blue Plains AWTP, District of Columbia Water and Sewer Authority, Washington, DC

Project Engineer. Managed digestion process selection and preliminary design, as well as determined design loading for new, egg-shaped digester facility for the Blue Plains AWTP. The project considered options for digesters to produce Class B biosolids with alternatives to move to Class A and operate under a variety of digestion process regimes.

Gary Emmel, P.E.

Sludge Conveyance Engineer

Gary's process engineering knowledge and extensive local project experience will help him design an optimal system for the facility's goals and operations.

Gary has a rich history in managing and delivering task order-based contracts for Gwinnett County as well as large pump station projects. His experience includes project management of water and wastewater treatment facilities and pump stations, process design, preparation of mechanical and instrumentation specifications, and start-up and commissioning services.

Big Creek WRF Immediate Needs Upgrades, City of Roswell, Georgia

Senior Process Engineer. Supported start-up and commissioning for the project. The project included upgrading the existing diffused aeration system and converting the biological process to a step-feed operation. Replacements included four secondary clarifier mechanisms, scum removal systems, and RAS pumps. New blower controls for aeration and aerobic digestion, a ferric chloride feed facility, polymer and lime systems, and the replacement of thickening and dewatering systems with new rotary drum thickeners and new belt filter presses with cake pumping were also included in the project scope. BioWIN modeling will be utilized for process modifications and to confirm the ability to meet current and future total phosphorous limits at 48-MGD peak flow conditions.

Construction Management Services for Big Creek Water Recovery Facility Expansion, City of Atlanta, Georgia

Senior Process Engineer. Supported start-up and commissioning engineer for the biosolids improvements which expand the facility from 24 MGD to 32 MGD using state-of-the-art membrane bioreactor technology to address current and future anticipated nutrient limits. Other key elements include new screening and grit removal facilities, primary clarification, biological nutrient removal, offline equalization tanks for peak flow management, aerobic digesters, a new solids dewatering facility with high efficiency screw press

Education
B.E.M.E., Mechanical Engineering, University of Dayton

Registration
Professional Engineer PE030326, Georgia

NCEES Record

Years of Experience
40

Years at Wade Trim
2.5 years

Wade Trim Office Location
Gwinnett County

Residence Location
Peachtree City, GA

Professional Affiliations
Georgia Association of Water Professionals

Water Environment Federation

How will you address the site needs and challenges for sludge conveyance?

Design of sludge conveyance systems must consider multiple factors, including input from the county's plant staff. Our team will work with GCDWR and the CMAR contractor to assess alternatives for sludge conveyance to each of the potential locations, including rheology, pump, piping, polymer, controls, and potential for existing centrifuge relocation.

Gary Emmel continued

technology, ultraviolet disinfection, and post-aeration of effluent. The $300M-plus progressive-design-build facility expansion is the largest single capital project in the County's history.

Demand Services Category F Facilities, Gwinnett County DWR, Georgia

Senior Project Manager/Senior Process Engineer. Led and supported multiple work authorizations for CIP renewal and replacement projects at the 60-MGD F. Wayne Hill WRC and the 150-MGD Lanier Water Filter Plant. The work consisted of wastewater tertiary membrane system hydraulic analysis, chemical feed systems, review and recommendations for the biogas compressors for co-generation, filter pipe gallery rehabilitation, isolation gate replacement program, raw water intake HVAC improvements, and clearwell evaluation.

Demand Services Category I CM and Urgent Services, Gwinnett County DWR, Georgia

Senior Project Manager/Senior Process Engineer. Led and supported multiple work authorizations for CIP renewal and replacement projects at the 90-MGD Shoal Creek Water Filter Plant and the 150-MGD Lanier Water Filter Plant.

Central District Wastewater Treatment Plant (CDWWTP) Oxygen Production Facility, Miami-Dade County Water and Sewer Department, Miami, Georgia

Senior Process Engineer. The County's existing cryogenic oxygen production system at the CDWWTP was beyond its useful life and the technology had become antiquated and inefficient. In the interest of reducing energy consumption and improving reliability, a new vacuum-pressure swing adsorption (VPSA) oxygen production system will be installed. The system will be comprised of two 90 TPD contained oxygen trains to provide full redundancy and reliability for this 143-MGD plant.

Lanier Raw Water Pump Station Upgrade, Gwinnett County, Georgia

Project Manager. Prepared and managed the design, bidding, and construction of the pump station upgrade to 150 MGD, including six new 2,000hp 4,160-volt pumps, motors, solid-state reduced voltage starters, 30-inch pump control valves, controls, and all required ancillary systems. The project also includes the replacement and upgrade of all mechanical and electrical equipment. Responsible for calculating the hydraulics of the force mains to the treatment plants and established the pump requirements. Managed and assisted in the preparation of a report to establish the economic differences between 2,000hp medium voltage synchronous motors and induction motors. Managed and coordinated the disciplines in the design, and prepared sketches for the mechanical, instrumentation, and control design. Verified the design documents, assisted the client with bidding, and managed the construction and inspection.

Lanier Water Filtration Plant Safety Air Scour Upgrade, Gwinnett County DWR, Georgia

Project Manager. Prepared and managed the design, bidding, and construction of a filter air scour blower upgrade and filter gallery lighting upgrade project for this 150-MGD water treatment plant.

Lanier Water Filtration Plant Gas Chlorination Replacement BCE, Gwinnett County DWR, Georgia

Project Manager. Manage a business case evaluation (BCE) for alternatives to the existing gas chlorination for disinfection of the finished water.

Beaver Ruin Pump Station, Gwinnett County DWR, Georgia

Project Manager. Managed the design of a 30,000-gallon surge tank with compressors and compressor building for the wastewater pump station.

East Park Place Pump Station, Gwinnett County DWR, Georgia

Project Manager. Evaluated the need to upgrade the pump and generator capacity and the addition of an emergency storage tank. Reviewed flow data and prepared pump station calculations. Sized emergency storage tank and managed the project to design a below-grade concrete storage tank.

Jeff Reynhout, P.E.

Sludge Conveyance

Jeff's wastewater treatment expertise was gained at WTPs with capacities up to 1,700 mgd.

Jeff is a process engineer attentive to operator-friendly designs and good equipment selection. He embraces the concept that in addition to achieving regulatory requirements, treatment processes must be practical to operate and maintain. Much of his wastewater treatment experience has involved designing and constructing improvements and additions to existing facilities with minimal impact on day-to-day operations of the plant. He has led the process design for treatment improvements or new plants at 16 wastewater treatment plants ranging from 35,000 GPD to 14-million GPD.

Biosolids Dryer Facility, Great Lakes Water Authority, Detroit, Michigan

Process Engineer. As a subconsultant to NEFCO and Daniel O'Connell's Sons, Wade Trim was part of the lead design team for a new biosolids dryer facility at the Water Resource Recovery Facility (WRRF) in Detroit. The $680M design-build-operate-maintain contract will improve solids handling to the plant with a wet weather treatment capacity of 1.7 billion gallons per day over the 23-year contract period. Wade Trim assisted with project management; performed civil/site, sludge pump/force main and structural foundation design; led the complex permitting process and provided resident construction engineering and QA/QC inspection services.

Biosolids Facility Progressive Design-Build, Downriver Utility Wastewater Authority, Wyandotte, Michigan

Process and Mechanical Engineer. Responsible for process mechanical equipment design for new and modified facility layout, sludge pumping, and dewatering equipment including coordinating unit processes to all process equipment. Leading design of modifications to the industrial water system, drains, compressed air, sludge pumping, dewatering, cake and biosolids conveyance, offloading, and dust control. The progressive design-build project involves designing, installing, and commissioning a thermal biosolids drying system with an additional centrifuge and extensive modifications to existing facility building systems.

Brush Creek WWTP Solids Process and Handling Upgrades & Improvements, Western Westmoreland Municipal Authority, Pennsylvania

QA/QC. Performed bidability/constructability reviews and provided QA/QC for the anaerobic digester rehabilitation, solids dewatering, waste-activated sludge system, and laboratory facilities improvements for this 4.4-MGD facility.

Education
B.S., Civil Engineering, Michigan Technological University

Registration
Professional Engineer, 6201027646, Michigan

Years of Experience
47

Years at Wade Trim
19.3 years

Wade Trim Office Location
Detroit

Residence Location
Detroit

Jason Wiser, P.E.

Biogas/Energy Recovery SME

Jason authored an EPA guidance manual on biogas (WRC digester gas) systems and designed a biogas system for the country's largest advanced WRC (Blue Plains, DC Water). His leading insight will help GCDWR increase biogas utilization.

Jason is a civil and environmental engineer with significant experience designing biogas treatment and combined heat and power (CHP) systems. Jason's other professional interests and areas of expertise include biosolids treatment and disposal.

Regional Biosolids Drying Facility, Metro Vancouver, British Columbia

Biogas Specialist. Supported team in feasibility study and concept design of locating a Regional Biosolids Drying (RBD) facility at the 128 mgd Annacis Island WWTP and determining a preferred site. BC evaluated several different uses of AIWWTP biogas and over 10 scenarios that looked at fueling the CHP system, biogas upgrading for sale to the natural gas utility, the process heating boilers, and the dryer. We looked at greenhouse gas emissions, revenue generation and lifecycle costs to determine the optimal way to fuel the dryer and the plant. Metro Vancouver envisions procurement of a Design-Build-Operate contract to deliver and run the proposed facility. The client recently retained BC to update and advance our study and design and to accommodate for an increased capacity of up to 90,000 bulk tonnes per year.

Biosolids Dryer Study and Design, City of Auburn, New York

Biogas Specialist. Supported a financial study and alternatives analysis of constructing a biosolids dryer in response to rising landfill disposal costs. Supported design for dryer that will enable Auburn to move to a Class A biosolids product. The dryer will use biogas as the primary fuel source and dramatically reduce natural gas cost and climate impact. The city recently initiated a $71M construction project to build the dryer and numerous associated upgrades and repairs the project team designed to improve plant operations.

Timpanogos Special Service District, American Fork, Utah

Facility Design Lead. The facility is adding new anaerobic digesters to the site and will convert the digester gas to RNG for sale to the local natural gas utility. Jason is leading the design of the new digester gas upgrading system. Design efforts include evaluating and pre-selecting the digester gas upgrading system upon which the design will be based.

Education
M.S., Civil and Environmental Engineering, University of Utah, 2006

B.S., Civil and Environmental Engineering, University of Utah, 2002

Registration
Professional Engineer Georgia, PE025482 (inactive); Arizona, 54084

NCEES, 35500

Years of Experience
20

Years at BC
18

BC Office Location
Phoenix

Residence Location
Phoenix

Professional Affiliations
Water Environment Federation

Arizona Water Association Biosolids Committee

Kaw Point WWTP Biosolids Improvement DB, Unified Government of Wyandotte County/ Kansas City, Kansas

Gas Handling/Flare SME. Engaged on BC team that served as engineer of record to provide biosolids improvements at the 28 mgd permitted capacity Kaw Point WWTP. UG initiated the project to evaluate producing Class B biosolids suitable for land application due to unpredictable landfill disposal fees and strict hauling regulations. The project was envisioned to be designed and constructed in two phases using a progressive design-build (PDB) delivery method. In Phase One, the DB team evaluated biosolids improvement alternatives, produced a Basis of Design Report (BODR), and prepared a 60% design for the development of a guaranteed maximum price (GMP) proposal.

Orange County Sewer District Plants 1 and 2 Digester Gas System Upgrades, Orange County, California

Senior Technical Advisor. The County operates two large wastewater treatment plants, each with several anaerobic digesters. The digester gas conveyance systems at both plants were modelled with AFT Arrow software to analyze pressure profiles throughout the piping networks. This effort was performed in support of the design to upgrade new waste gas burners and compression systems. Piping systems modifications were designed to improve system performance and ensure adequate pressure is available at the inlet of the waste gas burner and compression systems.

King County South Plant Biomethane Upgrading, Seattle, Washington

Process-Mechanical Design Lead. Designed a new 1500 scfm membrane-based biogas upgrading system to replace the old and outdated water solvent system. System was designed such that the product gas complies with Puget Sound Energy natural gas quality standards and is suitable for injection into the natural gas pipeline. The biogas upgrading system is based on two-stage membranes by Air Liquide. The new biogas upgrading system design includes hydrogen sulfide, moisture, and siloxane removal systems.

Blue Plains AWWTP Digester Gas System Design, DC Water, Washington, DC

Project Engineer. As part of BC's program management team, developed preliminary design of digester gas management system. Served as the technology review manager as the project moved through design into construction. The system includes a complete digester gas treatment system, including a regenerative adsorptive media-based siloxane removal system with a siloxane oxidizing flare. The CHP facility includes state of the art combustion turbines that convert the treated digester gas to steam and electric power. The turbines produce nearly 14 MW of renewable power while simultaneously meeting the entire steam demand for the plant's new thermal hydrolysis process. The CHP Facility project was delivered by the design-build-own-operate (DBOO) model.

Central Valley Water Reclamation Facility CHP System Design, Salt Lake City, Utah

Design Manager/Project Engineer. The Owner has operated a CHP facility for over 30 years and due to reliability and redundancy concerns desired to replace existing engine-generators with new high efficiency and cleaner burning units. Assisted the Owner in evaluating candidate engine models and the pre-purchase of the selected units. Managed the design of the new CHP facility, including power generation, heat recovery, digester gas treatment, and emergency waste gas flaring. The new CHP facility will have an installed power generation capacity of over 7 MW.

Oceanside Wastewater Treatment Plant Digester Gas Treatment System Design, San Francisco, California

Senior Technical Advisor. A new digester gas-fueled CHP is being designed and constructed to improve onsite electric power generation and reliability. A new digester gas treatment system is being designed to support a new digester gas-fueled CHP facility. Served as technical advisor overseeing the design of the new digester gas treatment system, which includes new moisture removal, pressure boosting, and siloxane removal systems, as well as a new low pressure, dry seal type digester gas storage unit.

Nancy Andrews, P.E.

