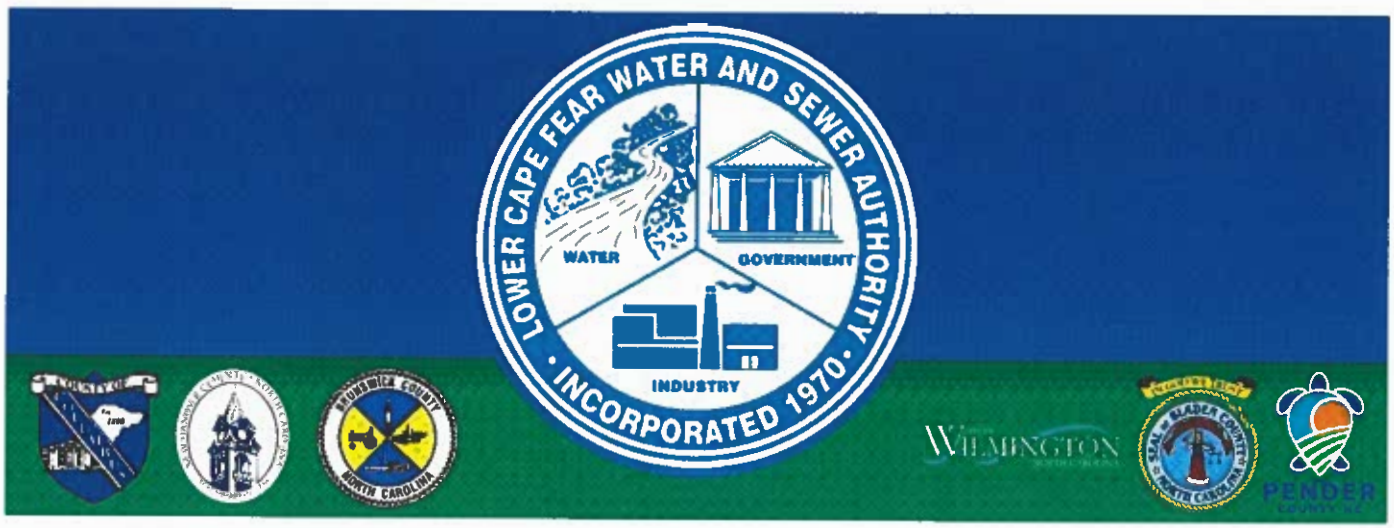


AGENDA
Lower Cape Fear Water & Sewer Authority
1107 New Pointe Boulevard, Suite # 17, Leland, North Carolina
9:00 a.m. – Regular Monthly Board Meeting
January 9, 2023

MEETING CALL TO ORDER: Chairman Blanchard

INVOCATION

PLEDGE OF ALLEGIANCE

APPROVAL OF CONSENT AGENDA

C1 - Minutes of December 12, 2022, Regular Board Meeting
C2 - Minutes of December 12, 2022, Personnel Committee Meeting
C3 - Kings Bluff Monthly Operations and Maintenance Report
C4 - Bladen Bluffs Monthly Operations and Maintenance Reports

PRESENTATION TO:

Charlie Rivenbark, City of Wilmington Representative, by Chairman Norwood Blanchard

OLD BUSINESS

OB1-Consider award of Owners Advisor

NEW BUSINESS

NB1 - Presentation of Annual Audit Report for Fiscal Year Ending June 30, 2022
NB2 - Appointment of Calendar Year 2023 Finance Committee by Chairman Blanchard
NB3 - Appointment of Calendar Year 2023 Personnel Committee by Chairman Blanchard
NB4 - Appointment of Calendar Year 2023 Long Range Planning Committee by Chairman Blanchard

ENGINEER'S COMMENTS

ATTORNEY COMMENTS

EXECUTIVE DIRECTOR REPORT

EDR1–Comments on Customers' Water Usage and Raw Water Revenue for Fiscal Year to Date Ending December 31, 2022
EDR2–Operating Budget Status, Ending November 30, 2022.
EDR3–Summary of Activities

DIRECTOR'S COMMENTS AND/OR FUTURE AGENDA ITEMS

PUBLIC COMMENT

ADJOURNMENT

The next board meeting of the Lower Cape Fear Water & Sewer Authority is scheduled for Monday, February 13th at 9:00 a.m. in the Authority's office located at 1107 New Pointe Boulevard, Suite 17, Leland, North Carolina.

Consent Agenda (CA)	Lower Cape Fear Water & Sewer Authority

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: January 9, 2023

Re: Consent Agenda

Reviewed and approved as to form: MATTHEW A. NICHOLS, AUTHORITY ATTORNEY

Please find enclosed the items of a routine nature for consideration and approval by the Board of Directors with one motion. However, that does not preclude a board member from selecting an item to be voted on individually, if so desired.

C1- Minutes of December 12, 2022, Regular Board Meeting
C2- Minutes of December 12, 2022, Personnel Committee Meeting
C3- Kings Bluff Monthly Operations and Maintenance Report
C4- Bladen Bluffs Monthly Operations and Maintenance Report

Action Requested: Motion to approve/disapprove Consent Agenda.

Lower Cape Fear Water & Sewer Authority
Regular Board Meeting Minutes
December 12th, 2022

Chairman Rivenbark called to order the Authority meeting scheduled on December 12th, 2022, at 9:00 a.m. and welcomed everyone present. The meeting was held at the Authority's office located at 1107 New Pointe Boulevard, Suite 17, Leland, North Carolina. Director Sue gave the invocation.

Roll Call by Chairman Rivenbark:

Present: Norwood Blanchard, Patrick DeVane, Harry Knight, Jackie Newton, Scott Phillips, Charlie Rivenbark, Bill Saffo, Chris Smith, Bill Sue, Frank Williams, and Rob Zapple

Present by Virtual Attendance: Al Leonard and Phil Norris

Absent: Wayne Edge

Staff: Tim H. Holloman, Executive Director; Matthew Nichols, General Counsel; Sam Shore, COG; and Danielle Hertzog, Financial Administration Assistant

Guests Present: Glenn Walker, Brunswick County Water Resources Manager; Jorgen Holmberg, Computer Warriors; Jordan Clark, Computer Warriors; and James Proctor, Pender County Utilities Deputy Director

Guests Virtual Attendance: John Nichols, Brunswick County Public Utilities Director; Tom Hendrick, Pender County Utilities Water Treatment Plant Superintendent; Craig Wilson, Engineering Manager Cape Fear Public Utility Authority; and Kenny Keel, Pender County Public Utilities Director

PLEDGE OF ALLEGIANCE: Chairman Rivenbark led the Pledge of Allegiance.

APPROVAL OF CONSENT AGENDA

C1 - Minutes of November 14, 2022, Regular Board Meeting
C2 - Kings Bluff Monthly Operations and Maintenance
C3 - Bladen Bluffs Monthly Operations and Maintenance Report
C4 – Line-Item Adjustment for October 31, 2022
C5 – Resolution accepting Bladen Bluffs Source Water Resiliency and Response Plan

Motion: Director Zapple **MOVED**; seconded by Director Blanchard, approval of the Consent Agenda Items C1-C5 as presented. Upon vote, the **MOTION CARRIED UNANIMOUSLY.**

	For	Against	Abstained	Absent
Norwood Blanchard	X			
Patrick DeVane	X			
Wayne Edge				X
Harry Knight	X			
Al Leonard	X			
Jackie Newton	X			
Phil Norris	X			
Scott Phillips	X			
Charlie Rivenbark	X			
Bill Saffo	X			
Chris Smith	X			
Bill Sue	X			
Frank Williams	X			
Rob Zapple	X			
	13	0	0	1

NEW BUSINESS

NB1- Election of Authority's Board of Directors Officers for the term of January 1, 2023, until December 31, 2023

Chairman Rivenbark presented the following slate of officers for board consideration for the term of January 1, 2023, to December 31, 2023. Per Bylaws of the Authority (Article III. - Officers 1.), the chairmanship shall rotate among the political subdivisions, with Pender County being next in the rotation schedule.

Chairman: Norwood Blanchard (Pender County)
Vice-Chairman: Harry Knight (New Hanover County)
Secretary: Patrick DeVane (Bladen County)
Treasurer: Phil Norris (Brunswick County)
Assistant Treasurer: Al Leonard (Columbus County)

Motion: Director Williams **MOVED**; seconded by Director Zapple, approval of the Board of Directors Officers for the term of January 1, 2023, until December 31, 2023. Upon vote, the **MOTION CARRIED UNANIMOUSLY.**

	For	Against	Abstained	Absent
Norwood Blanchard	X			
Wayne Edge				X
Patrick DeVane	X			
Harry Knight	X			
Al Leonard	X			
Jackie Newton	X			
Phil Norris	X			
Scott Phillips	X			
Charlie Rivenbark	X			
Bill Saffo	X			
Chris Smith	X			
Bill Sue	X			
Frank Williams	X			
Rob Zapple	X			
	13	0	0	1

NB2- Consider Award of Professional Surveying Services

Executive Director Holloman stated submittals were received from ESP Associates Inc, McKim & Creed, SEPI, and Steward. Holloman advised all four companies would do an outstanding job and would like the board to suggest which proposal they would like to award. Director Zapple recommended going with McKim and Creed with the history LCFWASA has with McKim & Creed.

Motion: Director Zapple **MOVED**; seconded by Director Phillips, approval to award McKim & Creed the surveying service. Upon vote, the **MOTION CARRIED UNANIMOUSLY**.

	For	Against	Abstained	Absent
Norwood Blanchard	X			
Wayne Edge				X
Patrick DeVane	X			
Harry Knight	X			
Al Leonard	X			
Jackie Newton	X			
Phil Norris	X			
Scott Phillips	X			
Charlie Rivenbark	X			
Bill Saffo	X			
Chris Smith	X			
Bill Sue	X			
Frank Williams	X			
Rob Zapple	X			
	13	0	0	1

NB3- Resolution Awarding Water Rate Study and Shared Cost Methodology for the Lower Cape Fear Water and Sewer Authority

Executive Director Holloman stated submittals were received from NewGen Strategies & Solutions, Raftelis, and Willdan Financial. Executive Director Holloman recommended Willdan Financial due to working with local government in the past.

Motion: Director Knight **MOVED**; seconded by Director Saffo, approval of Resolution Awarding Water Rate Study and Shared Cost Methodology for the Lower Cape Fear Water and Sewer Authority as presented. Upon vote, the **MOTION CARRIED UNANIMOUSLY**.

	For	Against	Abstained	Absent
Norwood Blanchard	X			
Wayne Edge				X
Patrick DeVane	X			
Harry Knight	X			
Al Leonard	X			
Jackie Newton	X			
Phil Norris	X			
Scott Phillips	X			
Charlie Rivenbark	X			
Bill Saffo	X			
Chris Smith	X			
Bill Sue	X			
Frank Williams	X			
Rob Zapple	X			
	13	0	0	1

NB4- Resolution Authorizing request for the Design Build of a 10 mile 48" parallel line for the Lower Cape Fear Water and Sewer Authority

Executive Director Holloman stated the traditional path is design, bid, and building. The reason for doing the design-build first is the estimated cost savings. We don't have a firm number; however, since you are designing with the contractor, you can avoid concerns at the end of the project.

Motion: Director DeVane **MOVED**; seconded by Director Blanchard, approval of Resolution Authorizing request for the Design Build of a 10 mile 48" parallel line for the Lower Cape Fear Water and Sewer Authority as presented. Upon vote, the **MOTION CARRIED UNANIMOUSLY**.

	For	Against	Abstained	Absent
Norwood Blanchard	X			
Wayne Edge				X
Patrick DeVane	X			
Harry Knight	X			
Al Leonard	X			
Jackie Newton	X			
Phil Norris	X			
Scott Phillips	X			
Charlie Rivenbark	X			
Bill Saffo	X			
Chris Smith	X			
Bill Sue	X			
Frank Williams	X			
Rob Zapple	X			
	13	0	0	1

NB5- Resolution Approving an Interlocal Agreement for a Phased 10 Mile Parallel Raw Water Line Project for the Lower Cape Fear Water and Sewer Authority

Matthew Nichols advised this agreement is acceptable with CFPUA and Brunswick County. Mr. Nichols is awaiting comments from Pender County. This agreement is not the final copy. The final details are still being worked out. The resolution authorizes the chairman to sign it once the agreement is finalized. Matthew Nichols wanted to get more information on proportional cost share for easements.

Motion: Director DeVane **MOVED**; seconded by Director Blanchard, approval of Resolution Approving an Interlocal Agreement for a Phased 10 Mile Parallel Raw Water Line Project for the Lower Cape Fear Water and Sewer Authority as presented. Upon vote, the **MOTION CARRIED UNANIMOUSLY**.

	For	Against	Abstained	Absent
Norwood Blanchard	X			
Wayne Edge				X
Patrick DeVane	X			
Harry Knight	X			
Al Leonard	X			
Jackie Newton	X			
Phil Norris	X			
Scott Phillips	X			
Charlie Rivenbark	X			
Bill Saffo	X			
Chris Smith	X			
Bill Sue	X			
Frank Williams	X			
Rob Zapple	X			
	13	0	0	1

NB6- Approval of the Authority's 2023 Regular Scheduled Meetings Calendar

Executive Director Holloman advised he will be out of the country on August 14, 2023, for the World Jamboree. Executive Director Holloman checked with Matthew Nichols, and the meeting could be canceled or moved to August 21, 2023. Director Newton wanted to know what Executive Director Holloman would recommend. Executive Director Holloman urged to move the meeting to August 21, 2023.

Motion: Director Newton **MOVED**; seconded by Director Zapple, approval to move the meeting to August 21, 2023. Upon vote, the **MOTION CARRIED UNANIMOUSLY**.

	For	Against	Abstained	Absent
Norwood Blanchard	X			
Wayne Edge				X
Patrick DeVane	X			
Harry Knight	X			
Al Leonard	X			
Jackie Newton	X			
Phil Norris	X			
Scott Phillips	X			
Charlie Rivenbark	X			
Bill Saffo	X			
Chris Smith	X			
Bill Sue	X			
Frank Williams	X			
Rob Zapple	X			
	13	0	0	1

ENGINEER'S COMMENTS

No comments

ATTORNEY COMMENTS

No comments

EXECUTIVE DIRECTOR REPORT

EDR1 – Comments on Customers' Water Usage and Raw Water Revenue for Fiscal Year to Date Ending November 30, 2022

Executive Director Holloman reported that during November 2022, Brunswick County and CFPUA were above projections. Pender County was right on target. Monthly revenue was up last month.