Biogas/Energy Recovery SME

Drawing on her decades of project experience and national research, Nancy will merge sustainability considerations with economic analysis to identify design solutions that meet GWDC's goals.

For the past 25 years, Nancy has focused on the design of wastewater treatment systems, with a focus on energy and financial and environmental sustainability. She has been active in assisting clients with aeration systems, biogas utilization, and biosolids processing alternatives evaluations. In recent years, Nancy has performed national and regional research on treatment plant energy efficiency, recovery, optimization, and net zero energy attainment.

Dry Creek WRF Dryer and Headworks, Metro Water Services, Nashville, Tennessee

Energy Specialist. Supported team in evaluation of technical and financial feasibility of implementing a source-separated organics co-digestion program at the 63 mgd Dry Creek WRF and options for upgrading the existing solids processing facility to produce Class A biosolids. Worked with team in site feasibility evaluation and dryer sizing and currently supporting design effort that includes new sludge dryer facility that produces Class A biosolids and is powered by biogas from digesters with a natural gas backup system; a new headworks facility with perforated plate screens and grit removal; odor control improvements for the dryer and headworks facilities; and a complete update to the WRF O&M manual.

Biosolids Dryer Study and Design, City of Auburn, New York

Energy Specialist. Supported team in completing a financial study and alternatives analysis of constructing a biosolids dryer in response to rising landfill disposal costs. Supported design for drum dryer that will enable Auburn to move to a Class A biosolids product, with provisions to address potential PFAS regulations. The city recently initiated a $71M construction project to build the dryer and numerous associated upgrades and repairs the project team designed to improve plant operations.

Developing a Framework for Quantifying Energy Optimization, Water Research Foundation

Principal Investigator. Nancy led research intended to increase confidence in the economic feasibility and energy reduction impact analyses that are used by water and wastewater utilities to determine whether to proceed with projects. Investigation of the forecast and actual energy savings from completed projects informed development of an improved and standardized framework for future economic feasibility evaluations and post-construction measurement and verification of energy performance.

Education
M.S., Civil Engineering, University of Minnesota, 2000

B.S., Mechanical Engineering, Washington University, 1983

Registration
Professional Engineer Minnesota, 21791

Years of Experience
39

Years at BC
23

BC Office Location
Saint Paul

Residence Location
Minneapolis–Saint Paul area

Professional Affiliations
Water Environment Federation (Residuals and Biosolids Carbon Emissions Task Force)

Raymond Johnson II, P.E., LEED AP *(WA)*

Building Mechanical

Ray brings more than 35 years of HVAC design and project management experience to his role. He possesses a breadth of knowledge and understanding of the critical issues related to the installation and operation of HVAC systems.

Ray's expertise includes large, chilled water and high pressure steam physical plants through commercial, educational, institutional, and health care facility designs. His experience also includes process control and SCADA system designs for the municipal water and wastewater market.

Lanier Filter Plant, Chemical Building, Gwinnett County Department of Water Resources, Georgia

QA/QC Support. The Brown and Caldwell team is in the process of designing the new chemical building for the Lanier Filter Plant and Wendel is providing the architecture and facility engineering services. The object is to develop an aesthetic for the campus that can be easily applied to other buildings on site through the use of selective materials and colors.

Operations and Maintenance Facility, Augusta Public Transit Department, Augusta, Georgia

Senior Mechanical Engineering and Commissioning. Wendel provided architecture and engineering services for the design and construction of a new operations and maintenance facility housing 40 buses, as well as provide for future expansion. The facility space program was prepared in cooperation with Augusta Public Transit. All maintenance services, operations and administration functions are now housed in a contiguous building located closer to the core operations. Wendel also provided site selection and master planning services as part of the design work.

M&T PLC Tier III Data Center, Erie County, New York

Project Manager and Mechanical Engineer. M&T Bank purchased an existing 5MW data center to meet its long-term IT requirements. The facility includes two data wings totaling approximately 27,000 square feet of raised floor space and support spaces. Wendel provided the analysis and design to bring the facility up to full Tier III conformance while improving the facility's energy performance. The analysis and design focused on the state-of-the-art air conditioning and electrical equipment and systems. These systems included: Hot Isle Containment, VFD CRAC Units, Water Side Economizers and High-Efficiency UPS's. The HVAC and electrical system infrastructure modifications were designed to allow for Tier III compliance.

Education
BT, Mechanical Engineering, SUNY Buffalo State College

AAS, Engineering Technology, Erie Community College

Registration
Professional Engineer Georgia, PE038409

LEED Accredited Professional

Years of Experience
38

Wendel Office Location
Williamsville, NY

Residence Location
Buffalo

Professional Affiliations
National Fire Protection Association

Niagara Frontier Chapter of America (former President)

Floyd Keels, P.E. *(SLK)*

Electrical Lead

Floyd brings extensive electrical engineering experience at FWH WRC to this project.

Mr. Keels electrical engineering experience includes design of power distribution, lighting, low voltage systems, fire protection, communications networking and security for government facilities, educational, industrial, healthcare, retail, restaurants, and banks. He is a registered professional engineer in 23 states and is a licensed unrestricted electrical contractor in the state of Georgia.

F. Wayne Hill Water Reclamation Center Post Ozone MCC Replacement, Gwinnett County Department of Water Resources, Georgia

Electrical design and construction administration services for replacement of two MCC's at the Post Ozone Facility. Included SCADA modifications for plant control and monitoring of each MCC by plant operations.

F. Wayne Hill Water Reclamation Center Effluent Pump Testing, Gwinnett County Department of Water Resources, Georgia

Electrical testing of all motors, grounding, VFD's and cables for resolving plant issues and life span expectations of all equipment.

F. Wayne Hill Water Reclamation Center Boiler Replacement Project, Gwinnett County Department of Water Resources, Georgia

Electrical and Instrumentation Control design and construction administration services for replacement of three Gas Fired Boilers at the Biosolids Facility. The improvements Included all electrical design, equipment upgrades, and I&C design.

Education
B.S., Electrical Engineering, Georgia Institute of Technology

B.S., Mathematics, Morehouse College

Registration
Professional Engineer Georgia, PE035071

Electrical Contractor Georgia, EN215340

General Contractor GCQA006648

Years of Experience
23

S. L. King Office Location
Atlanta

Residence Location
Atlanta

Based on your recent work at FWH WRC, what are the key electrical needs you will address for the new dryer facility?

Having worked as the Engineer of Record on projects at the plant, I and my team bring a knowledge of the facility. I am excited to build upon all we have done with Gwinnett. Together, we have put into place practices that advance quality and consistency for GCDWR.

Floyd Keels continued

F. Wayne Hill Water Reclamation Center Centrifuge Testing, Gwinnett County Department of Water Resources, Georgia

Electrical testing of all motors, grounding, VFD's and cables for resolving plant issues with all Centrifuges.

Hartsfield-Jackson Atlanta International Airport, Concourse C Renovations, City of Atlanta, Georgia

The renovation included redesign of power distribution, lighting, fire alarm systems and electrical security systems.

Hunter Army Airfield Taxiway Sign Modification, United States Army Corps of Engineers, Savannah, Georgia

The modification involved the complete replacement of the taxiway lighting system at Hunter Airfield. The scope included but was not limited to the demolition of the existing lighting, wiring, controls and regulators.

Robins Air Force Base Indefinite Delivery, Indefinite Quantity Contract, U.S. Department of Defense, Houston County, Georgia

The services provided included fire alarm systems replacement, assessments and recommendations for energy sources, system types, control systems, energy efficiencies, HVAC, fire suppression system, roof design, office renovation, area lighting.

Boeing 40-58 Composite Wing Fabrication Center The Boeing Company, Everett, Washington

Provided the design engineering and construction administration services for the Boeing 40-58 Building which supports Boeing's Composite Wing Manufacturing process. The building footprint is approximately 1.2 million square feet, with two mezzanine levels of office/engineering support space totaling approximately 187,000 square feet.

Waine Pittman *(SLK)*

Electrical

Waine brings extensive electrical engineering experience at FWH WRC to this project.

Waine's experience has primarily been with water and wastewater treatment facilities, including electrical and P&ID designs and inspection of facilities and instrumentation systems. His knowledge extends to architectural, lighting, and power layouts; riser and single-line diagrams; and schedule and wiring diagrams. Waine is adept at developing schedules, systems, startup/commissioning plans, and standard operating procedures and providing hands on testing, troubleshooting, and operations assistance.

F. Wayne Hill Water Reclamation Center Post Ozone MCC Replacement, Gwinnett County Department of Water Resources, Georgia

Electrical design and construction administration services for replacement of two MCC's at the Post Ozone Facility. Included SCADA modifications for plant control and monitoring of each MCC by plant operations.

F. Wayne Hill Water Reclamation Center Effluent Pump Testing, Gwinnett County Department of Water Resources, Georgia

Electrical testing of all motors, grounding, VFD's and cables for resolving plant issues and life span expectations of all equipment.

F. Wayne Hill Water Reclamation Center Boiler Replacement Project, Gwinnett County Department of Water Resources, Georgia

Electrical and Instrumentation Control design and construction administration services for replacement of three Gas Fired Boilers at the Biosolids Facility. The improvements Included all electrical design, equipment upgrades, and I&C design.

F. Wayne Hill Water Reclamation Center Centrifuge Testing Project, Gwinnett County Department of Water Resources, Georgia

Electrical testing of all motors, grounding, VFD's and cables for resolving plant issues with all Centrifuges.

R. M. Clayton Water Reclamation Center Biosolids Project, City of Atlanta, Georgia

Construction administration services for new biosolids treatment at the Dryer facility at R. M. Clayton WRC. The improvements include addition of biosolid upgrades, 2 new Dryers, Sludge Pumps, Cooling Towers, and Collections systems. Managed and performed all start-up activities, produced the Standard Operating Procedures, and assisted the plant staff with Operations assistance.

Education
Electrical Design course work, Southern Technical Institute

Registration
MCSE Training
Windows NT 4.0 US Navy Nuclear ET

OSHA-30 Certified

Years of Experience
29

S. L. King Office Location
Atlanta

Residence Location
Villa Rica, GA

John Diedrich, P.E.

Instrumentation and Controls (I&C)

John brings over 40 years of experience in design, process control, and field engineering of electrical and instrumentation and control systems to this project.

His experience includes industrial and municipal water and wastewater treatment electrical, instrumentation, automation, networking, process control, supervisory control and data acquisition (SCADA) systems, low and medium voltage variable speed drive (VFD) systems, and low and medium voltage power design, construction inspection, systems startup, flood recovery, flood repair and forensic investigation.

Big Creek WRF Expansion, Fulton County, Georgia

Electrical and I&C Quality Control. Progressive design-build expansion for the existing water reclamation facility from 24 mgd to 38 mgd. Expansion includes the design of 12kV, 3-phase onsite distribution systems with 480V, 3-phase distribution and motor controls systems for electrical design, and a completely new on site SCADA, fiber network, and complete instrumentation and controls system for the expansion, which included new membrane bioreactors (MBRs), headworks, primary clarifiers, fine screening, chemical facility, UV facility, post-aeration (all new and at full plant capacity), retrofit of existing facilities to provide equalization, and major solids handling upgrades.

Arc Flash Electrical Safety Program, Gwinnett County Department of Water Resources, Georgia

Project Manager and Technical Director. Led a comprehensive $4.3M Electrical Safety Program, which began in 2010 when the Gwinnett County Department of Water Resources initiated life safety assessments at all facilities in response to continuing changes in the National Electrical Code (NFPA 70) and the Standard for Electrical Safety in the Workplace (NFPA 70E) emphasizing arc flash hazards, personnel safety and equipment protection coordination. This program included electrical safety plan (ESP) development, short circuit fault analysis studies, protective device coordination studies, arc flash hazard studies, arc flash labeling, arc flash and electrical safety training development, facility electrical safety improvements, safety operating procedures development and training, developing adequate job descriptions and defining qualified personnel, maintenance and testing program, construction management, development of CMMS and asset management, condition assessment and life expectancy, development of Arc Flash Information Management Procedure, additional motor power monitoring and development of Wi-Fi Access to SCADA and QA/QC, support and review for other projects and compliance reporting for OSHA with NFPA 70E.

Education
B.S., Electrical Engineering, Michigan Technology University, Houghton, Michigan, 1982

A.S., Electromechanical Engineering Technology, Michigan Technology University, Houghton, Michigan, 1980

Registration
Professional Engineer Georgia, PE024524

Years of Experience
41

Years at BC
18

BC Office Location
Atlanta

Residence Location
Atlanta

Professional Affiliations
Instrument Society of America

Brian Williams, P.E.

Instrumentation and Controls (I&C)

Brian brings a detailed understanding of GCDWR systems and standards to his role from his extensive work at Gwinnett treatment and pumping facilities.

Brian is a senior I&C engineer at BC with more than 15 years of experience in all facets of the controls industry. He has extensive experience leading I&C projects from design, through implementation and startup, and to commissioning in a variety of industries, including municipal water and wastewater treatment, pharmaceutical, food and beverage, oil and gas, and specialty chemical. Brian is highly proficient in SCADA, PLC, and DCS programming with certifications from Wonderware and Inductive Automation.

SCADA Operational and Capital Program As-needed Support, Gwinnett County Department of Water Resources, Georgia

Project Manager. Brian leads as-needed technical support work for the county's SCADA operations and capital program. His team has performed several task orders involving troubleshooting, diagnostic, programming, and engineering services for various needs. Recent work includes ongoing SCADA projects, as well as PLC upgrades for large pumping stations.

Shoal Creek Plant Ozone PLC Upgrade 2021, Gwinnett County Department of Water Resources, Georgia

Project Manager and Technical Lead. Brian provided PLC/SCADA programming support for upgrades to a WTP ozone system. The effort included workshopping with county staff to determine the most effective SCADA HMI visualizations to aid operators in the startup, operation, and shut down of the ozone system.

New York SCADA Upgrade Program (PDB), SUEZ Water, Rockland and Orange Counties, New York

SCADA/HMI Configuration Lead. Brian has led planning, standards, and configuration work on this PDB program to implement a new systemwide SCADA. The existing system includes inconsistent hardware, software, and instrumentation of varying condition and spans more than 150 remote sites and nine WTPs. The team is nearing completion of the sixth and final GMP package. The new network increases reliability, consistency, and security for SUEZ across New York. Brian has been instrumental in verifying SCADA national standards are followed in SCADA deployments and has spearheaded efforts to update and improve features of the SCADA system. Some of these features including adding more detail and functionality to spark lines, developing site-specific trends, and embedding PDF manuals and help videos.

Education
B.S., Mechanical Engineering, Georgia Institute of Technology, 2005

Registration
Professional Engineer Georgia, PE038583

Inductive Automation – Ignition Gold Certified

Wonderware – Application Server, Historian Server, InTouch for System Platform Certified

Years of Experience
15

Years at BC
5

BC Office Location
Atlanta

Residence Location
Atlanta

Brian Gombos, P.E.

Structural Engineer

Brian's structural engineering expertise spans WWTPs with capacities up to 1,700 MGD and WTPs up to 540 MGD

Brian has focused his career in the structural design and rehabilitation of water and wastewater facilities. His expertise covers a wide range of structures including collection system facilities, pump stations, basins/tanks, wastewater treatment upgrades, wet/dry wells, and foundations.

Biosolids Dryer Facility, Great Lakes Water Authority, Detroit, Michigan

Lead Structural Engineer. Supported as a subconsultant to NEFCO for the award-winning Biosolids Dryer Facility to improve solids handling at GLWA's WRRF. The 47,500-square-foot facility has a steel frame with an exterior of insulated architectural precast concrete panels. The building foundation consists of 450 steel H-piles and a concrete slab foundation. Within the building is a two-story block office space, a large process area, and a mezzanine with electrical and dewatering equipment. Large gravity and lateral loads from heavy process equipment and four 90-foot-high silos required a deep structural foundation system for support and to resist seismic overturning.

Biosolids Facility Progressive Design-Build, Downriver Utility Wastewater Authority, Wyandotte, Michigan

Structural Engineer. Supported design to reduce solids volume, disposal cost, and environmental impact. The core project added a biosolids dryer system and Class A solids and handling components, including sludge feed pumping, additional centrifuge dewatering equipment, sludge conveyors, and truck load-out facilities.

Rehabilitation of Pump Station 1 Improvements, Great Lakes Water Authority, Detroit, Michigan

Structural Engineer. Improvements to a raw sewage pump station with a wet weather design capacity of 1,444 MGD. Work includes facility architectural, structural, electrical, instrumentation, and HVAC improvements, regulatory compliance, hydraulic modeling, permitting, rehabilitation/rebuilding of existing pumping units, improvements to major process piping and valves, and the potential addition of a variable speed controller (including variable frequency drives and eddy current drives at a minimum).

Education
M.S., Structural Engineering, Michigan State University

B.S., Civil Engineering, Michigan State University

Registration
Professional Engineer, PE047227, Georgia

Years of Experience
23

Years at Wade Trim
23 years

Wade Trim Office Location
Detroit

Residence Location
Detroit

Professional Affiliations
American Society of Civil Engineers

American Concrete Institute

Society of American Military Engineers

Society for Mining, Metallurgy & Exploration

Jim White, P.E.

Structural Engineer

Jim's structural engineering experience was gained at WWTPs throughout the Midwest and Southeast with capacity up to 1,700 MGD.

Jim has performed condition assessments, structural evaluations, rehabilitation and new facility design, and construction assistance for a range of projects, including GLWA Sludge Incinerator Air Quality Improvements. His pragmatic approach to finding the most cost-effective solution generates designs that mix time-tested techniques and new methods. Skilled in building information modeling (BIM), he uses this tool to streamline the design process, fine-tune layouts, and sequence work to minimize impacts to existing operations. Whether he is evaluating the structural integrity of a wet well, designing the foundation for a new facility, or rehabilitating a roof, Jim builds on past experience to deliver a practical, operator-friendly design.

Biosolids Dryer Facility, Great Lakes Water Authority, Detroit, Michigan

Structural Engineer. Involved in the design of mat foundations and deep foundation system consisting of driven steel H-piles for the main building, storage silos, truck scale, and major process equipment. As part of a 23-year design-build-operate contract for a new biosolids dryer facility, Wade Trim has served as the lead designer providing design and survey services, regulatory permitting, construction engineering, and QA/QC inspection. The facility will treat up to 440 dry tons per day in a process where liquid sludge from DWSD's WWTP is dewatered and dried through a thermal heating process creating a high-grade Class A pelletized fertilizer material that can also be used as fuel in large furnaces.

Mill Creek WWTP Raw Sewage Pump Station Rehabilitation, Metropolitan Sewer District of Greater Cincinnati, Ohio

Project Manager/Lead Structural Engineer. The 360-MGD North Pump Station at the Mill Creek WWTP works with the 155-MGD South Pump Station to provide an ultimate raw sewage pumping capacity of 450 MGD. The station includes nine pumps—three are variable frequency drives. All of the existing pumps were rehabilitated and new motors installed. Structural rehabilitation of the 50-foot wet well included concrete repairs and application of a new protective coating. Two 96-inch-diameter steel force mains were cleaned and high-performance coatings were applied to the interior to extend their service life. Architectural upgrades to the building were also part of the project. Construction services involved submittal review, progress meetings, periodic site visits, updating the online O&M manual, record drawings, and start-up and testing assistance.

Education
B.S., Civil Engineering, University of Toledo

Registration
Professional Engineer, 6201041415, Detroit

Years of Experience
38

Years at Wade Trim
28 years

Wade Trim Office Location
Detroit

Residence Location
Detroit

Roberta Unger, R.A., FAIA, NCARB *(WA)*

Architecture

Bobbie has 50 years of architectural experience with water and wastewater treatment facilities, including design-build delivery and service to GCDWR.

She has worked on numerous water resources projects and provided feasibility and concept studies and budget validation through construction administration. Programming for facilities such as administrative, training, and laboratory spaces and preparation of architectural documents was also performed. She has participated in design-build and CM delivery and contract administration. Bobbie brings experience in design review boards processes, stakeholder presentations, local permitting, and fire marshal review.

Shoal Creek Filter Plant, Gwinnett County Department of Water Resources, Georgia

Principal-in-Charge – Architecture. This water plant is a significant project both technologically and architecturally. Architecture was critical due to community requirements. It consists of a number of buildings on 87 acres with future expansion capabilities and accommodates personnel, chemical storage and treatment processes. The site dictated the complex engineering and architectural design. Many of the buildings have entries at two different levels due to the grade change.

Johns Creek Environmental Campus (JCEC), Water Reclamation Facility, Fulton County, Georgia

Principal-in-Charge – Architecture. Bobbie's experience with the design of water reclamation facilities located in urban settings was essential in responding to the concerns of Fulton County, the City of Roswell and the community. The team understood the functional and operational needs of this state-of-the-art facility and the aesthetic sensitivity of the community. The JCEC combines innovative technology with architecture that is respectful of local traditions. It was presented to the city's Historic Design Review Board for approval. The buildings enclose the various treatment processes and laboratories and an educational building.

Scott Candler Water Filter Plant Program, DeKalb County, Georgia

Principal-in-Charge – Architecture. Architecture played a significant role in this compact design. The three level spine connects the lower level, intermediate, mezzanine, and upper level observation gallery. The mezzanine houses administrative/lab areas, enclosed filter basins and ozone generator. The observation gallery allows for efficient staff oversight. The design was cost effective and achieved balanced capital and maintenance costs.

Education
B.S., Architecture, Kent State University

Registration
Registered Architect, Georgia RA003302

NCARB 36345

National Council of Architectural Registration Boards

American Institute of Architects, Fellow

Years of Experience
50

Wendel Office Location
Atlanta

Residence Location
Atlanta metro

Shen Zhou, P.E.

Civil / Stormwater Engineer

Shen's knowledge of area regulations and considerations will help him with early permitting, as well as efficient stormwater and pipeline design and utility relocates.

Shen brings 20 years of experience in delivering water and wastewater solutions to clients in Georgia and throughout the Southeastern US. Shen is well-versed in design and construction of large-diameter water transmission and sewer conveyance systems. His expertise also lies in site development, hydrologic and hydraulic analysis, combined sewer overflow (CSO) control, diversion systems for sewer tunnels, stormwater management, and permitting for multiple agencies in Metro Atlanta. His construction experience includes site inspection, construction document review, scheduling, and cost estimating.

South River WRC Screenings Storage and Dewatering Facility Design-Build, City of Atlanta, Georgia

Lead Civil Engineer. Supported design with site layout, permitting services, and QA/QC to construct the 90-foot by 60-foot screenings storage and prefabricated dewatering facility. Screenings from DWM Combined Sewer Control Facilities (CSCFs) and sewer cleaning debris that are currently stored at Custer Avenue CSCF will now be stored and dewatered at the South River WRC facility. As the lead designer, Wade Trim's scope of work included project administration and coordination services, design services, and field coordination and inspections services.

Southerly Tunnel and Consolidation, Northeast Ohio Regional Sewer District, Cleveland, Ohio

Civil Engineer. Supported design for 3 miles of 23-foot-diameter CSO tunnel, four main shafts, and several deep upstream hydraulic structures, including site layout, stormwater system, utility relocation, erosion control, and site restoration.

Education
M.S., Civil Engineering, University of New Mexico

B.S., Highway Engineering, Tongji University

Registration
Professional Engineer, PE032480, Georgia

Level II Certified Design Professional, Civil Erosion Control, Georgia Soil and Water Conservation Commission

Years of Experience
20

Years at Wade Trim
1.4

Wade Trim Office Location
Gwinnett County

Residence Location
Marietta, GA

How will you address opportunities and challenges for the two alternative sites?

The site adjacent to the existing dewatering building requires demolition to accommodate the new building. Challenges include numerous underground utilities and electric ductbanks that require relocation. The greenfield site requires new utility connections and stormwater management; however, it is closer to the natural gas line, which is a benefit. Our initial evaluation indicates either site can accommodate the facility. In either case, appropriate planning and sequence of construction will keep the facility in operation during construction.

Shen Zhou continued

City of Atlanta Fire Station #36, City of Atlanta, Georgia

Project Manager for a 13,931-square-foot, one-story building and 3 acres accommodating site development on Fairburn Road in Atlanta. Responsibilities included site development, grading, stormwater management, utility design, erosion sediment control, and permitting service.

Alpharetta Medical Office, City of Alpharetta, Georgia

Civil Engineer for the project located on Upper Hembree Road next to North Fulton Regional Hospital. The site consisted of two structures: a 28,000-square-foot, two-story brick Medical Office Building and a 7,200-square-foot, one-story wood-frame building. The project responsibilities included site development, grading, stormwater management, utility design, erosion sediment control, and permitting service.

Kroger Store R561, City of Chesapeake, Virginia

Civil Engineer for accommodating site development of a 118,000-sq-ft building and 15 acres of land. Responsibilities included site development, grading, stormwater management, utility design, erosion sediment control, and permitting service.

Northside Transmission Main Replacement, City of Atlanta, Georgia

Project Manager for the design and installation of 5 miles of 36-inch water main along Northside Drive from Hemphill Water Treatment Plant to Moores Mill Road. Project responsibilities included construction plan development, utility plan design and coordination, GDOT permitting, and design subcontractor management.

Fairburn Water Transmission Main, City of Atlanta, Georgia

Design Lead for the design and installation of a 36-inch water main from the Adamsville Pump Station to Butner Road that consisted of 6.3 miles. The completed preliminary design work included preliminary route research, site visit, route selection, and preliminary plan development.

SR400 Water Main Relocation, City of Atlanta, Georgia

Design Lead for the design and installation of 3,500 LF of 48-inch water main along SR 400, which consisted of the Northridge section, Old Alabama section, and Grimes Bridge section. Responsibilities included construction plan and specification development.

West End Historic District and Greenbriar Town Center LCI, City of Atlanta, Georgia

Project Manager for seven separate streetscape design contracts in the West End Historic District and Greenbriar Town Center. Responsibilities included the design of street widening, sidewalks, curb and gutter, driveway access, drainage improvements, erosion sediment control, permitting service, and sub-consultant management.

South River Tunnel, City of Atlanta, Georgia

Civil Engineer for 9,000 feet of 14-foot-finished-diameter tunnel. Project responsibilities included wetland mitigation, sewer collection and diversion system, vortex, site development design, and permitting service.

Austell Road at East West Connector Improvement, Cobb County, Georgia

Civil Engineer for assisting with improving the intersection at Austell Road and East-West Connector in Cobb County. The project responsibilities included the design of roadway widening, sidewalk, storm drainage improvements, erosion sediment control, and GDOT permitting and coordination.

McDaniel Basin Sewer Separation, City of Atlanta, Georgia

Civil Engineer. Supported sewer separation project as part of an estimated $3.5-billion program to improve Atlanta's wastewater collection, transmission, and treatment systems. The basin comprises 60,000 LF of combined sewers, 81,900 LF of separate sanitary sewers, and 47,500 LF of separate storm sewers. The project responsibilities include stormwater management, stormwater and sewer plan and profile design, erosion sediment control, traffic maintenance, and permitting service.

Steve Bupp, P.E.

Yard Piping / Utilities Engineer

Steve's knowledge of GCWRD national facilities dates back to 2001. His national treatment experience has supported his success with GCDWR.

Steve is experienced in the design, construction, engineering, and management of wastewater treatment facilities with expertise in hydraulics and process design. He has served as Project Manager for GCDWR's Central Water Pump Station and Storage Facility and as a Senior Process SME on tasks for Category A and F at multiple GCDWR treatment facilities. More recently, Steve served as a technical lead on the 320-MGD headworks expansion for the City of Atlanta in conjunction with Brown and Caldwell. He also supported the recently constructed DWUA Biosolids Dryer design-build project.