DIRECTOR'S COMMENTS AND/OR FUTURE AGENDA ITEMS

Director Zapple would like a letter sent concerning the sand mining on 421 Hwy.

PUBLIC COMMENT

No comments

ADJOURNMENT

There being no further business, Chairman Rivenbark adjourned the meeting at 9:29 a.m.

Respectfully Submitted:

_____

Harry Knight, Secretary

Lower Cape Fear Water & Sewer Authority

Personnel Committee Meeting Minutes

December 12th, 2022

Chairman Rivenbark called to order the Finance Committee Meeting on December 12th, 2022, at 8:30 a.m. The meeting was held at the Authority's office located at 1107 New Pointe Boulevard, Suite 17, Leland, North Carolina.

Present: Harry Knight, Charlie Rivenbark, and William Sue

Present by Virtual Attendance: None

Absent: Wayne Edge, Al Leonard, Jackie Newton, and Bill Saffo

Staff: Tim Holloman, Executive Director; Matthew Nichols, General Counsel; Sam Shore, COG; and Danielle Hertzog, Financial Administrative Assistant

Guest: Patrick DeVane, Norwood Blanchard, Jorgen Holmberg, Computer Warriors, and Jordan Clark, Computer Warriors

Discussion: Personnel Committee Meeting Calendar for 2023

Executive Director Holloman proposed that the personnel committee continue to meet Quartey.

Discussion: Update on Financial Administration Assistant Clerk Certification Course for the calendar year 2023

Executive Director Holloman stated that Danielle Hertzog is scheduled for the Clerk Certification course starting in February 2023.

Discussion: 401K Contribution

Executive Director Holloman advised that LCFWASA currently contributes 3% with no required match but would like the committee to consider contributing up to 6% only when matched by the employee. All present personnel committee members are on board with this plan but will hold the matter until the March 2023 meeting to review it with all the committee members.

Discussion: Vacation

Executive Director Holloman proposed allowing employees to redeem up to 37.5 hours of vacation time for payment if they have 40 hours of vacation leave remaining for the upcoming year. All present personnel committee members are on board with this plan but will hold the matter until the March 2023 meeting to review it with all the committee members.

ADJOURNMENT

There being no further business, Chairman Rivenbark adjourned the meeting at 8:36 a.m.

Respectfully Submitted,

_____

Tim Holloman, Executive Director

COUNTY OF BRUNSWICK
PUBLIC UTILITIES DEPARTMENT
Kings Bluff Pump Station

246 Private Road
Riegelwood, NC 28456
(910) 655-4799 Office
(910) 655-4798 FAX

TO: Tim Holloman

FROM: Greg Lazorchak

DATE: 1/1/2023

SUBJECT: Monthly maintenance report for December 2022

Mr. Holloman,

The Maintenance and Operations of the king's bluff facility for the month of December were performed as prescribed in the station SOP'S and other items are as follows.

The diesel drive booster pumps along with the standby SCADA generator located at the raw tank and the SCADA generator located at INVISTA / CFPUA vaults off HWY 421 were run and tested weekly and verified standby ready.

KB personnel completed all locates issued by the 811 system.

KB personnel sanded and painted the floor in the old control room.

KB personnel changed belt, fan support on pump #3, and battery charger at raw tank.

KB personnel cleared away debris, felled tree, and trash at Raw Tank.

KB personnel performed maintenance on Diesel containment overflow at generator building.

KB personnel Assisted with off-load of spare pipe.

KB personnel fixed airline going toward compressor on river.

KB personnel completed regular screen blow off at river.

KB personnel changed leaking valve on compressor line in wet well.

KB personnel successively performed Power curtailment as requested by Duke energy.

KB personnel thoroughly inspected whole right of way.

KB personnel assisted Underwood Pump Co. with disassembly of Pump #5.

Contractors:

Cleaning crew cleaned Kings Bluff office.

Thank you,
Greg Lazorchak

Smithfield®

To: Tim Holloman - LCFWASA

From: James Kern – Bladen Bluffs SWTP ORC

Date: 1/3/23

Subject: December 2022 Operations

During the month of December, Bladen Bluffs SWTP operated a total of 19 days, treating 46.15 million gallons of water.

We used:

37,211 lbs. of aluminum sulfate (Alum)

8,881 lbs. of sodium hydroxide (Caustic)

1,176 lbs. of sodium hypochlorite (2,362 gallons of 6% Chlorine Bleach)

James Kern
Water Treatment Plant
Supervisor

Smithfield
Good food. Responsibly.®

(910) 862-3114
(910) 862-3146
(910) 733-0016 mobile
jkern@smithfield.com

Bladen Bluffs Surface Water Treatment Plant
17014 Highway 87 West
Tar Heel, NC 28392
www.smithfieldfoods.com

Bladen Bluffs SWTP Maintenance Report

Date: 1/3/2023

ISSUE:	PLAN OF ACTION:
Air on finished water line (from GAC)	Installed trial valves – making modifications
All PLC need updated	Getting quotes
Found small leak in lagoon liner	Contractor has inspected
Clearwells Inspection	Inspection COMPLETE, awaiting recommendations, quote approved
Lost signal to three cameras at river	IN PROGRESS – hired new contractor
Vault intrusion electrical needs sealed	Getting quote
Replacing all faded ARC Flash/safety outdoor labels	Scheduled
Cl2 leak	FIXED
Sump Pump issue in pipe gallery	FIXED
Post Clearwell CL17 not working	FIXED
CT708 pump #2 solenoid not working	FIXED
Need new keypad/intercom system front gate	Obtaining quote

Monthly Operating Reports (MORs) Summary

(No user data entry – all values are auto-populated.)

Year:	2022	**PWS Name:**	Bladen Bluffs Water System	**PWSID# :**	NC5009012
Month:	December	**Facility Name:**	Bladen Bluff		

Combined Filter Effluent (CFE)Turbidity

Samples exceeding 1 NTU (count):	0	Number of samples required:	98
Samples exceeding .3 NTU (count):	0	Number of samples taken:	98
Samples exceeding .3 NTU (pct):	0.0%	Highest single turbidity reading NTU:	0.116
		Monthly average turbidity NTU:	0.080

Individual Filter Effluent (IFE) Turbidity

1)	Was each filter continuously monitored for turbidity?	Yes	X	No	
2)	Was each filter's monitoring results recorded every 15 minutes?	Yes	X	No	
3)	Was there a failure of the continuous turbidity monitoring equipment?	Yes		No	X
4)	Was any individual filter turbidity level > 1.0 NTU in two consecutive measurements ?	Yes		No	X
5)	Was any individual filter turbidity level > 0.5 NTU in two consecutive measurements at the end of 4 hours of operation after the filter has been backwashed or otherwise taken offline ?	Yes		No	X
6)	Was any individual filter turbidity level > 1.0 NTU in two consecutive measurements in each 3 consecutive months ?	Yes		No	X
7)	Was any individual filter turbidity level > 2.0 NTU in two consecutive measurements in 2 consecutive months ?	Yes		No	X

Entry Point Residual Disinfectant Concentration (EPRD)

Disinfectant Used	Chlorine	Number of samples required	98
Minimum EPRD concentration	1.0800	Number of samples taken	98

Distribution Residual Disinfectant Concentration

Number of samples under 0.010 mg/L (without any detectable) excluding where HPC is ≤ 500/mL: 0

Contact Time (CT) Ratio

Lowest CT ratio reading	14.73	Number of CT ratios required	19
Number of CT ratios below 1.0	0	Number of CT ratios calculated	19

Remarks From General Info Worksheet

☑ By checking this box, the ORC certifies that the requirements of 15A NCAC 18C .1301 "General Requirements", .1302 "Tests, Forms, and Reporting", and .1303 "Facility Oversight" have been met for the month of December, 2022 and that records documenting compliance with this rule are maintained on the premises and available for inspection upon request.

NCDENR/DEH
PWSS
Version: V02.10-00

COMPLETED BY: James Kern

CERTIFICATE GRADE: A - Surface

CERTIFICATE NUMBER: 120147

OLD BUSINESS (OB1)	Lower Cape Fear Water & Sewer Authority

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: January 9, 2023

Re: Consider award Owners Advisor for the Design Build of a 10-mile 48" parallel line for the Lower Cape Fear Water and Sewer Authority

Reviewed and approved as to form: MATTHEW A. NICHOLS, AUTHORITY ATTORNEY

Background: The Lower Cape Fear Water and Sewer Authority (Authority) serves Brunswick, Bladen, Pender, New Hanover, Columbus Counties, and the City of Wilmington, with a Board of Directors representing those local governments. As the largest regional water system in Eastern North Carolina, the Authority's primary role is to provide raw water from Cape Fear to supply treatment facilities that serve 550,000 customers.

The Lower Cape Fear Water & Sewer Authority (Authority) has evaluated the feasibility of paralleling the 10-mile, 48-inch raw water main that supplies Pender County, CFPUA, and several industries on US 421. The route of the existing pipeline begins at the 3-million-gallon ground reservoir located near the Brunswick County Northwest Water Plant and traverses north and east through Brunswick, Pender, and New Hanover Counties to US Highway 421. The main runs southward along US 421 and terminates at the CFPUA meter vault adjacent to the Stepan facility (formerly Invista).

On November 14 the LCFWASA Board approved seeking an Owner's Advisor for the 10-mile parallel line project. The request for qualifications was duly advertised with two firms submitting. The Authority has been awarded funding for a partial project and wishes to proceed to secure an Owner's representative to review, assist and evaluate a design-build project for a 10 Mile Parallel 48" line. The review committee convened after the print agenda and expects to make a recommendation to proceed.

Action Requested: Motion to approve

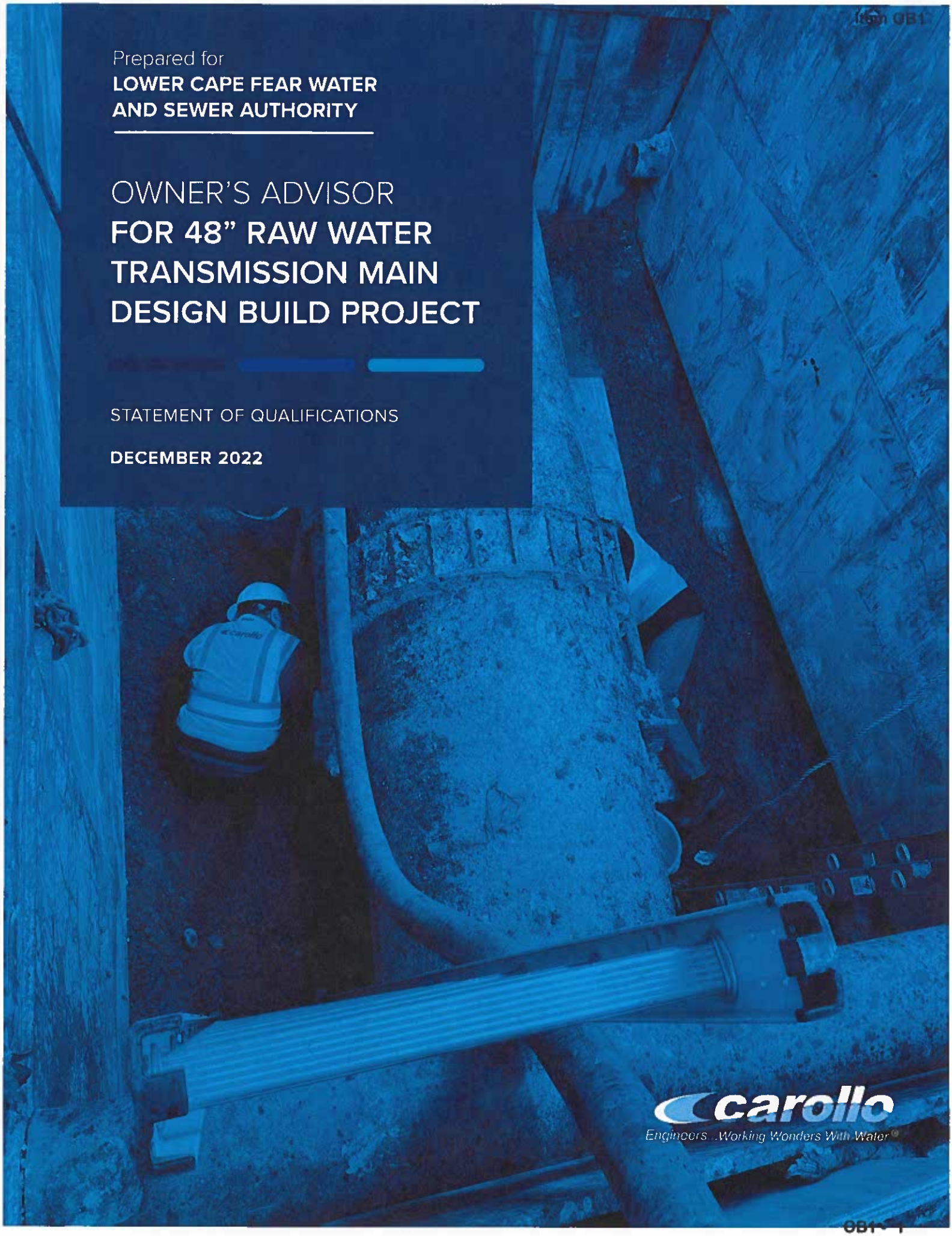
Item OB1

Prepared for
LOWER CAPE FEAR WATER AND SEWER AUTHORITY

OWNER'S ADVISOR FOR 48" RAW WATER TRANSMISSION MAIN DESIGN BUILD PROJECT

STATEMENT OF QUALIFICATIONS

DECEMBER 2022



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OB1-1

carollo
Engineers...Working Wonders With Water®

901 North Stuart Street, Suite 403, Arlington, VA 22203-1821
P: 703.448.1875 F.703.258.1360

December 16, 2022

Carollo Engineers, Inc. meets all insurance and North Carolina registration requirements to perform engineering services for the Lower Cape Fear Water and Sewer Authority, as required by this Request for Qualifications.