Biosolids Facility Progressive Design-Build, Downriver Utility Wastewater Authority, Wyandotte, Michigan

QA/QC Reviewer. Supported design to reduce solids volume, disposal cost, and environmental impact. The core project added a biosolids dryer system and Class A solids and handling components, including sludge feed pumping, additional centrifuge dewatering equipment, sludge conveyors, and truck load-out facilities.

Demand Services Category F Facilities, Gwinnett County, Georgia

Senior Process Engineer. Led and supported multiple work authorizations for CIP renewal and replacement projects at the 60-MGD F. Wayne Hill WRC and the 150-MGD Lanier Water Filter Plant. The work consisted of wastewater tertiary membrane system hydraulic analysis, chemical feed systems, review and recommendations for the biogas compressors for co-generation, filter pipe gallery rehabilitation, isolation gate replacement program, raw water intake HVAC improvements, and clearwell evaluation.

Demand Services Category I CM and Urgent Services, Gwinnett County, Georgia

Senior Project Manager/Senior Process Engineer. Led and supported multiple work authorizations for CIP renewal and replacement projects at the 90-MGD Shoal Creek Water Filter Plant and the 150-MGD Lanier Water Filter Plant.

Central Water Pump Station & Storage Facility, Gwinnett County, Georgia

Project Manager. Oversaw design services for a 20-MGD finished water storage and a 40-MGD pump station facility.

Education
M.S., Civil Engineering, University of Utah

B.S., Civil Engineering, University of Maryland

Registration
Professional Engineer, 61418, Florida

Years of Experience
47

Years at Wade Trim
3.7 years

Wade Trim Office Location
Gwinnett County

Residence Location
Roswell, GA

Thomas Tye, P.E. *(CERM)*

Geotechnical

Tom offers 37 years of experience in geotechnical engineering and instrumentation and construction materials testing, including work at FWH WRC.

He has expertise in design and installation of instrumentation systems, deep and shallow foundations, soil stabilization, ground improvement, slope stability and underpinning, excavation bracing for large earthwork facilities, ground improvement, construction management, and performance monitoring. He has provided consulting services on a wide variety of projects including water supply and wastewater plants, transportation projects, large excavations, commercial buildings, dams, embankments, and seawalls.

F. Wayne Hill Water Resources Center, Gwinnett Department of Water Resources, Georgia

Senior Geotechnical Engineer. Tom directed field work and provide geotechnical engineering recommendations for a Stormwater Retrofit/ Demonstration Project Design at the FWH WRC.

Gwinnett Department of Water Resources Central Facility, Gwinnett County, Georgia

Senior Geotechnical Engineer. Tom directed field work and provided geotechnical review of infiltration testing for the bioretention area of the main facility at the Central Facility of GCDWR.

Lanier Filter Plant, Gwinnett Department of Water Resources, Georgia

Senior Geotechnical Engineer. Tom provided geotechnical engineering review and recommendations for an MSE wall at the Lanier Filter Plant.

Stone Container Plant Expansion, Port Wentworth, Georgia

Geotechnical Engineer. Tom was the geotechnical engineer for a $360 million plant addition that included an extensive addition to the wastewater treatment facility. He provided consultation for deep and shallow foundations, dewatering, excavation bracing, and subgrade surcharging. He also provided project management and geotechnical engineering during the construction including installation of driven H-piles and evaluation of dewatering and bracing systems.

Adamsville Pump Station Improvements, Atlanta, Georgia

Senior Geotechnical Engineer. Tom directed field work and provided geotechnical engineering, construction recommendations, and rock excavation procedures for this facility improvement project.

Education
M.S., Civil Engineering, Georgia Institute of Technology

M.B.A., Business Administration, Georgia State University

B.C.E., Civil Engineering, Georgia Institute of Technology

Registration
Professional Engineer Georgia, PE18510

Years of Experience
37

CERM Office Location
Atlanta

Residence Location
Atlanta

Erick L. Smith, P.L.S. *(CERM)*

Surveying

Erick brings over 20 years of experience in boundary, topographic, construction layout, construction as-built, and construction quality assurance surveys.

As CERM's Survey Section Manager, he leads operations of its surveying and mapping group. Clients include Hartsfield-Jackson Atlanta International Airport, Metropolitan Atlanta Rapid Transit Authority, Atlanta BeltLine, Inc., Georgia Department of Transportation, Atlanta, and DeKalb County. Erick has successfully engaged multiple teams of contractors, stakeholders, and clients.

Snapfinger Advanced WWTP Expansion Phase I, DeKalb County, Georgia

Registered Land Surveyor. CERM performed a topographic survey depicting 2' contours (+/- 1') for the +/-22.5 acres of disturbed area of the Snapfinger Creek AWTP Expansion project. The survey included all natural and man-made topographic features as well as ditch and drainage structures located within the proposed entry areas. Inverts, materials, and sizes of sanitary sewer manholes and storm drainage structures within the topo limit were identified. CERM provided a survey database depicting the excavated utilities including all gas mains, water lines and electric lines, underground utilities within a 50' radius of each proposed borehole location, and an existing 54" raw influent line located near the proposed water quality pond and retaining wall. CERM placed permanent survey controls on the top and bottom of the soil nail wall in 5 locations for monitoring any possible movement. Permanent control points for the existing wall were also set for future QA/QC purposes. CERM performed volume calculations of the excavated and stockpiled areas and provided technical support to CERM's geotechnical team for determining the volumes of blasted rock and overlying soils, remaining rock to be blasted, material removed from site, and material stockpiled on-site. CERM provided a boundary survey for the +/- 4,500' of northerly and easterly property lines of the project area, which included location of all visible boundary evidence on the subject and adjacent parcels. CERM placed temporary stakes as required by the client.

Cochran Road/Camp Creek Wastewater Reclamation Facility, Fulton County, Georgia

Survey Party Chief. The survey included a detailed topographic analysis as well as the location of the existing underground utilities and various tanks. The survey was part of a force main relocation design project.

Education
Surveying Certificate, Southern Polytechnic State University, 2005

Associate of Applied Science, Clayton College & State University, 1999

B.A. History, Indiana University, 1993

Registration
Professional Land Surveyor Georgia, 3196

Years of Experience
22

CERM Office Location
Atlanta

Residence Location
McDonough, GA

Robert Taylor

BIM

Robert is a highly knowledgeable and versatile BIM and CADD designer with extensive experience in wastewater treatment plant layout including process and building mechanical, piping, structural, and civil.

He has served as BIM and/or CADD leader for numerous water and wastewater projects and has assisted in regional BIM and CAD supervision and workload planning. Robert has also played a key role in the development and update of company CADD-related standards.

Easterly Aerated Grit, Northeast Ohio Regional Sewer District, Cleveland, Ohio

CADD Leader. Responsible for the CADD support and coordination in mechanical, civil, electrical, instrumentation and structural engineering disciplines for the 400 MGD grit removal facility located in the abandoned pre- aeration tanks. This project was done entirely in 3D using AutoCAD MEP, AutoCAD Architecture and AutoCAD Revit.

Southerly Primaries Improvements, Northeast Ohio Regional Sewer District, Cleveland, Ohio

CADD Design. Provided CADD support using AutoCAD MEP 3D software for the design of improvements to the primary settling tanks and disinfection system to accommodate wet weather flows.

Sawgrass Wastewater Treatment Plant High Level Disinfection, City of Sawgrass, Florida

CADD Leader. Responsible for CADD services for mechanical, civil, electrical, instrumentation and structural engineering disciplines for design of a filter feed pump station, deep bed filters, chlorine contact tank, chemical building, reuse transfer pump station, and reuse storage tank.

North Port Wastewater Treatment Plant Upgrades and Expansion, North Port, Florida

CADD Leader. Responsible for CADD services for mechanical, civil and structural engineering disciplines for a $23 million 7.0 mgd upgrade to a reclaimed water plant. Facility improvements include deep bed tertiary filters with control/blower/electrical building, clearwell, mudwell, a second chlorine contact basin, 2.5 mg storage tank, effluent and internal pumping systems.

Education
Diploma in Drafting and Design, AutoCAD Training Seminar, University of Akron

Advanced AutoCAD and AutoLISP, Cleveland State University

AutoCAD Civil 3-D Training

Years of Experience
44

Years at BC
22

Office Location
Nashville

Residence Location
Nashville metro

Tim Henecks, P.E., ASP *(DSI)*

Dust Safety

Tim is a principal member of three National Fire Protection Association committees for dust explosion and fire prevention standards. He regularly works with BC and will help FWH WRC maintain safe operations.

Expertise

- Principal Member of the following NFPA Technical Committees:
  - Agricultural Dusts (CMD-AGR), responsible for NFPA 61: Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities
  - Combustible Metals and Metal Dusts (CMD-CMM), responsible for NFPA 484: Standard for Combustible Metals
  - Fire Protection of Cannabis Growing and Processing Facilities (CGP-AAA), responsible for NFPA 420: Standard on Fire Protection of Cannabis Growing and Processing Facilities

Experience

- Engineering experience in the chemical and process industries include roles at the plant level as Process Engineer, Project Engineer and Site Safety Leader as well as design of Explosion Protection Systems as a Sales Engineer
- Responsibilities encompass design and specification for dust explosion and related fire protection systems based on conducting an analysis for each process being addressed
- Analyses and provides effective recommendations on a wide variety of industry segments including food processing, sugar refining, specialty chemical, pharmaceutical, wastewater treatment, grain, cannabis, wood products, tobacco, metals, and power-generation

Education
B.S., Chemical Engineering, University of Florida

Registration
Professional Engineer, Georgia, PE032480

Certified Associate Safety Professional, Board of Certified Safety Professionals

Years of Experience
10

Years at DSI
4

DSI Office Location
West Palm Beach, FL

Residence Location
West Palm Beach, FL

Professional Affiliations
American Institute of Chemical Engineers

National Fire Protection Association

American Society of Safety Professionals

National Association of Fire Inspectors

How will you promote a safe working environment for operators with the new dryer?

It is critical to control potential combustible dust fire and explosion hazards and communicate those hazards to personnel. We will conduct a hazard assessment and recommend controls, communications, and maintenance to prevent, reduce, and mitigate such hazards.

Tim Henecks continued

Publications and Presentations

- Featured Speaker various professional conferences and venues including
  - Global Dust Safety Conference
  - Polymer Alliance
  - Int'l Biomass Conference
  - AIChE Global Congress on Process Safety
  - Combustible Dust Safety Science Podcast
  - ASSP National and Regional Conferences
- Published White Paper on DHA Methodology: Using a Prescriptive vs. Risk-Based Approach
- Published Case Study on Reducing Electrical Classification & Housekeeping burden through Preventative Maintenance
- Published Articles in Professional Safety Journal (PSJ) and on LinkedIn Pulse on topics related to combustible dust safety and hazard analysis

Dave McEwen, P.E.

Odor Control

Nationally renowned in odor control, Dave recently co-authored WEF's Odor Control Manual of Practice and brings leading expertise to support FWH WRC.

Dave has 28 years of experience in odor control technology studies and designs that minimize impacts to communities surrounding wastewater and industrial facilities. He is a renown national specialist in the municipal and industrial wastewater odor control community and has authored numerous papers and industry publications related to odor control. David has additional experience in master planning and process design for water and wastewater collection and treatment facilities.

Big Creek WWTP Expansion Progressive Design-Build, Fulton County, Atlanta, Georgia

Odor Control Quality Lead. Dave provided quality reviews of odor control system drawings and specifications for the Big Creek design-build project. The ultimate odor control system will treat approximately 100,000 cubic feet per minute (cfm) of foul air from several plant sources, including new headworks, primary clarifiers, biological nutrient removal (BNR), and aerobic digester processes. He provided a full review of calculations that support the odor control design basis and confirmed the appropriateness of the chemical scrubber and activated carbon technologies and all odor control drawings and specifications. He also reviewed the odor dispersion model that supports the sufficiency of odor treatment to limit offsite odor impacts to those established in Fulton County goals.

Mallard Creek Water Reclamation Facility Design Upgrades, Charlotte Water, Charlotte, North Carolina

Odor Control Quality Lead. Dave is the odor control lead for design of a new 6,000 cubic feet per minute (cfm) odor control system that will treat highly odorous foul air extracted from the Water Reclamation Facility headworks. Foul air will be extracted from the influent pump station wet well, headworks channels, screens, and dumpster room. He led the conceptual development of an air extraction approach that was strategically designed to pull negative pressures and eliminate dead spots from headspace areas. The design will also incorporate a vortex drop upstream of the wet well to reduce hydrogen sulfide volatilization, producing lower loads to the new odor control system. An activated carbon adsorber will be constructed in a tight footprint; Dave and the project team have consulted with Charlotte Water operations staff and vendors to assure that there is acceptable space for maintenance access, including for media replacement.

Education
M.S., Environmental Engineering, University of Florida, 1995

B.S., Environmental Engineering, University of Florida, 1993

Registration
Professional Engineer North Carolina, 049194

Years of Experience
28

Years at BC
15

BC Office Location
Raleigh

Residence Location
Raleigh

Paul Pepler, P.E.

Air Permitting

Paul recently supported the Biosolids Dryer and STP Improvements project for Auburn, NY, and brings extensive air quality permitting expertise to his role.

Paul is an environmental regulatory compliance specialist with more than 20 years of experience leveraging his multimedia environmental, science, engineering, and construction background to develop creative solutions that establish, bolster, and maintain compliance; minimize risk; and reduce regulatory burden for diverse industrial, municipal, federal, institutional, and energy sector clients.

Air Quality Compliance and Permitting, Various Clients, United States

Subject Matter Specialist. Provided comprehensive air compliance consulting services to diverse client types including:

- Compliance auditing, improvement, and management planning
- Permitting applicability evaluations and compliance demonstrations
- Air emissions estimates and air toxics compliance demonstrations
- Screening and dispersion modeling
- Permitting strategies, negotiations, and permit applications
- Stack testing management and inspection support
- Annual air emission reporting and greenhouse gas reporting
- National Emissions Standards for Hazardous Air Pollutants (NESHAP)
- New Source Performance Standards (NSPS)
- Obtained construction and operating permits for new and modified facilities

Facility types included wastewater treatment facilities; biomass gasification and combustion; landfills; paperboard manufacturing; firearm manufacturing; surface coating operations; magnet wire production; printed circuit board manufacturing; electroplating operations; plasma arc cutting system manufacturing; paint, chemical, and plastics manufacturing; aerospace and electronics manufacturing; steam electric utilities; independent power production; foundries; internal combustion engines; industrial steam boilers; transportation authorities; mining; and aggregate operations.

Applicability Evaluations and Air Permitting, Various Municipal Clients

Technical Lead. Interpreted and summarized permitting framework, performed permitting applicability evaluations, prepared emissions estimates, developed permitting strategies, and prepared permit applications for municipal wastewater treatment plants including standby and emergency power, combined heat and power, boilers, flares, sludge drying, and odor control.

Education
M.S., Civil Engineering: Environmental Engineering, University of New Hampshire

B.S., Environmental Science: Ecosystems, University of New Hampshire

Registration
Professional Engineer, New Hampshire, 14625

ISO 14064-1:2018 Greenhouse Reporting Trained

Certified Hazardous Waste Coordinator, NH Department of Environmental Services

40-Hour OSHA Hazardous Waste Operations (40 CFR 1910.120) with Current Refreshers

Years of Experience
20

Years at BC
5

BC Office Location
Boston

Residence Location
Auburn, NH

Sam Atere-Roberts, P.E., DBIA

ARPA Administration

Sam brings unique insight to benefit the project from his current ARPA grant management experience and has onsite CIP management work with GCDWR.

Sam's 34 years of consulting experience includes planning, feasibility studies, evaluations, design, procurement, construction, startup, commissioning, and project and program management for biosolids facilities, wastewater and water treatment plants, pump stations, and conveyance and distribution systems. His experience includes working with state and federal regulatory agencies to obtain environmental, design, and construction permits.

American Rescue Plan Act Grant Management, Tennessee Department of Environment and Conservation, Nashville, Tennessee

BC Project Manager. Sam is leading BC's efforts as a major partner on a large consultant team providing ARPA grant support through the Tennessee Department of Environment and Conservation. The team delivered a fast-track effort in fall 2022 to encourage and support 331 applications for Non-Competitive Grants and 1,140 projects totaling $1B, as well as competitive grants totaling $300M. Sam is responsible for leading BC in supporting the team's work to solicit and process applications, perform field inspection and related services, and provide administration support using the Grant Management System. BC's primary responsibility is providing technical support including technical reviews of non-competitive and competitive grant applications to determine eligibility for grant funding; inspections on construction projects approved for grant funding; and review of reimbursement requests from grant applicants to verify compliance with requirements.

Capital Improvement Program 2007–2008, Gwinnett County Department of Water Resources, Georgia

Project Manager. Served onsite as a partner to the county's in-house staff to provide program management services in support of a $1.2 billion, 6-year Capital Improvements Program (CIP) for water and wastewater infrastructure. Managed wastewater pump stations, wastewater force main, gravity sewer, and water main projects. Responsibilities included: identifying project needs, planning work, developing scopes of work and work plans, managing engineering and consultant contracts, developing RFPs, administering designs, preparing bid packages for construction, working with purchasing to select contractors from competitively bid proposals, managing construction contracts and participating in business case evaluations for prioritizing CIP projects.

Education
M.S., Environmental Health Engineering, The University of Texas at Austin, 1988

B.S., Civil Engineering, Ahmadu Bello University (Zaria, Nigeria), 1982

Registration
Professional Engineer, Georgia, PE19612

Design Build Professional, DBIA

Years of Experience
34

Years at BC
20

BC Office Location
Atlanta

Residence Location
Atlanta metro

James Cook, P.E., DBIA

Construction Manager

James brings proven performance in his role for GCDWR and treatment plant design-build delivery.

James is a civil engineer with 27 years of experience in the planning, design, and construction of municipal wastewater treatment, conveyance, and storage facilities. He has extensive experience with construction project management, design-build project delivery methods, startup and commissioning, wastewater engineering design, and program management. He is Brown and Caldwell's General Contractor Qualifier for contractor's licenses in multiple states and a Design-Build Professional through DBIA.

Norris Lake Pump Station and Force Main Design-Build, Gwinnett County Department of Water Resources, Georgia

Construction Manager – Design-Build Project Delivery Team. Provided construction management and inspection for the construction of a force main and three pumping stations.

Electrical Safety Program, Gwinnett County Department of Water Resources, Georgia

Construction Manager. Provided construction management for electrical improvements to implement a comprehensive Arc Flash Electrical Safety Program for Water Reclamation Facilities (3), Water Treatment Plants (2), Raw Water Pump Stations (2), the Collection System and Water Distribution System, including 24 large pumping stations, 204 wastewater pumping stations, 7 water pumping stations, 10 water booster pumping stations, 22 pressure monitoring stations and 6 communication towers owned and operated by the County.

Demand Services Contracts, Gwinnett County Department of Water Resources, Georgia

Construction Manager. Supporting various task orders involving construction services for GCDWR water and wastewater facilities under repeat contracts (Categories A, B, G, H, and I).

Big Creek WRF Expansion Progressive Design-Build, Fulton County, Georgia

Construction Manager – Design-Build Project Delivery Team. $300 million progressive design-build to expand an existing wastewater treatment plant to a 38 mgd MBR facility. Using a PDB approach, the design includes influent screens, vortex-type grit removal systems, double entry-type fine screens, primary clarification basins, biological nutrient removal, membrane bioreactors, UV disinfection, and post-aeration, as well as aerobic digesters and solids dewatering. The DB team completed the guaranteed maximum price (GMP) design deliverable and the project is in construction.

Education
M.Eng., Civil Engineering, University of Louisville, 1999

B.S., Engineering Science, University of Louisville, 1993

Registration
Professional Engineer, Georgia, PE029349

Design Build Professional, DBIA

Years of Experience
27

Years at BC
7

BC Office Location
Atlanta

Residence Location
Atlanta

Akimza Gunn *(CERM)*

Resident Engineer/Resident Inspector

Akimza has broad experience in construction and program management of government water and wastewater, facility, and transportation projects.

City of Atlanta Department of Watershed Management, Atlanta, Georgia

Project Manager. Akimza served as the Construction and Project Manager to City of Atlanta Department of Watershed Management Department. He was responsible for managing and inspecting the various general contractors in the installation and repair of water meters for commercial, residential and industrial customers for the City of Atlanta. He verified contracts and budgets are maintain scope of service as defined with the client. He also managed the field team to meet the performance metrics of the project requirements.

City of Atlanta Department of Watershed Management, Atlanta, Georgia

Project Manager. Akimza served as Project Manager on an Annual Meter Testing and Repair contract. The contract scope includes the annual testing and repairs of all commercial water meters and industrial water meters three inches and above. Akimza established goals to conserve water and identify repairs and key performance indicators and inspection metrics to implement the program.

City of Atlanta Department of Watershed Management, Atlanta, Georgia

Project Manager. Annual Meter Testing and Revenue Recovery The partnership between Olea Edge Analytics and Atlanta began in 2018 as a pilot program that placed Olea Edge Analytics sensors on water meters. Those sensors identified malfunctioning high-value water meters and helped the Department of Watershed Management executives prioritize repairs. Akimza served as Project Manager managing schedule and contract management. In three months, the project had found over a million dollars in recoverable revenue for the water department. The award contract total $3.9 million includes deploying 1,600 devices on City of Atlanta commercial meters and industrial water meters to monitor water accuracy and recover revenue.

City of Atlanta Department of Watershed Management, Atlanta, Georgia

Assistant Project Manager. Annual Contract for Water Installation and Repair. Akimza served as Assistant Project Manager. He managed the implementation phase, where he was responsible to managing schedule, review of construction plans, field inspections and review of invoices. The contract scope includes the installation of water meters for residential and commercial users inside the City of Atlanta city limits and adjacent counties/cites.

Education
B.S., Science, Albany State University

M.B.A., Business Administration, Strayer University

Registration/ Certification
Project Management Professional, 3011483

Georgia Water Distribution Operator, WD016831

Years of Experience
16

CERM Office Location
Atlanta

Residence Location
Ellenwood, GA

Richard Brown *(CERM)*

Resident Engineer/Resident Inspector

Richard has more than 20 years of experience managing a variety of construction projects and facility inspections in metro Atlanta area.

Snapfinger Wastewater Treatment Plant – Structural Inspection Services, Dekalb County, Georgia

Construction Inspector/Construction Project Administrator. Richard served on the construction management team for the building of new wastewater treatment plant for Dekalb County. This included communicating with contractors to ensure project goals were obtained. Duties included inspecting rebar, inspection concrete pours, conducting pipe pressure test, oversee site backfill and road work, cataloging inspectors daily reports, managing RFIs, DCN and updating electronic files with new drawings and auditing As-Built Drawings. Also involved with monthly meetings with contractors to address technical, scheduling and contractual issues.

Structural Inspection Services, MARTA, Atlanta, Georgia

Surveyor. Richard served as surveyor on a project team that provided inspection services as part of the consultant team providing detailed inspection of aerial structures, transit tunnels, retaining walls, V-walls, culverts, and storm pipes crossing MARTA tracks and the scour assessment of MARTA aerial structures above creeks. The consultant team is also providing Quality Assurance review of and oversight of MARTA performed inspections.

Atlantic Station, Atlanta, Georgia

Site Safety Coordinator. Richard served as Site Safety Coordinator on Horizontal Construction Management Team. Duties included documentation of manpower-equipment use, medical surveillance, ambient and personal air monitoring, interface representative for EPA Site visits, Site safety meetings and new employee safety orientations.

5th Runway Project, Hartsfield Atlanta International Jackson Airport, Atlanta, Georgia

Environmental Scientist. Richard conducted Environmental Due Diligence Phase I Assessments for properties to be acquired for the new additional 5th runway. He prepared Phase I Environmental Due Diligence Audit (EDDA) reports along with CADD and GIS drawings to accompany the Phase I assessment reports. He also conducted asbestos surveys and assisted with asbestos remediation supervision.

Education
B.S., Mechanical Engineering, Tuskegee University; 1986

Registration/ Certification
American Home Inspection Training Institute, Certified Home Inspector

The Environmental Institute, Asbestos Remediation Supervisor Training

OSHA 10 Certification

OSHA 30 Certification

OSHA 40-Hour HAZWOPER

Years of Experience
20

CERM Office Location
Atlanta

Residence Location
Austell

Herve Yondo, P.E.

Project Controls Lead

As in expert in project controls, Herve has experience identifying risks and opportunities for cost and time savings.

Herve is a client-focused and detail-oriented project manager. He is highly experienced in complex water, wastewater, and stormwater system operation and management, and has served as a project manager and senior engineer on various water and wastewater treatment plant improvement projects in the Metro Atlanta area and the Southeast. As a certified project manager, he is responsible for leading and providing management oversight on projects through planning, design, construction, and O&M phases.

Big Creek Water Recovery Facility Expansion Construction Management Services, Fulton County, Roswell, Georgia

Senior Engineer. Provided technical reviews on schedules compliance and project performance and project management support. The $350M progressive design-build facility expansion is the largest single capital project in the County's history. Wade Trim is providing construction management support and subject matter expertise throughout the 46-month effort as part of the project's third-party construction management team. The expansion is anticipated to be complete in 2024. Once operational, the County will operate one of the largest membrane bioreactor treatment systems in the United States.

Lanier Filter Plant Residuals Preclarification Basin Rehabilitation, Gwinnett County Department of Water Resources, Buford, Georgia

Project Manager. Managed the budget, scope, schedule, quality, risk, communication, and deliverables necessary to assess the condition of the system, evaluate the existing operational and maintenance issues, and prepare the design and bid documents. Led the internal project team, provided project technical guidance and vision of overall project objectives, and served as the single point of contact providing the proper inputs to GCDWR for

Education
M.S., Construction Management, Southern Polytechnic State University

B.S., Civil Engineering, Virginia Polytechnic Institute & State University

Registration
Professional Engineer PE043407, Georgia

Wastewater Collection System Operator, WWC033287, Georgia

Years of Experience
14 years

Years at Wade Trim
3.3 years

Wade Trim Office Location
Gwinnett County

Residence Location
Norcross, GA

"Project controls and scheduling on a CMAR project is critical. I will work with Project Manager Scott Adams to assist with the management of resources and provide monthly schedule updates. We will work with the contractor to assure options evaluated reflect an attainable critical path method scheduling approach. We will also integrate supply chain issues to provide GCDWR with clarity for selecting the appropriate approach for the project."

making critical project decisions throughout the evolution of the project.

RM Clayton Nutrient Harvesting Removal, City of Atlanta, Georgia

Project Manager for a pilot study of integrated nutrient recovery system to remove struvite from the dewatering system centrate. Phase 2 was a design build and start-up of a nutrient recovery system.

RM Clayton Compliance Upgrades Phase 2, City of Atlanta, Georgia

Project Controls Engineer for rehabilitating and upgrading the existing primary clarifiers, primary sludge pumping station houses, utility tunnels piping, UV influent gates, drum screens controls, and stormwater manholes; installation of new check valves to prevent backflow from river and new grit removal pump, center cone, and jib crane at the primary influent riser shaft.

Wastewater Collection System Program, Pinellas County, Florida

Schedule and Cost Manager. Supported development and implementation of improvements to mitigate recurring sanitary sewer overflows and to cost-effectively reduce inflow and infiltration, which causes capacity issues in the collection system and at the water reclamation facilities (WRFs) and can accelerate pipe deterioration. Other provided services included development of Asset Management Plans for the collection system, a septic-to-sewer program, and assisting the County in developing policies and ordinances to manage I&I from sewer laterals and private sector systems.

Plantation Bay Water Treatment Plant and Beverley Booster Station improvement, Flagler County, Florida

Project Manager. As part of Wade Trim's continuing engineering services contract for FGUA, this project included the independent evaluation to the improvement to an existing groundwater treatment facility needing renewal and replacement of well pumping and treatment system due to water quality degradation. The scope also included the development and recommendation of alternatives, and prioritization of recommended projects based on the urgency of implementation. The study also included assessment of Beverly Beach service area system capacity.