Mr. Tim Holloman, Executive Director
Lower Cape Fear Water and Sewer Authority
1107 New Pointe Blvd., Suite 17
Leland, NC 28451

Subject: Qualifications for Owner's Advisor for 48-inch Raw Water Transmission Main Design Build Project

Dear Mr. Holloman:

Rapid growth throughout the Wilmington Region has created immense infrastructure planning and management challenges for regional water and wastewater utilities. In addition, aging infrastructure has revealed systemic challenges in maintaining reliable water supply for the Lower Cape Fear Water and Sewer Authority (LCFWASA). LCFWASA recently received $23.5 million from the American Rescue Plan Act (ARPA) to fund a new 10-mile raw water transmission main. The proposed 48-inch line will provide much needed water supply redundancy for your 550,000 customers.

With limited staff, a challenging pipeline route, and ARPA funding deadlines, LCFWASA needs an Owner's Advisor you can trust to execute this important and complex Progressive Design-Build (PDB) project. Carollo Engineers is the right partner because we excel in several key areas:

- **A team that will protect your interest.** LCFWASA chose PDB as the delivery model for this project because you are looking for design and construction ideas and input to save money and meet the schedule requirements for your funding. Carollo is skilled at striking the right balance between indicative design criteria (those that may be changed by the design-builder) and prescriptive design criteria (those that cannot be changed without proper justification), allowing for flexibility and innovation. *Among the water industry, Carollo has managed more than $24 billion as Owner's Advisor, including the two largest water/wastewater PDB contracts in the U.S.* We will work alongside your staff and apply lessons learned through prior experience to make the right decisions for LCFWASA.

- **Leading Practitioners in PDB Delivery.** Our proposed team is deeply entrenched in alternative project delivery methods, including PDB. Carollo team members bring relevant expertise to facilitate an effective procurement process coupled with proactive DB-tailored controls that lead to cost savings and owner protection. *Jason Garside and Scott Vanier are recognized experts in PDB management and were leading contributors in the development of the Water Design-Build Council's Progressive Design-Build Procurement Guidelines.*

- **People you can work with, every day.** The relationship between Owner and Owner's Advisor is extremely important. *Virginia-based Project Manager Mike Morris' experience on more than 15 Owner's Advisor projects which included DB delivery, has taught him that collaborative, open, and transparent teams provide the best path to success.* The people we have proposed for this team all bring a fresh, positive, and team-oriented attitude to their work. We aim to listen first, be practical and results-driven in what we do, and ultimately enjoy the journey to making the water supply in the Wilmington Region more resilient for years to come.

We understand the challenges in front of you because we have been there. We are confident that as your project partner and "trusted advisor" we can successfully and collaboratively manage and deliver a project that meets LCFWASA's and the region's needs and exceeds the expectations of its stakeholders.

Sincerely,

CAROLLO ENGINEERS, INC.

J. Michael Morris, PE
Vice President/Project Manager

WATER
OUR FOCUS
OUR BUSINESS
OUR PASSION

Project Understanding and Approach

Our Project Approach builds upon our Team's collective OA expertise and our understanding of the infrastructure needs of the region.

KEY PROJECT SUCCESS FACTORS

- Align PDB team, LCFWASA, and all stakeholders with project priorities.
- Manage risk through detailed definition of owner's project criteria.
- Provide robust guaranteed maximum price (GMP) and cost validation procedures.
- Oversee construction of the project to ensure its compliance with the Contract Documents.

PROJECT UNDERSTANDING

Like most utilities across the U.S., the Lower Cape Fear Water and Sewer Authority (LCFWASA) is challenged with managing aging infrastructure in a challenging funding and economic climate. Recently, a significant waterline break exposed a previously unknown risk to the transmission main that delivers raw water to LCFWASA customers. In addition, some segments have significant sedimentation accumulation, restricting flows and delivery capacity.

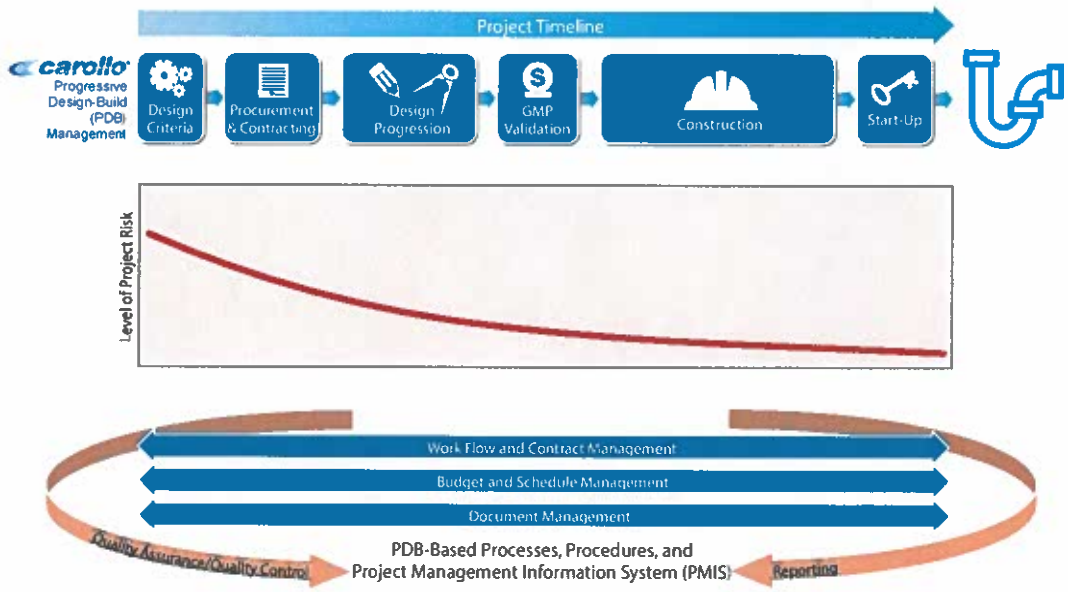
LCFWASA received $23.5 million from American Rescue Plan Act (ARPA) to install a new 10-mile parallel line to the existing 48-inch raw water line that supplies Pender County, Cape Fear Public Utility Authority (CFPUA), and several industries on Hwy 421. The ARPA funding requires that the construction be complete and funding disbursed by October 2026. To meet this aggressive deadline and to address significant construction challenges, LCFWASA will complete this project using a progressive design-build (PDB) approach and is looking to engage an Owner's Advisor (OA) to support you through this.

LOWER CAPE FEAR WATER AND SEWER AUTHORITY // OWNER'S ADVISOR FOR 48" RAW WATER TRANSMISSION MAIN DESIGN BUILD PROJECT

Carollo's Approach to Progressive Design-Build Management

With any successful project delivery, our experience has observed a common starting point – development or establishment of a common project vision along with supporting goals and objectives. As an experienced OA on some of the largest and highest profile design-build projects in the water industry, Carollo has always been held accountable to wide ranging groups of project stakeholders in guiding a project to support its vision. Such accountability has shaped our approach to project delivery and project management support services to owners like LCFWASA. Carollo's overarching approach to OA services, no matter the size or type of project, is illustrated in the graphic below and is built upon three key roles and responsibilities:

1. Guide You through the PDB Process.
2. Protect the Owner's Interests.
3. Provide the Right Expertise and Resources at the Right Time.



Carollo's approach to PDB management will help LCFWASA successfully complete your project while meeting your schedule.

APPROACH TO COMPLETE WORK AND MEET THE PROJECT SCHEDULE

Through our experience of providing OA assistance for DB projects ranging in contract value of $10M to $2B, we understand the key decisions, considerations, and activities that are required to be addressed as part of completing each of these major activities.

LCFWASA has identified in the RFQ the steps and tasks associated with planning for and administering your PDB project, which can be structured into the following major elements:

- Procurement Planning
- Bridging Documents
- Procurement Execution
- Design-Build Team Oversight
- Project and Schedule Management

The schedule for the project dictates the efficient execution of a well-orchestrated Work Plan. As illustrated in the graphic on the next page, our team understands the importance of strategically stepping through the process of delivering a DB project under tight budgetary and time constraints. The following pages describe our proven OA approach.

Work Breakdown Structure

Our work plan approach will create a clear path to design-build implementation.

	Procurement Planning	Bridging Documents	Procurement Execution	Design-Build Oversight
Key Decisions/ Considerations/Activities	1. Identify primary objectives, constraints, and drivers for the project. 2. Identify how LCFWASA's procurement policies and procedures are incorporated into the DB procurement documents and process. 3. Confirm the DB Contract form to utilize, and how to incorporate LCFWASA general terms and conditions (in support of LCFWASA's Legal Counsel). 4. Identify the evaluation criteria to be used for procurement of a DB team, including how cost will be considered. 5. Determine the content and level of design detail required for the "bridging" documents. 6. Define responsibilities of the DB team versus LCFWASA/OA (e.g., permitting responsibilities). 7. Define the necessary geotechnical, survey, and other investigations that are necessary as part of the "bridging" documents so those activities can be initiated. 8. Develop the baseline project schedule.	1. Perform the necessary preliminary investigations, interpret, process, and compile. 2. Prepare certain specifications that the DB team will be required to follow in completing its design. 3. Prepare general requirements specifications (i.e., Division 1). 4. Define and document "fixed" aspects of project, such as pipeline route, size, etc. 5. Perform engineering analysis to establish criteria that serves as the basis for pipeline design.	1. Determine if confidential, or one-on-one, meeting(s) between each DB team and LCFWASA/OA are necessary. 2. Define clear protest procedures that are consistent with LCFWASA procurement policies. 3. Determine Selection Committee members and selection process. 4. Develop RFP that promotes selection of the "best-value" DB team. 5. Provide input to LCFWASA's Legal Counsel regarding the development of the DB Contract such that the Contract is equitable and consistent with industry standards. 6. Obtain and consider comments from DB teams regarding DB Contract during procurement to assist LCFWASA's Legal Counsel in creating a final contract version prior to negotiations. 7. Clearly define the DB team's scope of services, and involvement and expectations of LCFWASA/OA during design and construction.	1. Conduct regular design development meetings. 2. Review DB team schedule submittals and compare to baseline schedule. 3. Perform detailed technical reviews of design submittals. 4. Facilitate decision making process. 5. Perform construction administration support, contract compliance and quality assurance control. 6. Review and validate DB cost submittals and GMP Proposal.
Meetings/ Workshops	• Planning Workshop 1. • Planning Workshop 2.	• Design Criteria Package Review Meeting. • Permitting Workshop. • PDB Contract Review Meeting.	• Potential PDB Team Site Walk(s). • Proposal Review meetings. • Contract Negotiation meetings.	• Design and Construction Progress Meetings. • GMP Meetings. • Permitting Meetings. • Easement Meetings
Deliverables	• Procurement Plan. • Baseline Project Schedule.	• Design Criteria Package. • PDB Contract. • PDB Scope of Work. • Owner's Project Criteria. • Division 1 and LCFWASA General Conditions.	• Proposal Review Memorandum.	• Monthly Progress Reports. • 60% Design Submittal Review Comment Log. • 100% Design Submittal Review Comment Log. • Cost and GMP Proposal Review Memoranda. • Technical deliverables review comments.
Information From LCFWASA	• As-builts for existing raw water transmission line. • Available studies for the routing (geotechnical, preliminary design reports, easement evaluations, etc.). • List of key stakeholders.	• Provide Front End Documents. • Provide General Conditions.	• Access to properties and easement along pipe route. • Proposal review comments.	• Review comments on 60% design drawings. • Review of 100% Design Submittal. • Permitting documents review comments as appropriate. • Review final easement documents.

Procurement Planning for Linear Projects

Careful planning is critical to the success of a PDB project. We propose two, 4-hour planning workshops with the objective of making the decisions necessary to establish the direction for proceeding through procurement.

Planning Workshop #1: This workshop will focus on project objectives and drivers, selection of the preferred pipeline option, confirm pipe material and construction methods, and review schedule and sequencing for procurement of a DB team.

Planning Workshop #2: This workshop will focus on determining the preferred content and level of detail of the procurement documents. The primary elements that will be considered are:

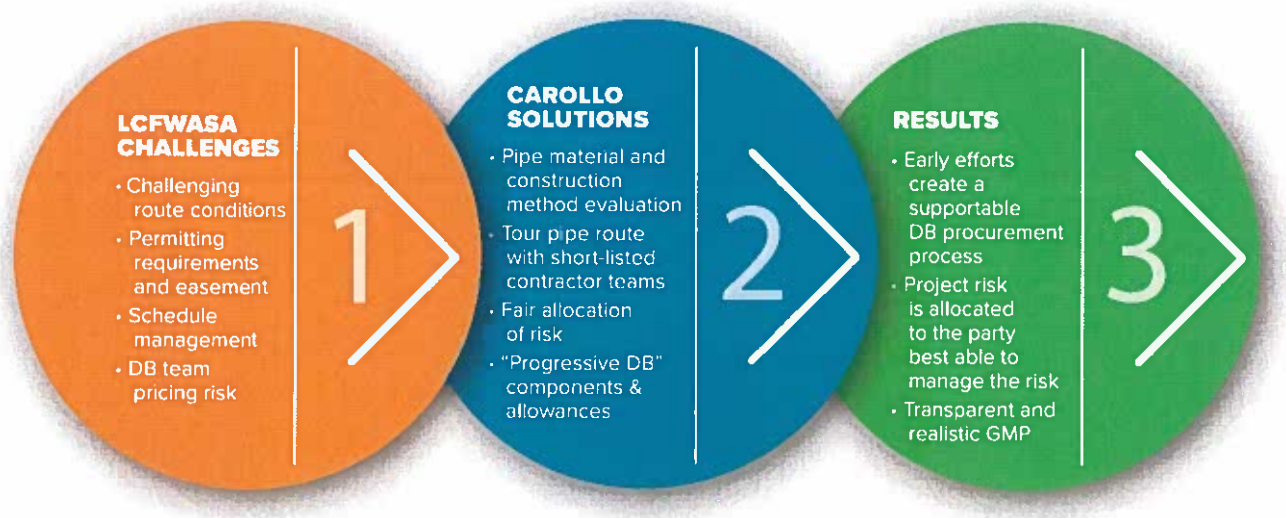
- Evaluation criteria that will be used to select a DB team from the shortlisted teams.
- Appropriate level of design detail necessary for the "bridging" documents.
- Definition of roles and responsibilities of the DB team, LCFWASA, and the OA.

A key decision during the Procurement Planning phase is determining the content and level of detail to be included within the "bridging" documents. It is important to develop bridging documents that provide the engineering basis and set the boundary conditions for the project, while still allowing for flexibility and innovation of the DB team to determine and take ownership of the optimum solution. Our experience with pipeline projects is that between 10 to 15 percent complete "bridging" documents can be appropriate but that it is important to be strategic about which specific elements of the project require more definition.