Facilities Installation Contract Atlanta, City of Atlanta, Georgia

Lead Senior Project Manager. Overseeing and completing over 240 projects under this contract, which includes over 90,000 LF of small diameter pipe and several emergency large diameter projects. Led and coordinated studies, design, and construction associated with this annual contract including the Hemphill Pump Station, Fairburn Road valves replacement, Piedmont/Peachtree Road water main and valves replacement, and Butner Road emergency repair.

Peachtree Creek Trunk Stabilization and Restoration, Atlanta, Georgia

Project Manager. Managed the design of an engineered route, restoration of bank, and improvement of one major failing sewer line with a 60-inch RCP.

South River Water Reclamation Center Various Project G1, City of Atlanta, Georgia

Project Controls Engineer for the study and design of equipment and process treatment improvements to the South River Water Reclamation Center

Flow Diversion from Falkenburg AWTP to Valrico AWTP, Hillsborough County, Florida

Designer/Estimator/QA/QC. This diversion project includes a new pump station and pipeline that redirects up to 3 MGD of wastewater from the Mitchell Road Master Pump Station to the Valrico AWTP. Wade Trim will also evaluate the opportunity to divert 1.3 MGD from Nature's Way pump station to Valrico AWTP via the Miller Road pump station. This work includes a total of four pump station evaluations, retrofitting, and redirection of flows to maximize the capacity and life of the existing AWTPs. The scope items include design and engineering, alternative analysis, permitting, public outreach and involvement, electrical engineering and controls, SCADA system compliance, odor control, and construction inspection services.

William Agster

Cost Estimating and Scheduling

Bill leads BC's estimating and scheduling group and has managed delivery of large water and wastewater projects using CMAR and design-build contracting.

Bill has led and managed water/wastewater treatment projects in the public utility, mining, solid waste, manufacturing, oil and gas, and power sectors, coordinating work of multiple contractors and vendors. He excels at identifying, evaluating, and managing project risks and coordinating project control functions including cost estimating, scheduling, value engineering, procurement, contracting, and permitting.

Education
B.S., Agriculture Business/ Construction Management, Louisiana State University

Years of Experience
27

Years at BC
7

BC Office Location
Denver

Residence Location
Denver

Central Optimization Project, Metro Water Services, Nashville, Tennessee

Pre-Construction Services Advisor. This project includes a 350 mgd UV system and modifications at the 100 dry ton biosolids facilities with DAFTs, anaerobic digestion, centrifuges, and thermal drum dryers. The goal of the project is to provide cost effective solutions to maximize treatment capacity while minimizing new construction. The recommendations include both liquid and solid stream processes. The evaluation of the Biosolids Facility is currently in progress and will include improvements to reduce equipment downtime and maximize throughput.

Gowanus Combined Sewer Overflow Facilities, New York State Department of Environmental Protection, New York City, New York

Pre-Construction Services Advisor. Project includes demolition of existing facilities and design of new CSO conveyance and treatment facilities, including CSO screening, degritting, and storage tanks. The project involves the facility planning of three CSO storage facilities and the design of two of those CSO storage facilities located on a Superfund site adjacent to the Gowanus canal. 8 mg and 4 mg tanks will be constructed respectively in the Red Hook and Owl's Head sewersheds. Facilities will include screening and degritting systems, dewatering systems, and odor control systems.

RiverRenew CSO Program, Alexandria Renew Enterprises, Alexandria, Virginia

Pre-Construction Services Advisor. Supporting construction in Owner's Advisor role for $350M program to reduce combined sewer overflow events in response to a legislative mandate. The program includes the planning, design and construction of the following program components: two CSO storage and conveyance tunnels with a combined length exceeding 10,000 feet, a 130 MGD wet weather pumping station to control the hydraulic grade line in the tunnels, a tunnel dewatering pump station and modifications to the existing treatment plant to increase total plant capacity and to perform 40 mgd of high-rate primary treatment and disinfection during peak wet weather events.

Required Forms

APPENDIX A

Brown AND Caldwell

GWINNETT COUNTY
DEPARTMENT OF FINANCIAL SERVICES
PURCHASING DIVISION

75 Langley Drive | Lawrenceville, GA 30046-6935
O: 770.822.8720 | F: 770.822.8735
GwinnettCounty.com

Solicitation Name & No. RP003-23- Engineering Design and Support during Preconstruction and Construction of the F. Wayne Hill Water Resources Center Biosolids Dryer Project

CONTRACTOR AFFIDAVIT AND AGREEMENT
(THIS FORM SHOULD BE FULLY COMPLETED AND RETURNED WITH YOUR SUBMITTAL)

By executing this affidavit, the undersigned contractor verifies its compliance with The Illegal Immigration Reform Enhancements for 2013, stating affirmatively that the individual, firm, or corporation which is contracting with the Gwinnett County Board of Commissioners has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security] to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act, in accordance with the applicability provisions and deadlines established therein.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services or the performance of labor pursuant to this contract with the Gwinnett County Board of Commissioners, contractor will secure from such subcontractor(s) similar verification of compliance with the Illegal Immigration Reform and Enforcement Act on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the Gwinnett County Board of Commissioners at the time the subcontractor(s) is retained to perform such service.

1266509 — E-Verify * User Identification Number

1/29/2018 — Date Registered

Brown and Caldwell — Legal Company Name

990 Hammond Drive, Suite 400 — Street Address

Atlanta, GA 30328 — City/State/Zip Code

BY: Correggio L. Peagler Sr — Authorized Officer or Agent (Contractor Signature)

04/05/2023 — Date

Vice President — Title of Authorized Officer or Agent of Contractor

Correggio L. Peagler, Sr. — Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE
5th DAY OF April, 2023

Vicie E. Hood
Notary Public
My Commission Expires: 9.26.25

VICIE HOOD NOTARY PUBLIC GEORGIA 9-26-25 FULTON COUNTY

For Gwinnett County Use Only:

Document ID #_____

Issue Date: _____

Initials: _____

* As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is "E-Verify" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).

GWINNETT COUNTY
DEPARTMENT OF FINANCIAL SERVICES
PURCHASING DIVISION

75 Langley Drive | Lawrenceville, GA 30046-6935
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GwinnettCounty.com

Solicitation Name & No. RP003-23- Engineering Design and Support during Preconstruction and Construction of the F. Wayne Hill Water Resources Center Biosolids Dryer Project

CODE OF ETHICS AFFIDAVIT

(THIS FORM SHOULD BE FULLY COMPLETED AND RETURNED WITH YOUR SUBMITTAL AND WILL BE REQUIRED PRIOR TO EVALUATION)

In accordance with Section 54-33 of the Gwinnett County Code of Ordinances the undersigned bidder/proposer makes the following full and complete disclosure under oath, to the best of his/her knowledge, of the name(s) of all elected officials whom it employs or who have a direct or indirect pecuniary interest in or with the bidder/proposer, its affiliates or its subcontractors:

1. Brown and Caldwell
(Company Submitting Bid/Proposal)

2. (Please check ☑ **one** box below)

☒ No information to disclose *(complete only section 4 below)*

☐ Disclosed information below *(complete section 3 & section 4 below)*

3. (if additional space is required, please attach list)

Gwinnett County Elected Official Name

Gwinnett County Elected Official Name

Gwinnett County Elected Official Name

Gwinnett County Elected Official Name

4.

BY: Correggio L. Peagler Sr.
Authorized Officer or Agent Signature

Correggio L. Peagler Sr.
Printed Name of Authorized Officer or Agent

Vice President
Title of Authorized Officer or Agent of Contractor

Sworn to and subscribed before me this

5th day of April, 2023

Vici E. Hood
Notary Public

(seal)

VICI E HOOD
NOTARY
EXPIRES
GEORGIA
9-26-25
PUBLIC
FULTON COUNTY

Note: See Gwinnett County Code of Ethics Ordinance EO2011, Sec. 54-33. The ordinance will be available to view in its' entirety at www.gwinnettcounty.com

Failure to return this page as part of your proposal document may result in rejection of proposal.

FIRM INFORMATION

Please include this page as part of the Step I proposal document and again resubmit updated as part of Step II proposal document.

The undersigned acknowledges receipt of the following addenda, listed by number and date appearing on each:

Addendum No. #	Date
#1	April 14, 2023
#2	April 17, 2023

Certification Of Non-Collusion in Proposal Preparation Correg L. Peagler Jr. 04/19/2023
(Signature) **(Date)**

The County requires that all who enter into a contract for the physical performance of services with the County must satisfy O.C.G.A. § 13-10-91 and Rule 300-10-1-.02, in all manner, and such are conditions of the contract. In compliance with the attached specifications, the undersigned offers and agrees, if this quote is accepted by the Board of Commissioners within one-hundred-fifty (150) days of the date of proposal opening, to furnish any or all of the items upon which prices are quoted, at the price set opposite each item, delivered to the designated point(s) within the time specified in the quote schedule. By submission of this proposal, I understand that Gwinnett County uses Electronic Payments for remittance of goods and services. Firms should select their preferred method of electronic payment upon notice of award. For more information on electronic payments, please refer to the Electronic Payment information in the instructions to proposers.

Legal Business Name Brown and Caldwell
(If your company is an LLC, you must identify all principals to include addresses and phone numbers in your submittal)

Federal Tax ID _____

Address 990 Hammond Drive, Ste 410, Atlanta, GA 30328

Does your company currently have a location within Gwinnett County? Yes [X] No [ ]

Representative Signature Correg L. Peagler Jr.

Print Authorized Representative's Name Correg L. Peagler Sr.

Telephone Number 770-394-2997 Fax Number N A

E-Mail Address CPeagler@brwncald.com

REQUIRED CONTRACT PROVISIONS FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS – APPENDIX II TO 2 CFR PART 200

The following provisions are required and apply when federal funds are expended for any contract resulting from this procurement process.

(A) Contracts for more than the simplified acquisition threshold currently set at $150,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

Pursuant to Federal Rule (A) above, when federal funds are expended, Gwinnett County reserves all rights and privileges under the applicable laws and regulations with respect to this procurement in the event of breach of contract by either party.

Does vendor agree? YES CLF Initials of Authorized Representative of vendor

(B) Termination for cause and for convenience by the grantee or subgrantee including the manner by which it will be effected and the basis for settlement. (All contracts in excess of $10,000).

Pursuant to Federal Rule (B) above, when federal funds are expended, Gwinnett County reserves the right to immediately terminate any agreement in excess of $10,000 resulting from this procurement process in the event of a breach or default of the agreement by Vendor, in the event vendor fails to: (1) meet schedules, deadlines, and/or delivery dates within the time specified in the procurement solicitation, contract, and/or a purchase order; (2) make any payments owed; or (3) otherwise perform in accordance with the contract and/or the procurement solicitation. Gwinnett County also reserves the right to terminate the contract immediately, with written notice to vendor, for convenience, if Gwinnett County believes, in its sole discretion that it is in the best interest of Gwinnett County to do so. The vendor will be compensated for work performed and accepted and goods accepted by Gwinnett County as of the termination date if the contract is terminated for convenience of Gwinnett County. Any award under this procurement process is not exclusive and Gwinnett County reserves the right to purchase goods and services from other vendors when it is in the best interest of Gwinnett County.

(C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60- 1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and

implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

Pursuant to Federal Rule (C) above, when federal funds are expended by Gwinnett County on any federally assisted construction contract, the equal opportunity clause is incorporated by reference herein.

Does vendor agree to abide by the above?

YES CLP Initials of Authorized Representative of vendor

(D) Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of $2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146- 3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The nonfederal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

Pursuant to Federal Rule (D) above, when federal funds are expended by Gwinnett County, during the term of an award for all contracts and subgrants for construction or repair, the vendor will be in compliance with all applicable Davis-Bacon Act provisions.

Does vendor agree? YES CLP Initials of Authorized Representative of vendor

(E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the

standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

Pursuant to Federal Rule (E) above, when federal funds are expended by Gwinnett County, the vendor certifies that during the term of an award for all contracts by Gwinnett County resulting from this procurement process, the vendor will be in compliance with all applicable provisions of the Contract Work Hours and Safety Standards Act.

Does vendor agree? YES QLP Initials of Authorized Representative of vendor

(F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under 37 CFR §401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

Pursuant to Federal Rule (F) above, when federal funds are expended by Gwinnett County, the vendor certifies that during the term of an award for all contracts by Gwinnett County resulting from this procurement process, the vendor agrees to comply with all applicable requirements as referenced in Federal Rule (F) above.

Does vendor agree? YES QLP Initials of Authorized Representative of vendor

(G) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended—Contracts and subgrants of amounts in excess of $150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251- 1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

Pursuant to Federal Rule (G) above, when federal funds are expended by Gwinnett County, the vendor certifies that during the term of an award for all contracts by Gwinnett County resulting from this procurement process, the vendor agrees to comply with all applicable requirements as referenced in Federal Rule (G) above.

Does vendor agree? YES CRP Initials of Authorized Representative of vendor

(H) Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

Pursuant to Federal Rule (H) above, when federal funds are expended by Gwinnett County, the vendor certifies that during the term of an award for all contracts by Gwinnett County resulting from this procurement process, the vendor certifies that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation by any federal department or agency.

Does vendor agree? YES CRP Initials of Authorized Representative of vendor

(I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or bid for an award exceeding $100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the nonfederal award.

Pursuant to Federal Rule (I) above, when federal funds are expended by Gwinnett, the vendor certifies that during the term and after the awarded term of an award for all contracts by Gwinnett County resulting from this procurement process, the vendor certifies that it is in compliance with all applicable provisions of the Byrd Anti-Lobbying Amendment (31 U.S.C. 1352). The undersigned further certifies that:

(1) No Federal appropriated funds have been paid or will be paid for on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with the awarding of a Federal contract, the making of a Federal grant, the making of a Federal loan, the entering into a cooperative agreement, and the extension, continuation, renewal, amendment, or modification of a Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any

agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all covered sub-awards exceeding $100,000 in Federal funds at all appropriate tiers and that all subrecipients shall certify and disclose accordingly.

Does vendor agree? YES CLP Initials of Authorized Representative of vendor

(J) The Buy America regulation at 49 C.F.R. § 661.13 requires notification of the Buy America requirements in a recipients' bid or request for proposal for federally funded contracts. Recipients can draw on the following language for inclusion in their federally funded procurements. Note that recipients are responsible for including the correct Buy America certification based on what they are acquiring. Recipients should not include both the rolling stock and steel, iron, or manufactured products certificates in the documents unless acquiring both in the same procurement. The contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. part 661, which provide that Federal funds may not be obligated unless all steel, iron, and manufactured products used in federally funded projects are produced in the United States, unless a waiver has been granted by the funding agency or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. § 661.7. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. § 661.11.

The [bidder or offeror] must submit to [Recipient] the appropriate Buy America certification below with its [bid or offer]. Bids or offers that are not accompanied by a completed Buy America certification will be rejected as nonresponsive.

In accordance with 49 C.F.R. § 661.6, for the procurement of steel, iron or manufactured products, use the certifications below.

Certificate of Compliance with Buy America Requirements

The bidder or offeror hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j)(1), and the applicable regulations in 49 C.F.R. part 661.

Date: 04/05/2023

Signature: Correggio L. Peagler, Sr.

Company: Brown and Caldwell

Name: Correggio L. Peagler Sr.

Title: Vice President

(K) The Cargo Preference Act of 1954 at 46 U.S.C. § 55305 and 46 C.F.R. part 381 requirements applies to all contracts involving equipment, materials, or commodities that may be transported by ocean vessels.

The contractor agrees to:

a. to use privately owned United States-Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the underlying contract to the extent such vessels are available at fair and reasonable rates for United States-Flag commercial vessels;
b. to furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo described in the preceding paragraph to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to the funding recipient (through the contractor in the case of a subcontractor's bill-of-lading.); and
c. to include these requirements in all subcontracts issued pursuant to this contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.

Does vendor agree? YES CLL Initials of Authorized Representative of vendor

(L) Huawei Technology Ban - Section 889 of the 2019 National Defense Authorization Act ("NDAA")

- 889(a)(1)(A): directs that agencies may not "procure or obtain . . . any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system." This limitation was implemented by an amendment to the Federal Acquisition Regulation ("FAR") published on August 13, 2019.

- 889(a)(1)(B) directs that agencies may not "enter into a contract (or extend or renew a contract) with an entity that uses any equipment, system, or services that uses covered telecommunications equipment or services as a substantial or essential component of any system." This limitation was implemented by an amendment to the FAR in July 2019, with an effective date of August 13, 2020.
    - Covered telecommunications equipment or services" falls into four categories:
        - Telecommunications equipment produced by Huawei Technologies Company, ZTE Corporation, or any subsidiary or affiliate of either.
        - When to be used for public safety, government facility security, security of critical infrastructure, or other national security purposes, "video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, . . . Dahua Technology Company" or any subsidiary or affiliate of the aforementioned.

- Telecommunications or video surveillance services provided by any of the aforementioned entities.
- Telecommunications or video surveillance equipment produced by or provided by an entity the Secretary of Defense 'reasonably believes' to be an entity connected to the government of the People's Republic of China

- 889(a)(1)(B) directs that agencies may not "enter into a contract (or extend or renew a contract) with an entity that uses any equipment, system, or services that uses covered telecommunications equipment or services as a substantial or essential component of any system." This limitation was implemented by an amendment to the FAR in July 2019, with an effective date of August 13, 2020.

The Contractor agrees to participate in AGENCY's ban established in compliance with Section 889 of the 2019 National Defense Authorization Act.

Does vendor agree? YES CLP Initials of Authorized Representative of vendor

RECORD RETENTION REQUIREMENTS FOR CONTRACTS PAID FOR WITH FEDERAL FUNDS – 2 CFR § 200.333

When federal funds are expended for any contract resulting from this procurement process, the vendor certifies that it will comply with the record retention requirements detailed in 2 CFR § 200.333. The vendor further certifies that vendor will retain all records as required by 2 CFR § 200.333 for a period of three years after grantees or subgrantees submit final expenditure reports or quarterly or annual financial reports, as applicable, and all other pending matters are closed.

Does vendor agree? YES CLP Initials of Authorized Representative of vendor

CERTIFICATION OF COMPLIANCE WITH COMPLIANCE WITH EPA REGULATIONS APPLICABLE TO GRANTS, SUBGRANTS, COOPERATIVE AGREEMENTS, AND CONTRACTS IN EXCESS OF $100,000 OF FEDERAL FUNDS

When federal funds are expended for any contract resulting from this procurement process in excess of $100,000, the vendor certifies that the vendor is in compliance with all applicable standards, orders, regulations, and/or requirements issued pursuant to the Clean Air Act of 1970, as amended (42 U.S.C. 1857(h)), Section 508 of the Clean Water Act, as amended (33 U.S.C. 1368), Executive Order 117389 and Environmental Protection Agency Regulation, 40 CFR Part 15.

Does vendor agree? YES CLP Initials of Authorized Representative of vendor

CERTIFICATION OF COMPLIANCE WITH BUY AMERICA PROVISIONS

Vendor certifies that vendor is in compliance with all applicable provisions of the Buy America Act. Purchases made in accordance with the Buy America Act must still follow the applicable procurement rules calling for free and open competition.

Does vendor agree? YES CPL Initials of Authorized Representative of vendor

CERTIFICATION OF NON-COLLUSION STATEMENT

Vendor certifies under penalty of perjury that its response to this procurement solicitation is in all respects bona fide, fair, and made without collusion or fraud with any person, joint venture, partnership, corporation or other business or legal entity.

Does vendor agree? YES CPL Initials of Authorized Representative of vendor

Vendor agrees to comply with all federal, state, and local laws, rules, regulations and ordinances, as applicable. It is further acknowledged that vendor certifies compliance with all provisions, laws, acts, regulations, etc. as specifically noted above.

Vendor's Name/Company Name: Brown and Caldwell

Address, City, State, and Zip Code: 990 Hammond Dr , Ste 700 Atlanta GA 30328

Phone Number: 770-394-2997 Fax Number: N/A

Printed Name and Title of Authorized Representative: Correggio L. Peagler Sr, Vice President

Email Address: CPeagler@brwncald.com

Signature of Authorized Representative: Correggio L. Peagler Sr

Date: 04/05/2023

UEI # H7UKVAT5

CAGE Code (5 Digits): 3YZU5

GWINNETT COUNTY
DEPARTMENT OF FINANCIAL SERVICES
PURCHASING DIVISION

75 Langley Drive | Lawrenceville, GA 30046-6935
O: 770.822.8720 | F: 770.822.8735
GwinnettCounty.com

Solicitation Name & No. RP003-23- Engineering Design and Support during Preconstruction and Construction of the F. Wayne Hill Water Resources Center Biosolids Dryer Project

CONTRACTOR AFFIDAVIT AND AGREEMENT
(THIS FORM SHOULD BE FULLY COMPLETED AND RETURNED WITH YOUR SUBMITTAL)

By executing this affidavit, the undersigned contractor verifies its compliance with The Illegal Immigration Reform Enhancements for 2013, stating affirmatively that the individual, firm, or corporation which is contracting with the Gwinnett County Board of Commissioners has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security] to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act, in accordance with the applicability provisions and deadlines established therein.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services or the performance of labor pursuant to this contract with the Gwinnett County Board of Commissioners, contractor will secure from such subcontractor(s) similar verification of compliance with the Illegal Immigration Reform and Enforcement Act on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the Gwinnett County Board of Commissioners at the time the subcontractor(s) is retained to perform such service.

168635 — E-Verify * User Identification Number

December 4, 2008 — Date Registered

Wade Trim, Inc. — Legal Company Name

2500 Clean Water Court, Building A, Suite 304 — Street Address

Buford, GA 30519 — City/State/Zip Code

Christopher M. Haney — BY: Authorized Officer or Agent (Contractor Signature)

4.15.23 — Date

Senior Vice President — Title of Authorized Officer or Agent of Contractor

Christopher M. Haney — Printed Name of Authorized Officer or Agent

For Gwinnett County Use Only:

Document ID #_____

Issue Date: _____

Initials: _____

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE
15th DAY OF April, 2023

Kimberly M. Addison
Notary Public
My Commission Expires: 9/18/25

* As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is "E-Verify" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).

KIMBERLY M ADDISON
Notary Public - State of Michigan
County of Wayne
My Commission Expires Sep 18, 2025
Acting in the County of Wayne

GWINNETT COUNTY
DEPARTMENT OF FINANCIAL SERVICES
PURCHASING DIVISION

75 Langley Drive | Lawrenceville, GA 30046-6935
O: 770.822.8720 | F: 770.822.8735
GwinnettCounty.com

Solicitation Name & No. RP003-23- Engineering Design and Support during Preconstruction and Construction of the F. Wayne Hill Water Resources Center Biosolids Dryer Project

CODE OF ETHICS AFFIDAVIT

(THIS FORM SHOULD BE FULLY COMPLETED AND RETURNED WITH YOUR SUBMITTAL AND WILL BE REQUIRED PRIOR TO EVALUATION)

In accordance with Section 54-33 of the Gwinnett County Code of Ordinances the undersigned bidder/proposer makes the following full and complete disclosure under oath, to the best of his/her knowledge, of the name(s) of all elected officials whom it employs or who have a direct or indirect pecuniary interest in or with the bidder/proposer, its affiliates or its subcontractors:

1. Wade Trim, Inc.
(Company Submitting Bid/Proposal)

2. (Please check ☑ **one** box below)

☒ No information to disclose *(complete only section 4 below)*

☐ Disclosed information below *(complete section 3 & section 4 below)*

3. (if additional space is required, please attach list)

Gwinnett County Elected Official Name

Gwinnett County Elected Official Name

Gwinnett County Elected Official Name

Gwinnett County Elected Official Name

4.

BY: Christopher M. Haney
Authorized Officer or Agent Signature

Christopher M. Haney
Printed Name of Authorized Officer or Agent

Senior Vice President
Title of Authorized Officer or Agent of Contractor

Sworn to and subscribed before me this

15 day of April, 2023

Kimberly M. Addison
Notary Public

KIMBERLY M ADDISON
Notary Public - State of Michigan
County of Wayne
My Commission Expires Sep 18, 2025
Acting (seal) County of Wayne

Note: See Gwinnett County Code of Ethics Ordinance EO2011, Sec. 54-33. The ordinance will be available to view in its' entirety at www.gwinnettcounty.com

Failure to return this page as part of your proposal document may result in rejection of proposal.

FIRM INFORMATION

Please include this page as part of the Step I proposal document and again resubmit updated as part of Step II proposal document.

The undersigned acknowledges receipt of the following addenda, listed by number and date appearing on each:

Addendum No. #	Date
Addendum 1	April 14, 2023
Addendum 2	April 17, 2023

Certification Of Non-Collusion in Proposal Preparation Christopher M. Haney 4.17.23
(Signature) **(Date)**

The County requires that all who enter into a contract for the physical performance of services with the County must satisfy O.C.G.A. § 13-10-91 and Rule 300-10-1-.02, in all manner, and such are conditions of the contract. In compliance with the attached specifications, the undersigned offers and agrees, if this quote is accepted by the Board of Commissioners within one-hundred-fifty (150) days of the date of proposal opening, to furnish any or all of the items upon which prices are quoted, at the price set opposite each item, delivered to the designated point(s) within the time specified in the quote schedule. By submission of this proposal, I understand that Gwinnett County uses Electronic Payments for remittance of goods and services. Firms should select their preferred method of electronic payment upon notice of award. For more information on electronic payments, please refer to the Electronic Payment information in the instructions to proposers.

Legal Business Name Wade Trim, Inc.
(If your company is an LLC, you must identify all principals to include addresses and phone numbers in your submittal)

Federal Tax ID 34-1115513

Address The Water Tower, 2500 Clean Water Court, Building A, Suite 304, Buford, GA 30519

Does your company currently have a location within Gwinnett County? Yes [x] No [ ]

Representative Signature Christopher M. Haney

Print Authorized Representative's Name Christopher M. Haney

Telephone Number 470.447.2388 Fax Number NA

E-Mail Address chaney@wadetrim.com

REQUIRED CONTRACT PROVISIONS FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS – APPENDIX II TO 2 CFR PART 200

The following provisions are required and apply when federal funds are expended for any contract resulting from this procurement process.

(A) Contracts for more than the simplified acquisition threshold currently set at $150,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

Pursuant to Federal Rule (A) above, when federal funds are expended, Gwinnett County reserves all rights and privileges under the applicable laws and regulations with respect to this procurement in the event of breach of contract by either party.

Does vendor agree? YES CMM Initials of Authorized Representative of vendor

(B) Termination for cause and for convenience by the grantee or subgrantee including the manner by which it will be effected and the basis for settlement. (All contracts in excess of $10,000).

Pursuant to Federal Rule (B) above, when federal funds are expended, Gwinnett County reserves the right to immediately terminate any agreement in excess of $10,000 resulting from this procurement process in the event of a breach or default of the agreement by Vendor, in the event vendor fails to: (1) meet schedules, deadlines, and/or delivery dates within the time specified in the procurement solicitation, contract, and/or a purchase order; (2) make any payments owed; or (3) otherwise perform in accordance with the contract and/or the procurement solicitation. Gwinnett County also reserves the right to terminate the contract immediately, with written notice to vendor, for convenience, if Gwinnett County believes, in its sole discretion that it is in the best interest of Gwinnett County to do so. The vendor will be compensated for work performed and accepted and goods accepted by Gwinnett County as of the termination date if the contract is terminated for convenience of Gwinnett County. Any award under this procurement process is not exclusive and Gwinnett County reserves the right to purchase goods and services from other vendors when it is in the best interest of Gwinnett County.

(C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60- 1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and

implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

Pursuant to Federal Rule (C) above, when federal funds are expended by Gwinnett County on any federally assisted construction contract, the equal opportunity clause is incorporated by reference herein.