Bridging Documents

The technical requirements of the project are documented and communicated to the DB team in the form of the "bridging" documents. The minimum information that Carollo recommends as necessary to include within the "bridging" documents is the following:

- Pipeline routing with topographic and surface characteristics of route.
- Existing utility information.
- Baseline (i.e., representative) geotechnical report.
- Property ownership records.
- Pipeline design criteria: flows, material preferences, routing restrictions, etc.
- Specifications for certain materials of construction.

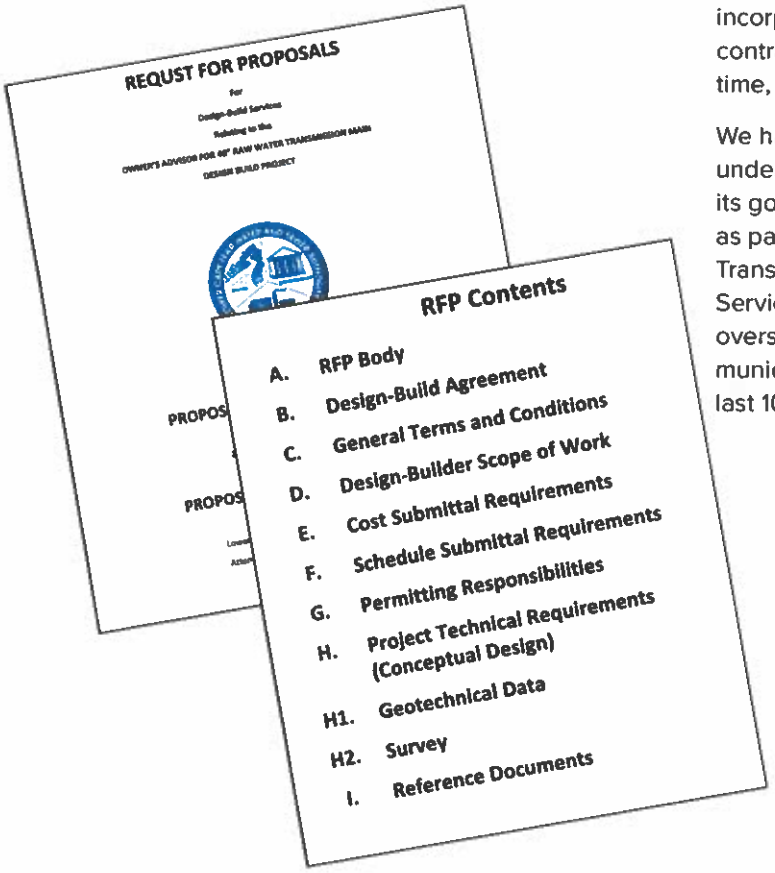


Our OA team's recent experience with the PDB delivery of large diameter pressure pipelines (19,000 linear foot of 36-inch wastewater force main for San Diego and over 10 miles of 42 and 48-inch transmission main for Hillsborough County FL) provides some beneficial insights to delivering linear projects.

Procurement Execution

Successful procurement is measured by the amount of interest in the project (i.e., number of qualified proposals submitted by prospective Design-Builders); by receiving no protests or experiencing no delays in the procurement process; and ultimately by the selection of the DB team that will provide the best-value to LCFWASA and the project.

It is our understanding that the pre-qualification of DB teams will be underway by the time the OA is selected and under contract. Therefore, our role will be to support LCFWASA in the development of the RFP documents. Our experience has shown that RFP documents must be clear and thorough regarding the procurement process procedures and administrative policies, and the procurement process itself must prevent any unfair advantage to any individual team. Also, the terms and conditions included within the DB Contract need to be consistent with standards in the DB industry and that reflect equitable allocation of risk between parties. Our procurement team members have worked side-by-side to assist numerous clients throughout the country in the development of procurement and DB Contract documentation, and in executing a successful procurement process.



Design-Build Team Oversight

Once the Design-Builder is selected, the following key activities will be performed by the OA Team as part of the Design-Build Team (DB Team) oversight:

1. Design Reviews, Value Engineering, and Adhering to the Design Requirements.
2. Negotiations of the GMP: Cost Submittal Review and Validation.
3. Construction Oversight and Contract Compliance: Making Sure You Get What Your Paid For.

In PDB projects, the Design-Builder is required to perform quantitative analysis of their risks to assist in establishing the appropriate and justified contingency requirements as part of negotiation of the GMP. After establishing the GMP, risks are continually monitored by the OA through the commissioning phase. The real-time risk profile of the project is accessible through dashboard summaries (i.e., critical items, mitigation updates, etc.).

For PDB projects, construction oversight plays important roles, including construction administration, contractor construction quality oversight, and confirmation of PDB agreement compliance. By incorporating construction oversight into the OA contract, we strive to minimize costs, reduce risk, save time, and improve quality.

We have the experienced resources and fully understand how we can help the LCFWASA achieve its goals by integrating construction oversight services as part of our OA assignment on your Raw Water Transmission Main Project. Carollo's Construction Services Group (CSG) has provided construction oversight and management for more than $4 billion in municipal water and wastewater infrastructure over the last 10 years.

Our Team has developed templates and base documentation, specific to DB projects, that we will use as a starting point for your project. We have also used DBIA contracts to deliver multiple utility projects nationwide.

DESIGN-BUILDER COST VALIDATION

Effective and efficient cost validation starts by comprehensively defining the cost submittal requirements for the Design-Builder. Development of a Cost Submittal Requirement document helps to avoid angst and frustrations in the PDB negotiation process by outlining requirements up-front.

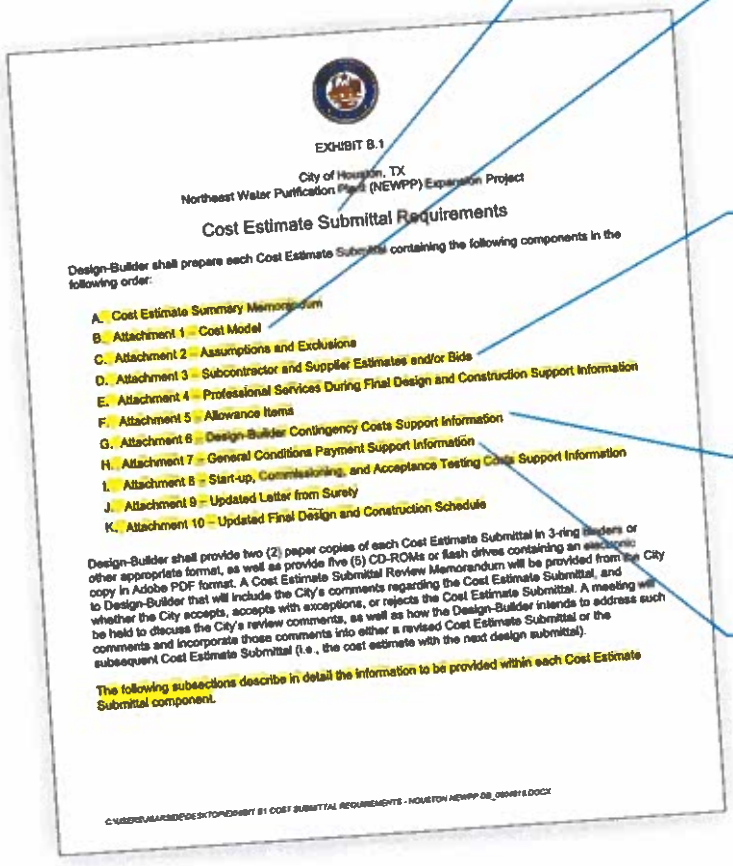


EXHIBIT B.1

City of Houston, TX
Northeast Water Purification Plant (NEWPP) Expansion Project

Cost Estimate Submittal Requirements

Design-Builder shall prepare each Cost Estimate Submittal containing the following components in the following order:

A. Cost Estimate Summary Memorandum
B. Attachment 1 – Cost Model
C. Attachment 2 – Assumptions and Exclusions
D. Attachment 3 – Subcontractor and Supplier Estimates and/or Bids
E. Attachment 4 – Professional Services During Final Design and Construction Support Information
F. Attachment 5 – Allowance Items
G. Attachment 6 – Design-Builder Contingency Costs Support Information
H. Attachment 7 – General Conditions Payment Support Information
I. Attachment 8 – Start-up, Commissioning, and Acceptance Testing Costs Support Information
J. Attachment 9 – Updated Letter from Surety
K. Attachment 10 – Updated Final Design and Construction Schedule

Design-Builder shall provide two (2) paper copies of each Cost Estimate Submittal in 3-ring binders or other appropriate format, as well as provide five (5) CD-ROMs or flash drives containing an electronic copy in Adobe PDF format. A Cost Estimate Submittal Review Memorandum will be provided from the City to Design-Builder that will include the City's comments regarding the Cost Estimate Submittal, and whether the City accepts, accepts with exceptions, or rejects the Cost Estimate Submittal. A meeting will be held to discuss the City's review comments, as well as how the Design-Builder intends to address such comments and incorporate those comments into either a revised Cost Estimate Submittal or the subsequent Cost Estimate Submittal (i.e., the cost estimate with the next design submittal).

The following subsections describe in detail the information to be provided within each Cost Estimate Submittal component.

C:\USERS\MARKEDGE\DESKTOP\EXHIBIT B1 COST SUBMITTAL REQUIREMENTS - HOUSTON NEWPP DB_OWNER.DOCX

COST ESTIMATE SUBMITTAL REQUIREMENTS encompass critical elements necessary for complete cost validation. Development of this document can reduce the time and effort required going back and forth with the Design-Builder and encourages a greater level of transparency in the cost submittals.

COST MODEL requirements specify the preferred format for cost model organization, manner in which self-performed work shall be presented, and requirements for work elements to be included and presented as General Conditions.

SUBCONTRACTOR AND SUPPLIER ESTIMATES AND/OR BIDS specify the requirements for including estimates and bids at each design development milestone, and what must be included within the procurement documents to encourage missing scope reduction.

DESIGN-BUILDER CONTINGENCY COSTS SUPPORT INFORMATION specifies the manner in which the Design-Builder shall support its proposed risk, escalation and scope gap/exclusions contingency values.

GENERAL CONDITIONS PAYMENT SUPPORT INFORMATION specifies the information and documentation that the Design-Builder is required to provide to support its costs. We have found that requiring this documentation from the Design-Builder upfront provides clients with the confidence they have all the evidence to support a fair and competitive GMP proposal.

Our approach to validating the Design-Builder's costs includes several steps/areas of focus.

AREAS OF COST VALIDATION FOCUS

30% Design

- ☑ Pre-qualification of major subcontractors and suppliers.
- ☑ Preliminary quotes from major subcontractors/ suppliers (concrete, rebar, large equipment, etc.).
- ☑ Quantities (high-level).
- ☑ Initial risk register and DB - contingency.
- ☑ General conditions scope.
- ☑ Value engineering items (if applicable).
- ☑ Proposed level of self-performance.

60% Design

- ☑ Quotes from major and mid-level subcontractors and suppliers.
- ☑ Scope gap between subcontractor quotes and self-performed work.
- ☑ General conditions scope and unit costs.
- ☑ Project management and start-up/ commissioning level of effort.
- ☑ Design-builder contingency (refined).
- ☑ Quantities (for major line items).

70% + Design

- ☑ Subcontractor/supplier bids.
- ☑ Self-performed work bids (if required).
- ☑ Design-builder contingency (focus on risk contingency).
- ☑ Other indirect costs (fee, bonds and insurance).
- ☑ Quantity take-off confirmation.
- ☑ Professional services scope of work and fee.

GMP Amendment

SCHEDULE AND BUDGET MANAGEMENT

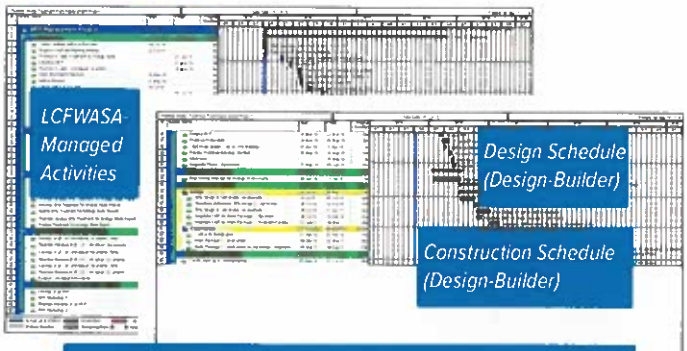
Schedule and budget management throughout the project will be a key factor in successful execution of the project.

Schedule management cannot be effective without first establishing a robust baseline schedule to manage. Below are the key steps Carollo typically uses to develop a baseline master project schedule for a DB project.

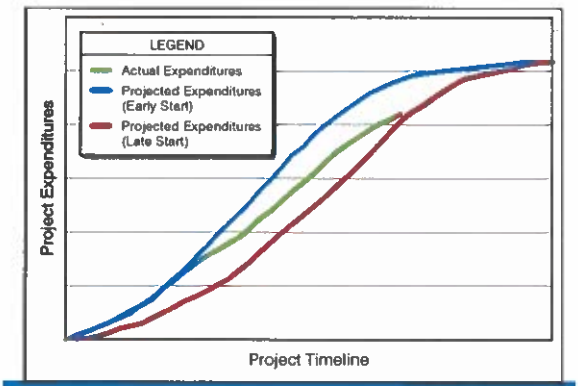
- **Establish a work breakdown structure (WBS).** Thoughtful development of a WBS will allow the Design-Builder's schedule to be incorporated directly into the master project schedule.
- **Develop a preliminary master schedule.** Developing a preliminary master schedule will facilitate identification of potential opportunities for schedule optimization.
- **Dictate minimum schedule requirements to the Design-Builder.** Dictating specific minimum schedule requirements during the procurement process, before the Design-Builder has begun schedule development, will streamline incorporation of the Design-Builder's schedule into the master project schedule.
- **Review the Design-Builder's schedule.** While the Design-Builder is responsible for its own schedule management, it is important that LCFWASA and the OA review the design and construction schedules submitted by the Design-Builder prior to incorporating them into the overall project schedule to identify any deficiencies such as missing logic or constraints on tasks that will not provide a realistic picture of the impacts of schedule changes.
- **Incorporate Design-Builder's schedule into master project schedule and establish baseline.** Once accepted by LCFWASA, the Design-Builder's schedule will be incorporated into the master project schedule and the baseline will be established.

Following development of the master project schedule, schedule management efforts will turn primarily toward monitoring and analyzing the project schedule over the duration of the project. While the Design-Builder will be responsible for managing its own schedule, LCFWASA and its OA will work together to oversee these efforts and provide feedback to the Design- Builder as appropriate if concerns are noted. The following processes are key elements of Carollo's OA approach for managing schedule and budget:

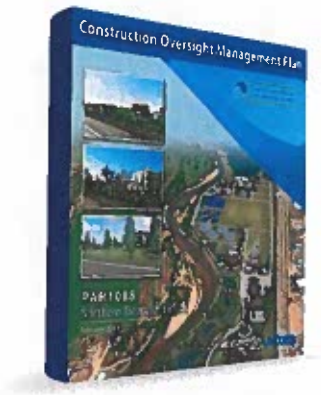
- **Review, monitor, and analyze the Design-Builder's progress schedule on a monthly basis.** Each month, the Design-Builder will update its schedule to reflect current progress and submit it to LCFWASA for review. Carollo will assist LCFWASA with reviewing the schedule to help identify areas of potential concern. We will also coordinate with the Design-Builder to address any concerns and obtain a final schedule update each month that will be incorporated into the master project schedule update.
- **Monitor contractor cash flows as an indicator of schedule adherence.** Cost loaded schedules can be used to establish anticipated cash flows for projects. Comparing actual expenditures to projected expenditures can be used as an indicator of overall schedule health. This process provides a second avenue for early identification of potential schedule issues and can allow for proactive mitigation of such issues.



This preliminary master project schedule includes many LCFWASA-managed activities and placeholder activities for the Design-Builder's design and construction schedules. Once the Design-Builder's detailed schedules are developed and reviewed, they will be incorporated into the master schedule and linked to LCFWASA-managed activities, as necessary.



Because budget and schedule are inextricably linked, closely monitoring cash flows during construction can serve as a great indicator of overall schedule health. As the actual expenditures approach the bottom (late start) expenditure curve, it is an indication that project float is being reduced.



As part of Carollo's GMP-Based DB Oversight Management procedures, responsibility matrices delineate construction roles and quality management accountability for the Owner, its OA, and Design-Builder.

> "We generally find that the level of detail, completeness, and clarity of the information included in Carollo Engineers' drawings, specifications, and bid documents is one of the best in the industry. Carollo's work supports our ability to understand the construction requirements of the job and minimize unnecessary contingency associated with less detailed Bid Documents sometimes produced by other engineers."
>
> —Tom O'Donnell, President and District Manager, PCL Construction, Inc.

QUALITY CONTROL PROGRAM

A well-planned, effectively communicated, and precisely implemented quality assurance/quality control (QA/QC) plan is particularly important in a DB project where the quality objectives of the Design-Builder and the Owner need to be in alignment. Left neglected or mismanaged, quality impacts can include:

- Schedule impacts for immediate and known issues.
- Latent defects and/or failure impacts in structures or equipment after the Design-Builder is out of the picture.

The ultimate goal of quality management is to avoid realization of either of those two impacts – thereby reducing risk to the project and the owner.

Effective Quality Management Oversight Begins at Zero Percent and Covers the Project Continuum

Carollo's OA projects get started in the right direction with what we call our "zero percent" quality review. Our Quality Manager, Scott Vanier, will lead a team of quality advisors in reviewing the (Project Management Plan) PMP, looking closely at the contract, schedule, staffing allocation, and key deliverables to verify your project has the right staff and the right resources to be available when needed.

Quality Management Program Isn't Limited to Overseeing the Design-Builder

Quality management does not begin or end with the Design-Builder's design deliverables or construction work products. An additional role of the PMP is to assure that all of our OA work efforts, processes, procedures, and deliverables meet a high standard for accuracy, content, and editing.

The key to cost-effective and purposeful construction oversight is ensuring that QA/QC activities take place regularly and on schedule. This process must add value to the project and not inhibit construction progress of the Design-Builder (to avoid owner responsibility for delays and risk ownership).

The success of our quality management approach—both in quality control and assurance—is evidenced by the high regard we have in the construction industry. Our ongoing benchmarking continues to reveal that our projects consistently maintain one of the lowest change order values as a percentage of construction cost—an average of just 2 percent for the past 10 years.

EXPERIENCE WITH FEDERAL/STATE FUNDING PROGRAMS

Carollo has helped our clients obtain > $1.2 billion in grant and state revolving fund (SRF) funding. Carollo has completed the design or construction on SRF-funded projects across the country totaling more than $2 billion in construction.

Relevant Firm Experience

Carollo has been serving water utilities and owners for 89 years. We focus solely on water, with nationally-recognized leadership in wastewater, stormwater, drinking water, and water reuse.

ABOUT CAROLLO

Founded in 1933, Carollo Engineers, Inc., is dedicated solely to water and wastewater engineering—it's all we do. This targeted expertise allows us to focus on developing best-value, innovative, and reliable solutions to help our clients protect public health and achieve their service goals. It also culminates in the recruitment of the brightest minds in the industry, a staff trained on issues impacting water and wastewater infrastructure, and pioneering ideas tailored to the specific needs of each client and project.

With over 1,300 employees more than 50 offices throughout North America, Carollo has successfully completed more than 25,000 projects for utilities like Lower Cape Fear. Our staff includes civil, sanitary, environmental, electrical, mechanical, chemical, structural, and control system engineers as well as architects, planners, and construction managers.

Carollo maintains six offices in the East region. Our combined regional staff of more than 50 allows us to provide strong, responsive project delivery with technical resources to respond to any challenges that may arise.

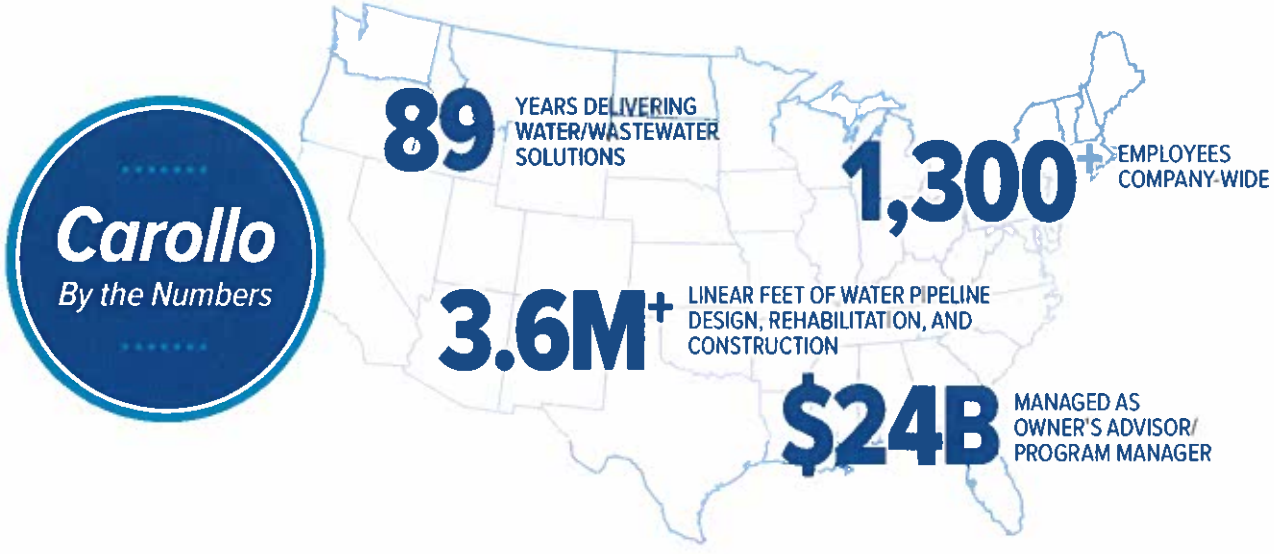
Firm Information

Name: Carollo Engineers, Inc.

Office Information:
901 N. Stuart St., Suite 403
Arlington, VA 22203
Ph: 703.448.1875 | F: 703.258.1360
Contact: Eric Harold
eharold@carollo.com

Year Firm Established and Former Names:
Established in Phoenix, AZ, in 1933 as Headman, Ferguson and Carollo. Renamed John A. Carollo, Consulting Engineers in 1957. The partnership was reorganized in 1970 under the name of John Carollo Engineers, and was renamed Carollo Engineers in 1996. The firm was incorporated in 1998 under the name of Carollo Engineers, P.C. The firm then converted from an Arizona professional corporation to a Delaware corporation under the name of Carollo Engineers, Inc., on May 13, 2010.

Registration:
Carollo is registered to do business in the state of North Carolina under SOS # 1159452.

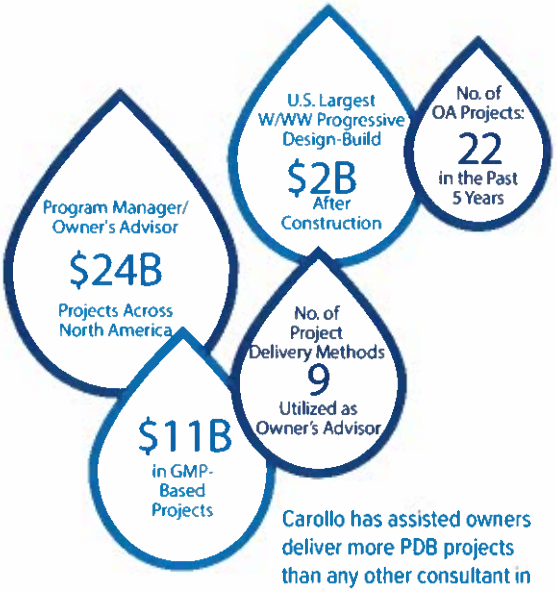


LOWER CAPE FEAR WATER AND SEWER AUTHORITY // OWNER'S ADVISOR FOR 48" RAW WATER TRANSMISSION MAIN DESIGN BUILD PROJECT

OWNER'S ADVISOR (OA) IS WHAT WE DO

Navigating project delivery decisions requires an experienced partner. Owners from across the United States have placed their trust in Carollo's OA expertise to guide them through their most important and challenging projects, like your raw water pipeline project.

As an experienced OA on some of the largest and highest profile design-build projects in the water industry, Carollo has always been held accountable to wide ranging groups of project stakeholders in guiding a project to support its vision.



Carollo has assisted owners deliver more PDB projects than any other consultant in the industry.

OUR OA EXPERTS HAVE THE RIGHT TOOLS

Our experience has provided us with a deep understanding of the best practices necessary to plan, control, and implement capital projects and programs under every possible delivery method. From project conception to final acceptance, Carollo's deep bench of technical experts guides owners, like LCFWASA, through the many challenges that can threaten a project's success.

Our Carollo team brings a full suite of Owner's Advisor tools and capabilities tailored specifically for water clients.

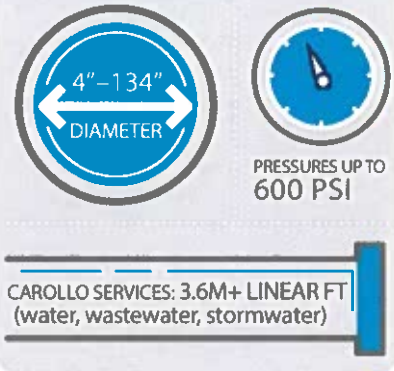
WE KNOW PIPELINES

Carollo's water infrastructure projects have included important considerations, such as:

- Construction through or near wetlands, river crossings, and seismic areas.
- Evaluating alternative alignments.
- Utility research.
- Encroachment permits.
- Roadway/paving replacement.
- Pipe sizing and material selection.
- Coordinating with various impacted parties.

Our replacement/rehabilitation projects have incorporated traditional cut and- cover and jack and bore construction methods, as well as micro tunneling, horizontal directional drilling, traditional tunneling, pipe bursting, fold and form pipe, cured in place pipe, and slip lining techniques.

INFRASTRUCTURE BY THE NUMBERS



OA PROJECT EXPERIENCE

Our OA services are tailored to meet the individual needs of each agency and project, from planning through design, construction, and post-construction phases. Select examples of our OA experience are illustrated in the following table. The project descriptions on the next few pages describe how we've helped similar clients reach their goals and realize their project vision.

Client – Project	Delivery Method	Project Value	Linear Pipeline	Project Controls	Project Criteria Development	Federal Funding Compliance	Procurement and Contracting	Design Review	GMP Review and Negotiations	Permit Assistance	Construction Management
City of Modesto, CA – North Valley Regional Recycled Water Program	FPDB	$50M	■	■	■	■	■	■		■	■
Hillsborough County, FL – South County Water Campus OA	PDB, FPDB, CMAR	$800M	■	■	■	■	■	■	■	■	■
Joint Powers Authority/Padre Dam Municipal Water District, CA – East County Advanced Water Purification OA	PDB	$950M	■	■	■	■	■	■	■	■	■
City of Alexandria, VA – OA Services for Waterfront Replacement	PDB	$150M	■	■	■	■	■	■	■	■	■
City of Houston, TX – Northeast Water Purification Plant Expansion Project	PDB	$1.5B	■	■	■		■	■	■	■	■
Tualatin Valley Water District , OR – Tualatin Basin Water Supply Project	CMAR, DBB	$1.5B	■	■	■		■	■	■	■	■
City of San Jose, CA – Wastewater Capital Program	PDB, DBB	$1.4B		■	■	■	■	■	■	■	■
Los Angeles Bureau of Sanitation, CA –Hyperion 100 Percent Recycled Water Program	PDB, DBB, TBD	$4.5B		■	■		■	■	■	■	■
Los Angeles Bureau of Sanitation, CA – Potable Reuse Program Management Support Services	PDB, DBFOM, JOC	$520M		■	■		■	■	■	■	■
Metro Wastewater Reclamation District, CO – Northern Treatment Plant Program	PDB, DBB	$475M	■	■	■		■	■	■	■	■
City of Sacramento, CA – Accelerated Water Meter Program	JOC	$250M		■	■		■	■		■	■
County of San Luis Obispo, CA – Los Osos WWTP Program	DBB	$170M	■	■	■	■		■			■
Hi-Desert Water District, CA – Wastewater Reclamation Program	PDB, DBB	$150M	■	■	■	■	■	■	■	■	■
City of Kansas City, MO – Blue River WWTP Biosolids Facility	FPDB	$150M		■	■	■	■	■	■	■	■
City of Morro Bay, CA – Water Reclamation Facility and IPR Project	FPDB	$150M	■	■		■	■	■	■	■	■
City of Lake Oswego, OR – Wastewater Treatment Plant	DBFOM	$150M				■		■	■	■	
San Francisco Public Utilities Commission, CA – Treasure Island WWTP	FPDB	$120M		■	■		■	■	■	■	■
City of Thornton, CO – OA Services for Thornton WTP Replacement	PDB	$90M		■	■		■	■	■	■	■
South Florida Water Management District, FL –BCB Field Station and L8 Pump Station and Inflow Structure Projects	PDB, FPDB	$70M		■	■		■	■	■		■
City of Santa Barbara, CA – Seawater Desalination Water Treatment Project	DBO	$72M		■	■	■	■	■	■	■	■
City of Longboat Key, FL – Subaqueous Forcemain Project	PDB	$25M	■	■	■		■	■	■	■	■

LOWER CAPE FEAR WATER AND SEWER AUTHORITY // OWNER'S ADVISOR FOR 48" RAW WATER TRANSMISSION MAIN DESIGN BUILD PROJECT

North Valley Regional Recycled Water Program

City Modesto, CA

The North Valley Water Recycling Program (NVRRWP) is a regional effort implemented by a partnership of the cities of Modesto, Turlock, and Ceres; the Del Puerto Water District; and Stanislaus County to deliver recycled water produced by Modesto and Turlock to growers experiencing drastically curtailed federal water allocations. The program included more than 14 miles of 42-inch pipe, a 3,000 hp pumping facility, 2,800 linear feet of directional drilling, 300 linear feet of jack and bore construction, and five 300 linear foot microtunnels. It makes recycled water available for agricultural irrigation and wildlife refuges and provides long-term, drought-proof water supply for the region.