Does vendor agree to abide by the above?

YES CMM Initials of Authorized Representative of vendor

(D) Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of $2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146- 3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The nonfederal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

Pursuant to Federal Rule (D) above, when federal funds are expended by Gwinnett County, during the term of an award for all contracts and subgrants for construction or repair, the vendor will be in compliance with all applicable Davis-Bacon Act provisions.

Does vendor agree? YES CMM Initials of Authorized Representative of vendor

(E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the

standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

Pursuant to Federal Rule (E) above, when federal funds are expended by Gwinnett County, the vendor certifies that during the term of an award for all contracts by Gwinnett County resulting from this procurement process, the vendor will be in compliance with all applicable provisions of the Contract Work Hours and Safety Standards Act.

Does vendor agree? YES CMJ Initials of Authorized Representative of vendor

(F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under 37 CFR §401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

Pursuant to Federal Rule (F) above, when federal funds are expended by Gwinnett County, the vendor certifies that during the term of an award for all contracts by Gwinnett County resulting from this procurement process, the vendor agrees to comply with all applicable requirements as referenced in Federal Rule (F) above.

Does vendor agree? YES CMJ Initials of Authorized Representative of vendor

(G) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended—Contracts and subgrants of amounts in excess of $150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251- 1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

Pursuant to Federal Rule (G) above, when federal funds are expended by Gwinnett County, the vendor certifies that during the term of an award for all contracts by Gwinnett County resulting from this procurement process, the vendor agrees to comply with all applicable requirements as referenced in Federal Rule (G) above.

Does vendor agree? YES CMM Initials of Authorized Representative of vendor

(H) Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

Pursuant to Federal Rule (H) above, when federal funds are expended by Gwinnett County, the vendor certifies that during the term of an award for all contracts by Gwinnett County resulting from this procurement process, the vendor certifies that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation by any federal department or agency.

Does vendor agree? YES CMM Initials of Authorized Representative of vendor

(I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or bid for an award exceeding $100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the nonfederal award.

Pursuant to Federal Rule (I) above, when federal funds are expended by Gwinnett, the vendor certifies that during the term and after the awarded term of an award for all contracts by Gwinnett County resulting from this procurement process, the vendor certifies that it is in compliance with all applicable provisions of the Byrd Anti-Lobbying Amendment (31 U.S.C. 1352). The undersigned further certifies that:

(1) No Federal appropriated funds have been paid or will be paid for on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with the awarding of a Federal contract, the making of a Federal grant, the making of a Federal loan, the entering into a cooperative agreement, and the extension, continuation, renewal, amendment, or modification of a Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any

agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all covered sub-awards exceeding $100,000 in Federal funds at all appropriate tiers and that all subrecipients shall certify and disclose accordingly.

Does vendor agree? YES CMH Initials of Authorized Representative of vendor

(J) The Buy America regulation at 49 C.F.R. § 661.13 requires notification of the Buy America requirements in a recipients' bid or request for proposal for federally funded contracts. Recipients can draw on the following language for inclusion in their federally funded procurements. Note that recipients are responsible for including the correct Buy America certification based on what they are acquiring. Recipients should not include both the rolling stock and steel, iron, or manufactured products certificates in the documents unless acquiring both in the same procurement. The contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. part 661, which provide that Federal funds may not be obligated unless all steel, iron, and manufactured products used in federally funded projects are produced in the United States, unless a waiver has been granted by the funding agency or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. § 661.7. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. § 661.11.

The [bidder or offeror] must submit to [Recipient] the appropriate Buy America certification below with its [bid or offer]. Bids or offers that are not accompanied by a completed Buy America certification will be rejected as nonresponsive.

In accordance with 49 C.F.R. § 661.6, for the procurement of steel, iron or manufactured products, use the certifications below.

Certificate of Compliance with Buy America Requirements

The bidder or offeror hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j)(1), and the applicable regulations in 49 C.F.R. part 661.

Date: April 17, 2023

Signature: Christopher M. Haney

Company: Wade Trim, Inc.

Name: Christopher M. Haney

Title: Senior Vice President

(K) The Cargo Preference Act of 1954 at 46 U.S.C. § 55305 and 46 C.F.R. part 381 requirements applies to all contracts involving equipment, materials, or commodities that may be transported by ocean vessels.

The contractor agrees to:

a. to use privately owned United States-Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the underlying contract to the extent such vessels are available at fair and reasonable rates for United States-Flag commercial vessels;
b. to furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo described in the preceding paragraph to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to the funding recipient (through the contractor in the case of a subcontractor's bill-of-lading.); and
c. to include these requirements in all subcontracts issued pursuant to this contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.

Does vendor agree? YES  Initials of Authorized Representative of vendor

(L) Huawei Technology Ban - Section 889 of the 2019 National Defense Authorization Act ("NDAA")

- 889(a)(1)(A): directs that agencies may not "procure or obtain . . . any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system." This limitation was implemented by an amendment to the Federal Acquisition Regulation ("FAR") published on August 13, 2019.

- 889(a)(1)(B) directs that agencies may not "enter into a contract (or extend or renew a contract) with an entity that uses any equipment, system, or services that uses covered telecommunications equipment or services as a substantial or essential component of any system." This limitation was implemented by an amendment to the FAR in July 2019, with an effective date of August 13, 2020.
    - Covered telecommunications equipment or services" falls into four categories:
        - Telecommunications equipment produced by Huawei Technologies Company, ZTE Corporation, or any subsidiary or affiliate of either.
        - When to be used for public safety, government facility security, security of critical infrastructure, or other national security purposes, "video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, . . . Dahua Technology Company" or any subsidiary or affiliate of the aforementioned.

- Telecommunications or video surveillance services provided by any of the aforementioned entities.
- Telecommunications or video surveillance equipment produced by or provided by an entity the Secretary of Defense 'reasonably believes' to be an entity connected to the government of the People's Republic of China

- 889(a)(1)(B) directs that agencies may not "enter into a contract (or extend or renew a contract) with an entity that uses any equipment, system, or services that uses covered telecommunications equipment or services as a substantial or essential component of any system." This limitation was implemented by an amendment to the FAR in July 2019, with an effective date of August 13, 2020.

The Contractor agrees to participate in AGENCY's ban established in compliance with Section 889 of the 2019 National Defense Authorization Act.

Does vendor agree? YES CMM Initials of Authorized Representative of vendor

RECORD RETENTION REQUIREMENTS FOR CONTRACTS PAID FOR WITH FEDERAL FUNDS – 2 CFR § 200.333

When federal funds are expended for any contract resulting from this procurement process, the vendor certifies that it will comply with the record retention requirements detailed in 2 CFR § 200.333. The vendor further certifies that vendor will retain all records as required by 2 CFR § 200.333 for a period of three years after grantees or subgrantees submit final expenditure reports or quarterly or annual financial reports, as applicable, and all other pending matters are closed.

Does vendor agree? YES CMM Initials of Authorized Representative of vendor

CERTIFICATION OF COMPLIANCE WITH COMPLIANCE WITH EPA REGULATIONS APPLICABLE TO GRANTS, SUBGRANTS, COOPERATIVE AGREEMENTS, AND CONTRACTS IN EXCESS OF $100,000 OF FEDERAL FUNDS

When federal funds are expended for any contract resulting from this procurement process in excess of $100,000, the vendor certifies that the vendor is in compliance with all applicable standards, orders, regulations, and/or requirements issued pursuant to the Clean Air Act of 1970, as amended (42 U.S.C. 1857(h)), Section 508 of the Clean Water Act, as amended (33 U.S.C. 1368), Executive Order 117389 and Environmental Protection Agency Regulation, 40 CFR Part 15.

Does vendor agree? YES CMM Initials of Authorized Representative of vendor

CERTIFICATION OF COMPLIANCE WITH BUY AMERICA PROVISIONS

Vendor certifies that vendor is in compliance with all applicable provisions of the Buy America Act. Purchases made in accordance with the Buy America Act must still follow the applicable procurement rules calling for free and open competition.

Does vendor agree? YES CMH Initials of Authorized Representative of vendor

CERTIFICATION OF NON-COLLUSION STATEMENT

Vendor certifies under penalty of perjury that its response to this procurement solicitation is in all respects bona fide, fair, and made without collusion or fraud with any person, joint venture, partnership, corporation or other business or legal entity.

Does vendor agree? YES CMH Initials of Authorized Representative of vendor

Vendor agrees to comply with all federal, state, and local laws, rules, regulations and ordinances, as applicable. It is further acknowledged that vendor certifies compliance with all provisions, laws, acts, regulations, etc. as specifically noted above.

Vendor's Name/Company Name: Wade Trim, Inc

Address, City, State, and Zip Code: 2500 Clean Water Court, Building A, Suite304, Buford, GA 30519 Phone Number: 470.4472388 Fax Number: NA

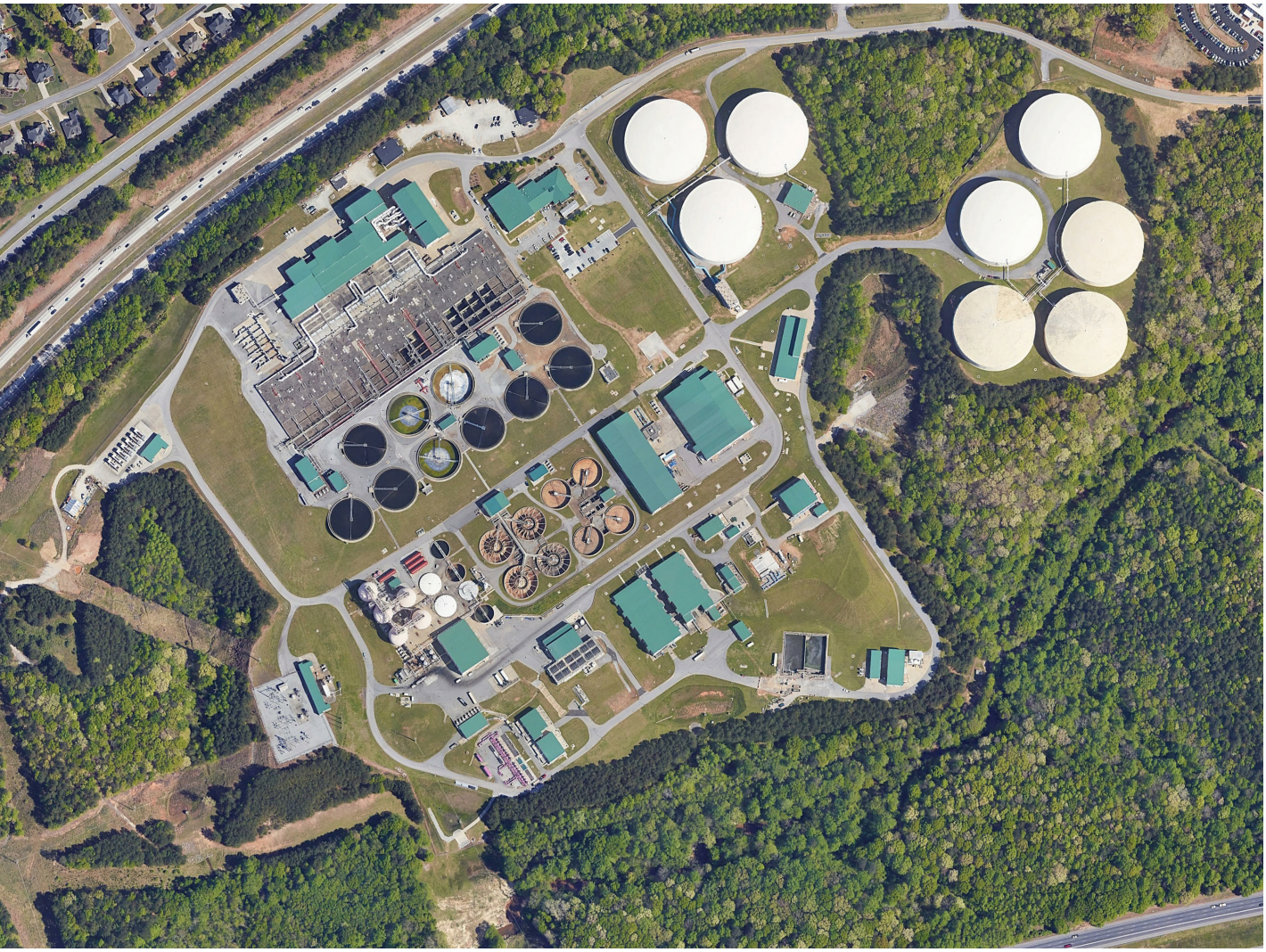
Printed Name and Title of Authorized Representative: Christopher M. Haney, Senior Vice President Email Address: chaney@wadetrim.com

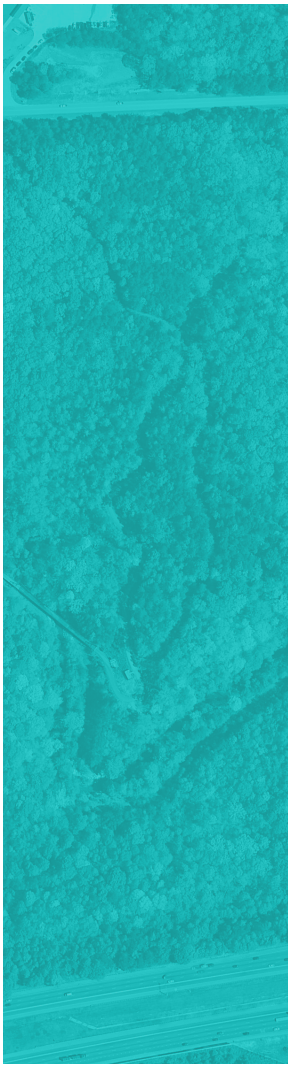
Signature of Authorized Representative: Christopher M Haney

Date: April 17, 2023 Federal Tax ID #

UEI # J3GMT46UBPU5

CAGE Code (5 Digits): 1E7M4





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