Following our regional facilities planning efforts, Carollo provided OA services for the NVRRWP, which was delivered as a fixed price, design-build contract. The project, which features one of the largest design-build pipeline projects constructed to-date, conveys tertiary treated effluent to agricultural customers for beneficial reuse. Work included:

- Conducting an alternative delivery analysis to identify the optimal delivery method to meet Modesto's needs for an expedited schedule and address permitting challenges and the need for cost efficiency.
- Implementing a two-stage procurement process resulting in an executed DB contract, and providing oversight of the Design-Builder's design and construction efforts.
- Completing 75 percent design of the river crossing and final discharge facilities, as well as a 30 percent design for the other facilities to expedite the permitting process.
- Securing competitive funding under the California Clean Water SRF Program.
- Oversight of project schedule, cost and risk to ensure project met schedule and cost compliance requirements.

REFERENCE

Mr Will Wong
Utilities Director
209-571-5801
wwong@modestogov.com

PROJECT DATES

2016 - 2020

AREA OF PROFESSIONAL SERVICE

Owner's Advisor
Linear Construction
Fixed Price Design Build
Permitting
Funding Support
Project Criteria Development
Design Review
Construction Management

LOWER CAPE FEAR WATER AND SEWER AUTHORITY // OWNER'S ADVISOR FOR 48" RAW WATER TRANSMISSION MAIN DESIGN BUILD PROJECT

South County Water Campus Owner's Advisor

Hillsborough County, FL

The Hillsborough County Water Resources Department (Owner) provides potable water service to the south county area from the Lithia WTP. Potable water is delivered through a pipeline distribution system consisting of a single 42-inch main along Balm-Boyette Road, overland west of Big Bend Road and continuing west to US 301 where it reduces in size and continues west and south.

The South County Potable Water Transmission Main (PWTM) project will expand the existing transmission network to the southern portion of the County through approximately 5.5 miles of new 42-inch and 5 miles of a new 48-inch pipe. Constructing this pipeline will expand the delivery system, create redundancy, provide reliability, and increase pressure required to address future growth.

The Owner chose PDB, where the County assisted by Carollo selected a DB team. The contract was awarded in multiple phases to allow early engagement of the PDB team. In Phase 1, the PDB Team collaborated with the Owner to develop overall design and to procure much of the pipe, valves and fittings and as soon as possible to avoid higher costs due to ongoing price escalation of materials. Phase 1 included finalizing the route and alignment, topographic survey, environmental survey, geotechnical investigation, permitting, design up to 100%, and the development of two GMP cost estimates. Because two of the three segments were fixed routes and the other segment had alternate options, two GMP proposals were developed. The GMP proposals were developed and awarded separately as the design was completed for each segment.

Carollo developed GMPs through an "open book" approach, in which the PDB team was transparent in presenting bids, quotes, backup information used for the cost of work, general requirements, general conditions, design costs, and the design-build fee. The GMP also included value engineering items identified and accepted by the Owner during the design phase.

Construction of each part of the project commenced upon the Owner's award of the GMP, acceptance of the final design, and easement acquisition.

REFERENCE

Mr. Jason Parillo
CIP Section Manager
813.964.2788
parilloj@HCFLgov.net

PROJECT DATES

2020 - 2030

AREA OF PROFESSIONAL SERVICE

Owner's Advisor
Linear Construction
Program Management
Progressive Design Build
Risk Mitigation

LOWER CAPE FEAR WATER AND SEWER AUTHORITY // OWNER'S ADVISOR FOR 48" RAW WATER TRANSMISSION MAIN DESIGN BUILD PROJECT

East County Advanced Water Purification Project Owner's Advisory Services

Joint Powers Authority/Padre Dam Municipal Water District, CA

This advanced water purification (AWP) project will deliver a drought-proof water supply for East County San Diego via indirect potable reuse (IPR) and surface water augmentation (SWA). It is a collaborative effort between the Padre Dam Municipal Water District, the County of San Diego, the City of El Cajon, and the Helix Water District.

When completed in 2025, this project will treat East County's wastewater locally by providing AWP and pumping treated water to Lake Jennings Reservoir for SWA, where it will be mixed with other water owned by Helix. The water will then be sent to Helix's R. M. Levy Water Treatment Plant to become potable water.

Carollo is providing OA services to the JPA, working with Padre Dam MWD as the administrator, to provide the necessary management and administrative support, procurement support, professional engineering and technical assistance, information and data management planning, and construction, start-up, and commissioning support services. Project highlights include:

- Comprised of five progressive design-build projects being implemented simultaneously: Package 1 (WRF and AWPF); Package 2 (Product Water Pipeline and Dechlorination Facility); Package 3 (Raw WW and Residuals Pumping and Pipelines); Package 4 (Brine and Residuals Pipeline); Package 5 (Energy Recovery Facilities).
- Future production of 11.5 mgd of Title 22 recycled effluent, representing approximately 30 percent of East County San Diego's water demand.
- Requires extensive coordination and communication among project team members, stakeholders, the public, regulators, and member agencies to implement regional reuse.
- Funded through federal (WIFIA, SRF) and state sources.
- Complex environmental permitting and compliance requirements.

REFERENCE

Mr. Mark Niemiec
Director of the East County AWP Project
619-258-4766
mniemiec@padre.org

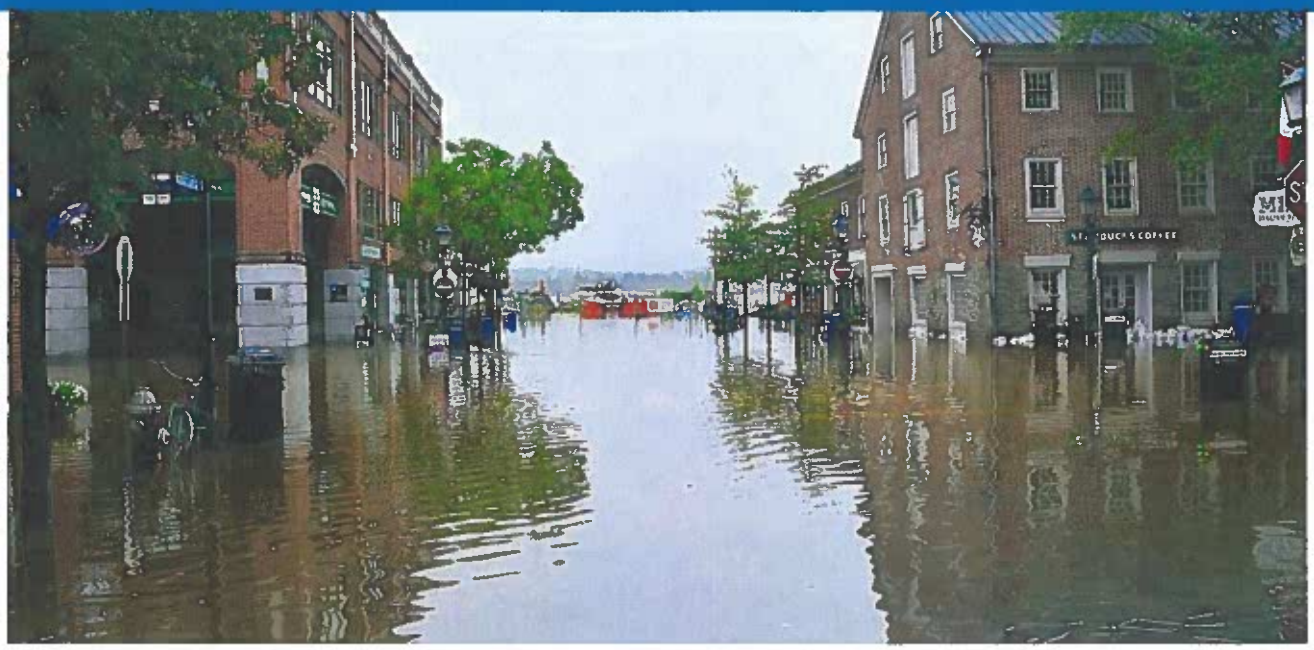
PROJECT DATES

2020 - ongoing

AREA OF PROFESSIONAL SERVICE

Owner's Advisor
Linear Construction
Progressive Design Build
GMP Review and Negotiations
Funding Support
Permitting
Design Review
Construction Management

LOWER CAPE FEAR WATER AND SEWER AUTHORITY // OWNER'S ADVISOR FOR 48" RAW WATER TRANSMISSION MAIN DESIGN BUILD PROJECT



Owner's Advisor for Waterfront Implementation

City of Alexandria, VA

The 2012 City of Alexandria Waterfront Small Area Plan details the City's vision for the Potomac Riverfront, providing pedestrian connectivity, an improved park system, and mitigation of nuisance tidal flooding. The City approved a schematic landscape and flood mitigation design concept in 2014, and subsequently prioritized capital budget for improvements to the "core area," which generally encompasses the riverfront from Duke to Queen Streets.

The City hired Carollo to provide Owner's Advisory services in support of the progressive design-build procurement process and to provide oversight throughout design, construction, commissioning, and close-out of the project.

Carollo worked with the City to develop and configure a Project Management Information System (PMIS) to support project controls best practices and promote successful delivery of the Project. As part of this effort Carollo prepared a cost-loaded schedule in SmartSheet – initially hosted on Carollo's account and then migrated over to the City's adopted template and license for communication to all internal project stakeholders as well as external customers and the public.

The team performed value engineering services of the project, which primarily focused "grey" solutions for flood mitigation, including two large storm water pump stations and an elevated riverfront bulkhead. Carollo conducted an overall resiliency review of the project and introduced several "blue-green" infrastructure solutions to provide passive stormwater management, and ultimately reduce the sizing (and cost) of pumping stations. The integration of value engineering and state-of-the-art resiliency offered an opportunity to adapt the previous concept design to better align with today's priorities and funding realities as well as tomorrow's storms.

REFERENCE

Matthew Landes, PLA, ISA
Division Chief, Department of Project Implementation
703.476.4122
matthew.landes@alexandriava.gov

PROJECT DATES

2020 - ongoing

AREA OF PROFESSIONAL SERVICE

Owner's Advisor Services
Progressive Design Build
Alternatives Development and Evaluation
Value Engineering
Permit Support
Construction Administration and Inspection
Federal Funding Support
Project Criteria Development

Southwest Effluent Outfall Relocation

City of Conroe, TX

When the City of Conroe applied for their WWTP discharge permit renewal, the natural occurring levels of TDS did not meet the new permit criteria. Carollo coordinated with TCEQ on their behalf and evaluated alternatives that included changing source water, designing desalination treatment, or changing the discharge location. Based on the results of the evaluation, Carollo recommended a modified discharge location to prevent the City from installing a costly RO system at the plant. Carollo was responsible for designing a 60-inch WWTP discharge pipeline into the West Fork of the San Jacinto River, directly downstream of the next confluence with Lake Creek tributary. The design of the pipeline included the connection outside the levee system, the outfall structure, and a conflict structure to avoid other utilities. Mitigation of the impacts of the proposed pipeline on the forested wetland areas, archaeological areas, and endangered species was needed to obtain the required USACE Clean Water Act Section 404 permit.

Despite the strict deadline per the TCEQ and the potential project disturbances requiring three USACE permits, the Carollo Team completed the design early and provided an Opinion of Probable Construction Cost that was less than 10 percent over the awarded construction bid without any change orders.

The project included:

- Constant coordination with TCEQ and USACE to expedite permits and meet a tight schedule.
- Assisting the City with access since the developer-owned property required an easement.
- Coordination with O&M staff to meet transmission main considerations and incorporated staff preferences on alignment and structures.
- Prevention of connection outside of the levee from exposing the plant to frequent rising flood waters using innovative design strategies to anticipate and mitigate risk during construction.

REFERENCE

Mr. Chris Bogert, PE
Engineering Manager
300 West Davis Street
Conroe, TX 77301
936-552-3148
cbogert@cityofconroe.org

PROJECT DATES

2014 - 2016

AREA OF PROFESSIONAL SERVICE

Linear Design
Linear Construction
Challenging Construction
OPCC Development and Validation

LOWER CAPE FEAR WATER AND SEWER AUTHORITY // OWNER'S ADVISOR FOR 48" RAW WATER TRANSMISSION MAIN DESIGN BUILD PROJECT

Overall Staff Experience

Caroll's experience as an Owner's Advisor has been focused on assisting owners utilize design-build to deliver complex water/wastewater conveyance and treatment projects.

THE RIGHT TEAM FOR LCFWASA

The result of our focus means that we can offer LCFWASA a team of experts that have spent their careers solving challenges within the water industry. The strengths our team possesses cover the service areas required under your RFQ, namely those broad services necessary to serve as your owner's advisor. The Carollo team provides the LCFWASA with the entire suite of management, technical, design-build, and construction expertise to support the delivery of water infrastructure projects.

We have assembled a focused team to collaborate with LCFWASA on delivering this important regional benefit for the utilities and their customers in the Lower Cape Fear region. Our team is built around a simple, yet powerful concept—put the best individuals into roles where they can add the highest value to LCFWASA.

Our team of owner's advisor, pipeline, and construction experts understand the design build process and will guide LCFWASA every step of the way of your pipeline project. On the following pages we introduce you to our key staff through their brief bios. Resumes for key staff and three value-added team members are provided following this section.

PROJECT MANAGER
Mike Morris, PE, MBA

QUALITY MANAGEMENT
Scott Vanier, PE, MBA

PROCUREMENT/GMP AMENDMENT
Jason Garside, PE

COST VALIDATION
Jason Rozgony, PE

CONTRACT DEVELOPMENT
Hannah Fodor, PE, PMP, DBIA

TECHNICAL SERVICES
Scott Richards, PE

PIPELINE
Ricardo Borromeo, PE

TRENCHLESS CONSTRUCTION
Brian Avon, PE

PROJECT CONTROLS
Kathleen Kharkar, PE, PgMP

LEAD SCHEDULE ANALYST
Swagata Biswas, PE, CCM

RISK MANAGEMENT
Erica Corbett, PE, PMP

FUNDING SUPPORT
Seema Chavan, PE

CONSTRUCTION MANAGEMENT
Gerardo Torres, DBIA

FIELD REPRESENTATIVE
Mohammed Matin, P.Eng, PMP

INSPECTOR
David McCarty

Resume Included in Appendix

PROPOSED KEY TEAM MEMBERS

Mike Morris, PE, MBA

PROJECT MANAGER | LOCATION: RICHMOND, VA

Mike has 28 years of experience in the water and wastewater treatment industry. He has been involved in the study, design, and construction of water and wastewater systems for municipal and industrial clients. His involvement in projects has ranged from project manager to construction manager. Currently serving as the East Coast Lead for Carollo's Utility Advisory Services Group, Mike focuses on owner's advisor services for multiple clients throughout the country.

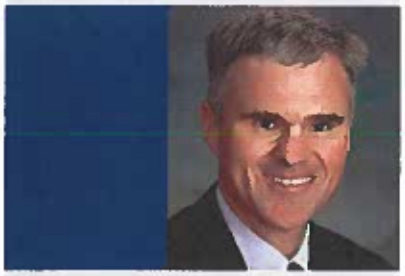
Value Mike Brings to LCFWASA: Mike brings a deep understanding of the entire project process from leading owner's advisor projects for Hillsborough County One Water Campus OA, Kansas City Blue River OA, East County Advanced Water Purification, and Alexandria Waterfront Implementation Project.

Scott Vanier, PE, MBA

QUALITY MANAGEMENT | LOCATION: DENVER, CO

Scott serves as director of Carollo's Utility Advisory Services. Accordingly, he is responsible for the operation and delivery of the firm's program management, owner's advisor, and management support services. Scott has 25 years of experience specializing in the planning and management of capital delivery programs and projects ranging in size up to $6 billion. He has worked on more than a dozen recent major water projects acting as owner's advisor or representative.

Value Scott Brings to LCFWASA: As director of Utility Advisory Services, Scott has his finger on the pulse of each of Carollo's OA projects and will provide the same level of care and quality management as he does for all OA projects.



Jason Garside, PE

PROCUREMENT/GMP AMENDMENT | LOCATION: DENVER, CO

Jason is the project delivery manager for Carollo's Utility Advisory Services Group. He performs program management/owner's advisor services for water and wastewater clients and offers his expertise in collaborative project delivery. He is a professional engineer with 26 years of experience in project management and engineering in the areas of water treatment/distribution, wastewater treatment/conveyance, civil engineering, and stormwater management.

Value Jason Brings to LCFWASA: Jason brings 15 years of helping owners navigate procurement and project delivery challenges, and has assisted with the delivery of over 20 PDB and DB projects worth over $5B.

PROPOSED KEY TEAM MEMBERS (CONTINUED)

Scott Richards, PE

TECHNICAL | LOCATION: ORLANDO, FL

Scott has 19 years of water and wastewater pipeline design and construction experience, completing numerous projects throughout the southeast. He specializes in pump stations and pipeline systems, including raw water, potable, and reclaimed water transmission/distribution. This includes the design of new systems as well as design and construction of systems in wetlands, bay and river crossings, and other challenging construction conditions.

Value Scott Brings to LCFWASA: As Carollo's Southeast Regional Infrastructure Lead, Scott specializes in all types of pipeline design and construction methods for a broad range of pipe lengths and diameters.

Kathleen Kharkar, PE, PgMP

PROJECT CONTROLS | LOCATION: ARLINGTON, VA

Kathleen has more than 30 years of experience in a wide variety of projects and roles, ranging from planning, design, and start-up to utility finance and program management. She considers her work on stormwater, water supply, water and wastewater treatment, and biosolids projects a practice of environmental stewardship.

Value Kathleen Brings to LCFWASA: With such a broad range of expertise, Kathleen can navigate all aspects of project controls to help keep your project organized, on schedule, and within budget.

Gerardo Torres, PE

CONSTRUCTION MANAGEMENT | LOCATION: TAMPA, FL

Gerardo has 24 years of experience in water and wastewater treatment projects, including estimating, preconstruction, and project operations on design-bid-build and integrated delivery (Design-Build and CMAR) projects. His construction experience includes interagency coordination, construction management, project close-out, daily direction of managers and inspectors, budget controls and change order management, resource management to maintain schedules, dispute resolution, and regulatory/ environmental compliance.

Value Gerardo Brings to LCFWASA: Gerardo's experience and strong relationships with contractors and vendors provides depth of knowledge of construction practices and proven ability to oversee managers and inspectors to keep construction on schedule and within budget.

PROPOSED KEY TEAM MEMBERS (CONTINUED)

Ricardo Borromeo, PE

PIPELINE | LOCATION: ORLANDO, FL

As part of Carollo's Infrastructure group, Ricardo serves as a project manager, engineer of record, technical lead, and quality control reviewer. Ricardo has a proven track record of managing infrastructure projects and continuously demonstrates his ability to successfully manage challenging projects. He is a hands-on engineer and project manager, who takes pride in listening and understanding his clients' needs.

Value Ricardo Brings to LCFWASA: Ricardo thinks "outside the box" to address a variety of issues that may arise throughout all stages of a project. This ensures that the project is completed in an efficient and timely manner.

Brian Avon, PE

TRENCHLESS CONSTRUCTION | LOCATION: WALNUT CREEK, CA

Brian brings 16 years of experience in design, preparing contract documents and cost estimates, and facilitating the acquisition of permits. His work has included systems evaluation, pipeline design and condition evaluation, development of rehabilitation/ replacement improvements, construction, geotechnical engineering, and preparation of cost estimates and implementation schedules.

Value Brian Brings to LCFWASA: Internally, Brian serves as Carollo's trenchless technology practice leader and teaches courses on Trenchless New Installation Methods and Horizontal Directional Drilling for the North American Society of Trenchless Technology (NASTT).

Mohammed Matin, PEng, PMP

FIELD REPRESENTATIVE | LOCATION: TAMPA, FL

Mohammed is an accomplished construction management professional with more than 35 years of professional experience in different infrastructure projects, and 20 years of experience in project/construction management. His expertise includes construction supervision of numerous pipe installation methods for the large diameter sewer pipelines and force mains, such as, Horizontal Directional Drilling (HDD), Ductile Iron (DI), High Density Pol-yethylene (HDPE), Poly Vinyl Chloride (PVC), Pre-stressed Concrete Cylinder Pipe (PCCP).

Value Mohammed Brings to LCFWASA: Mohammad's expertise in large diameter pipeline construction materials and methods provides confidence that construction best practices are followed.

Resumes

J. Michael Morris, P.E.

Mike Morris has 28 years of experience in the water and wastewater treatment field. He has been involved in the study, design, and construction of water and wastewater systems for municipal and industrial clients. His involvement in projects has ranged from project manager to construction manager. He is currently serving as the East Coast Lead for Carollo's Utility Advisory Services group.

Location

Richmond, VA

Education

MBA Business Administration, University of Denver, 2004

BS Civil Engineering, Virginia Military Institute, 1992

Licenses

Civil Engineer, Alaska

Professional Engineer, North Carolina (Pending)

Professional Affiliations

Virginia Water Environment Association

Relevant Experience

→ Owner Advisor Lead for the Hillsborough County South County Water Campus Owner's Advisor – Phase 1 DCP Procurement Support, Tampa, Florida. Services include procurement support for the Request for Qualifications (RFQ) and Request for Proposals (RFP) phases of the projects. This phase also includes providing ongoing technical support for the program and the SCPWTM and SCAWWTF Modular Expansion projects concluding once the design-build contracts are awarded for each project, respectively.

→ Project Manager/Package Lead for the East County Advanced Water Purification (ECAWP) Project for the Padre Dam Municipal Water District and the ECAWP Joint Powers Authority, California. The project includes two existing pump station upgrades and 19,000-ft of force mains. Assisted with design reviews, permitting and easement acquisition for the project. It is part of a $900M program to supply 30% of East San Diego County with a reliable source of drinking water.

→ Owner's Advisor Lead for the City of Sunrise, Florida. Development of Design Criteria Packages and contract documents for three sewage lift station upgrades and associated force mains utilizing Fixed Price Design Build procurement. Created RFP documents for the procurement of the design-build team.

→ Project Delivery and Procurement Lead for the Comprehensive Long-Term Residuals Management Plan for the Bowling Green Municipal Utilities (BGMU), Kentucky, Water Recovery Facility. Carollo is assisting the Utility with analyzing various procurement strategies for its biosolids project to efficiently address near- and long-term solids management needs (in an O&M-friendly manner) and mitigate future regulatory concerns (without stranding assets).

→ Project delivery/procurement Lead for the City of Margate, Florida. As Owner's Advisor, developing design criteria package for a plant-wide SCADA system upgrade using Fixed Price Design Build procurement. Developing RFQ and RFP documents in collaboration with City to select the design-build team.

→ Project delivery and procurement advisor for the New York City DEP. As the owner's advisor, assisted the NYC DEP with development of best practices for its first design-build procurement projects, including front end documents and design criteria format.

→ Project Delivery and Procurement assistant for the City of Alexandria, Virginia, Waterfront Implementation Owner Advisor Services. Project includes management consulting services in support of the redevelopment of the Waterfront Area, especially pertaining to resiliency planning and flood mitigation. Project includes alignment of the proposed improvements to the City's Waterfront Small Area Plan vision, goals, and objectives, and engaging wide-ranging groups of project stakeholders. Carollo is also advising the City on the value of alternative delivery methods such as Progressive Design-Build (PDB) in achieving programmatic goals.

→ Deputy project manager for the Kansas City, Missouri, Blue River Biosolids Facility using Fixed-Price-Design-Build-Operate (FPDB) Procurement. This $150 million biosolids project involves the installation of the first Thermal Hydrolysis Process (THP) system in the Midwest to treat 90 dry tons of biosolids from three area WWTPs. Acting as the Owner's Advisor (OA), led a multi-discipline project team to implement a FPDB procurement for the City. Assistance to the City includes procurement strategy development, packaging evaluations, development of Preliminary Design of the THP

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J. Michael Morris, P.E.

system, development of all technical procurement documents (RFQ, RFP and Extending Commissioning service contract), comprehensive evaluation of proposal submittals, and negotiation of a long-term service contract.

→ Procurement/delivery lead for the City of Grants Pass, Oregon, Water Restoration Plant, Phase 2 Upgrade Project. As Owner's Representative, assisted the City in the management of planning and procurement of the $25 million project to further treatment reliability of the plant, which includes major process upgrades and expansion. Job responsibilities included selection of the PDB delivery model, evaluation of packaging alternatives, development of design-build procurement and contract documents, and negotiations with the selected Design-Builder. Mike also helped develop the Reporting Requirements for the DB teams, create the Division 1 documents for DB procurement, and write the cost model template that was used for establishment of the GMP. The project is currently in the construction phase after successfully negotiating a Guaranteed Maximum Price with the Design-Builder.

→ Project delivery and procurement assistant as part of the Program Management Support team to the City of Los Angeles, California, Bureau of Sanitation's Advanced Water Purification Facilities Project at the 450-mgd Hyperion Water Reclamation Plant (WRP) and the 40-mgd Donald C. Tillman WRP. Assisted with procurement services, and contract development for the PDBO delivery of projects totaling an estimated $300 million.

→ Procurement and delivery assistant for the North Valley Regional Recycled Water Program Design-Build Project, City of Modesto, California. The project will convey highly treated wastewater from the City's tertiary treatment plant to agricultural customers who have seen their supplies severely curtailed in recent years. Responsible for developing the overall project delivery strategy and procurement approach as the basis of a supportable selection process for a DB team.

→ Project controls for the Metro Wastewater Reclamation District, Denver, Colorado, Northern Treatment Plant Program. The Owner's advisor is assisting the District in the management of the 5-year program for all planning, procurement, packaging, construction, and start-up services for the implementation of the 24-MGD Northern Treatment Plant, South Platte Interceptor, and the Effluent Pump-back System. The Owner's advisor is co-located with District staff for the delivery of the $475 million program. Specific duties included developing project management processes and procedures; developing, monitoring, and controlling program-level budgets and schedules throughout the Program; and developing reports for various stakeholders throughout the project.

→ Procurement/delivery task leader for the Littleton Englewood Wastewater Treatment Plant CMAR project to construct of a biogas treatment system to convert digester gas into renewable natural gas for injection into Xcel's natural gas pipeline. Responsible for RFP and addenda development, proposal evaluation, and contract negotiations.

→ Design and delivery lead for the Margate, Florida, East Wastewater Treatment Plant. This project upgraded the facility from 2.2-mgd to 5.0-mgd using IFAS for biological treatment. It also included new secondary clarifiers, blowers, pumps, and aerobic digester improvements. Evaluated alternative project delivery methods with City.

→ Project manager for the City of St. Petersburg, Florida, Albert Whitted Reclamation Facility (AWWRF) decommissioning and demolition project. The City is commissioning a new transfer lift station. Once this wastewater diversion is complete, the AWWRF will be taken out of service and demolished. After the development of a Decommissioning Plan for the AWWRF, Carollo is developing the design documents for demolition of the facility.

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Scott M. Vanier, P.E.

Scott Vanier is a senior vice president and serves as Director of Carollo's Utility Advisory Services. He is responsible for the operation and delivery of the firm's program management, owner's advisor, and management support services. Mr. Vanier has 25 years of experience specializing in the planning and management of capital delivery programs and projects ranging in size up to $6 billion. He has worked on more than a dozen recent major water projects acting as Owner's Advisor or Representative. His experience has included program/project planning, visioning and goal setting, standards and workflow development, project packaging and prioritization, alternative delivery analyses and procurement, and managing projects from planning through construction.

Licenses

Denver, CO

Education

MBA Business Administration, University of Denver, Daniels College of Business, 2004

MS Environmental Engineering, University of Nebraska, Lincoln, 1997

BS Civil Engineering, University of Nebraska, Lincoln, 1995

Licenses

Professional Engineer, Colorado

Professional Affiliations

Design-Build Institute of America

Water Design-Build Council

Project Management Institute

American Water Works Association

Water Environment Federation

Rocky Mountain Water Environment Association

Beta Gamma Sigma Honorary Business Fraternity

Chi Epsilon Honorary Civil Engineering Fraternity

Tau Beta Pi Honorary Engineering Fraternity

Relevant Experience

→ Project delivery and procurement advisor as part of the Program Management Support team to the City of Los Angeles, California, Bureau of Sanitation's Advanced Water Purification Facilities Project at the 450-mgd Hyperion Water Reclamation Plant (HWRP). Provided project delivery analysis, procurement services, and contract development for the PDBO delivery of the $50 million project. The project consists of a 3-mgd facility consisting of treatment of primary effluent by membrane bioreactor, reverse osmosis, advanced oxidation processes, and carbon filtration for water reuse at the Los Angeles World Airports. Performance validation period through a short-term O (1 to 3 years) will be required from the Design-Builder.

→ Program advisor as part of the Program Management team for the City of Sacramento's, California, Accelerated Water Meter Program. The Program Manager is assisting the City in the management of the 5-year $250M Program for the installation of over 60,000 water meters, including relocation of pipelines and service connections. Job responsibilities included identification of an alternative delivery model to expedite design, construction, and procurement to meet the 5-year schedule (from baseline 10-year schedule). Currently assisting the City in procurement of various work packages through a Multiple Award Task Order Contracting (MATOC) approach utilizing a combination of Job Order Contracting (JOC) and DB.

→ Delivery analysis lead and program advisor as part of the Owner's Advisor team of the Northeast Water Purification Plant for City of Houston, Texas. The project included an evaluation of DBB, DB, and CMAR delivery models and project packages for the $1.8 billion treatment facility. Currently in the design phase using PDB delivery, the project will constitute the largest PDB in the United States as well as the largest single-contract for a water/wastewater facility. The project also included development of a data collection tool to gather field data on the City's infrastructure that was damaged by Hurricane Harvey. Job responsibilities have included evaluation of DBB, DB, and CMAR delivery models and project packages for the treatment facility and program.

→ Program advisor and procurement expert for the Hi-Desert Water District, California, $150 million Wastewater Program; the Town of Longboat Key, Florida, $25 million Subaqueous Force Main; the City of San Jose, California, $1.4 billion Wastewater Capital Program; and the City of Santa Barbara, California, $120 million Charles E. Meyer Desalination Facility.

→ Program advisor as part of the Program Management team for the City of Sacramento's, California, Accelerated Water Meter Program. The Program Manager is assisting the City in the management of the 5-year $250M Program for the installation of over 60,000 water meters, including relocation of pipelines and service connections. Job responsibilities included identification of an alternative delivery model to expedite design, construction, and procurement to meet the 5-year schedule (from baseline 10-year schedule). Currently assisting the City in procurement of various work packages through a Multiple Award Task Order Con-

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Scott M. Vanier, P.E.

tracting (MATOC) approach utilizing a combination of Job Order Contracting (JOC) and DB.

→ Procurement lead and project advisor for the City of Kansas City, Missouri, Blue River WWTP Biosolids Facilities Project. As Owner's Representative, assisted the City in the management of planning and procurement of the $150 million project to further treatment and energy reliability of the plant, which includes major solids process upgrades (including addition of thermal hydrolysis process) and facility expansion. Job responsibilities include selection of the FPDB delivery model, development of design-build procurement and contract documents, and oversight of fixed/indicate design documents to support the FPDB procurement. The project is currently entering the final proposal phase with forthcoming activities consisting of negotiation of proposed Bid Price with the selected Design-Builder.

→ Technical advisor for the Sand Creek/ Second Creek Basins Regional Master Plan for the Metro Water Recovery, Colorado. Led the analysis of pumped flow versus new gravity pipeline alternatives in the northern Denver area. Facilitated collaborative decision-making between Denver, Denver International Airport, Aurora, Brighton, and South Adams County Water and Sanitation District. Developed preliminary routing and sizing for construction of the selected 22.5-mile Second Creek Interceptor and used hydraulic modeling to develop a phased capacity improvement plan for the existing Second Creek Interceptor System.

→ Owner's Advisor program manager of the Northern Treatment Plant Program for the Metro Water Recovery, Denver, Colorado. The Owner's Advisor assisted the District in the management of the 7-year Program for all planning, procurement, construction, and start-up services for the implementation of a 24-mgd advanced treatment facility, a 7-mile interceptor, and the 11-mile effluent pump back system. Job responsibilities also included: Program visioning and goal setting, organizational planning (O&M and management strategy and staffing requirements), high-performance teambuilding, alternative delivery analysis and delivery selection, project and design definition, procurement of design-build, and design-bid-build-teams, design refinement, negotiations of the guaranteed maximum price, and attainment of necessary permits and land acquisitions/rights-of-way. The Owner's Advisor was co-located with District staff for the delivery of the $475 million Program. The Program includes the largest, constructed PDB project to date in the U.S. water/wastewater industry, and has been referenced by the Water Design-Build Council and Design-Build Institute of America as an example for best value, qualifications-based procurement.

→ Technical advisor as part of the Owner's Advisor team for the South Florida Water Management District, West Palm Beach, Florida, L8 Reservoir and Pump Station Program. Provided expert oversight related to development and execution of procurement activities for the selection of design-build for the $60 million project.

→ Technical advisor as part of the Owner's Engineer for the Tampa Bay Water, Tampa, Florida, Lithia Hydrogen Sulfide Removal Project. Provided procurement assistance including financial assessments of the Engineer-Procure-Construction Manager (EPCM) proposers as part of the proposer selection for the $40 million project. The project also included procurement and selection of a contract operator (O) for a 3-year term.

→ Program manager and lead financial analyst for the Water and Wastewater Asset Management Program for the City of Scottsdale, Arizona. Led preparation of a comprehensive above- and below-ground asset inventory, valuation, and condition assessment database of the City's system-wide water and wastewater infrastructure. As part of the program, valuation/cost estimation of prioritized assets (approximately $6 billion for the City's systems) and a comprehensive risk-based CIP program and decision framework were developed.

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Jason C. Garside, P.E.

Jason Garside is a Vice President within Carollo's Utility Advisory Services Group, serving as the Project Delivery Manager. He performs program management/owner advisor services for water and wastewater clients, as well as provides expertise in alternative project delivery. Mr. Garside is a professional engineer with 26 years of experience in project management and engineering within the areas of drinking water treatment/distribution, wastewater treatment/conveyance, civil engineering, and stormwater management.

Location

Denver, CO

Education

MS Civil Engineering, University of Colorado, Boulder, 1996

BS Civil Engineering, University of Washington, Seattle, 1994

Licenses

Professional Engineer, Colorado, Virginia

Professional Affiliations

Design-Build Institute of America

American Water Works Association

Relevant Experience

→ East County Advanced Water Purification Project Owner's Advisory Services, Joint Powers Authority/Padre Dam Municipal Water District, CA. Contract Oversight/Procurement Manager for the $950M project (comprised of five progressive design-build packages), managing all activities associated with the design-build contract oversight and procurement. Managed review of design-builder's cost estimates and facilitated the development and agreement of GMP amendments.

→ Project Delivery and Procurement Lead for the City of Alexandria, Virginia, Waterfront Implementation Owner Advisor Services. Project includes management consulting services in support of the redevelopment of the Waterfront Area, especially pertaining to resiliency and flood mitigation. Carollo is assisting the city deliver this $150M project via Progressive Design-Build (PDB).

→ Design-build procurement lead and business integration manager for the Metro Water Recovery's $475 million Northern Treatment Plant program. The 6-year program consists of comprehensive management and engineering services for the planning, design definition, procurement, construction, and start-up of the District's new 24-mgd greenfield wastewater facility and regional interceptor system. The treatment facility was implemented utilizing progressive design-build delivery. Responsible for procurement documentation, management of business integration team, assistance with project controls, and contract administration.

→ Hyperion Advanced Water Purification Facility 100 Percent Recycled Water Program, City of Los Angeles, CA. Project manager for owner's advisory services for this $80M project. This new 1.5-mgd AWPF will supply recycled water to various users, including LAX, and lay the groundwork for future reuse facility delivery options. This project is being delivered via progressive design-build (LASAN's first PDB).

→ Alternative delivery/procurement manager for the City of Houston's $2 billion Northeast Water Purification Plant (NEWPP) Expansion project. The project is being delivered via progressive design-build and consists of 320-mgd of water treatment plant improvements and new raw water intake facilities. Responsible for managing all activities associated with procurement of the design-builder.

→ Wastewater Capital Improvements Program, City of San Jose, CA. Procurement and alternative delivery advisor for San Jose's $1.4B wastewater CIP. Responsible for planning Carollo's overall procurement and project delivery approach, helping select the preferred project delivery methods, and delivering procurement documentation.

→ Project manager for owner's advisor services for the City of Thornton's $100 million Thornton Water Treatment Plant Replacement Project. The project is being delivered via progressive design-build, and consists of a new, greenfield 20-mgd water treatment plant. As Owner's Advisor, Carollo provided a conceptual design, procurement services, oversight of design-builder, and permitting. Services include development of solicitation documents (RFQ/RFP) for the Design-Builder and proposal evaluation assistance. Coordinated closely with City's legal counsel to develop DB Agreement. Our team also provided engineering and construction support, including design reviews, value-engineering, cost estimate reviews, risk management, and comprehensive construction oversight. Jason was re-

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Jason C. Garside, P.E., DBIA

sponsible for managing all owner's advisor activities during planning, design-build management, and construction oversight phases of project.

→ Project manager for owner's advisor services for the $10 million BCB Field Station progressive design-build project for the South Florida Water Management District, West Palm Beach, Florida. Responsible for project execution plan, design definition, design-builder procurement assistance, and validation of design-builder cost proposals.

→ Alternative delivery/procurement manager of the City of Santa Barbara's $55 million Desalination Facility Rehabilitation project. The project was delivered via design-build-operate, and consists of up to 10-mgd of water treatment plant improvements and new ocean intake facilities. Responsible for managing all activities associated with procurement of the design-build-operator, and for providing design-build delivery guidance.

→ Charles E. Meyer Desalination Reactivation Project, City of Santa Barbara CA. Design-build procurement manager for the $72M project, managing all activities associated with procurement of the DB operator and guidance on DB delivery.

→ Owner's advisor manager (interim) for the SFWMD,West Palm Beach, FL, L8 Pump Station and Inflow Control Structure Design-Build Project This $60-million DB project allowed for full functionality of a 46,000-AF, manmade reservoir. New infrastructure consisted of a 291-mgd pump station, a 1,940-mgd inflow structure, and armoring modifications surrounding the reservoir. Responsible for management and engineering services in association with project execution planning, design definition and the procurement of the design-builder.

→ Project manager for owner's advisor services for the implementation of the $25 million Phase 1 Water and Wastewater System for the Ute Lake Ranch Public Improvements District, New Mexico. Phase 1 consisted of design-build delivery of a surface water intake structure; non-potable water transmission, storage, and pump station; potable water storage and transmission; wastewater collection and pump stations; a wastewater treatment facility; and effluent disposal system. Responsible for utility master planning; water rights assessments; permitting assistance; agency approvals; land acquisition assistance; design management; subconsultant procurement and management; scheduling and cost estimates; and construction oversight.

→ Design-build procurement manager for the Town of Longboat Key's $25 million Subaqueous Force Main project. Responsible for management and delivery of project execution plan, delivery method selection, and design-builder procurement.

→ Design-build project controls manager for the City of Longmont's $30 million Ammonia Treatment and Biosolids Improvements project. The design-build project was delivered by the Carollo Design-Build Group. Responsible for managing all project controls activities, including cost and schedule management, risk management, and document controls.

→ Deputy project manager for the Colorado Springs Utilities Groundwater Collection/Treatment System Project, Colorado. This design-build project consisted of raw water collection and conveyance (designed by others) and improvements to a 2-mgd groundwater treatment facility. Responsible for process and mechanical design, project management and construction services.

→ Project engineer for the design of improvements to Colorado Springs Utilities Ute Pass Water Treatment Plant, Colorado. This project consisted of expanding the plant's capacity from 1 to 2 mgd and improving backwash water recovery practices. The facility improvements associated with this project include the addition of two new package treatment units, modification to chemical feed systems, and modification to the raw water conveyance system. Responsible for the civil, process, mechanical design, and construction services.

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M. Scott Richards, P.E.

Scott Richards has 19 years of industry experience completing numerous projects throughout the state of Florida. He serves as a Carollo's Southeast Regional Infrastructure Lead. His broad background of projects for municipal clients includes planning, design, permitting, and construction of treatment, conveyance, and collection systems. He also specializes in pump stations and pipeline systems, including potable and reclaimed water transmission/distribution, and wastewater collection systems. This includes the design of new systems and the replacement/rehabilitation of existing systems as well as design and construction of systems in wetlands, bay and river crossings, and other challenging construction conditions.

Location

Orlando, FL

Education

BS Mechanical Engineering, University of Florida, Florida, 2002

Licenses

Professional Engineer, Florida

Professional Affiliations

American Water Works Association

Florida Water Environmental Association

→ Project manager for the Daytona Beach South Beach Street Force Main Improvements Project – Bethune Tie-in Design, Orlando, Florida. Leading the design to revise the tie-in location of the 36-inch force main pipe at the Bethune Point WRF to minimize risks associated with connecting to the existing 42-inch gravity sewer main. The intent is to tie-in to the existing open top structure immediately ahead of the current influent pump station at Bethune Point WRF. The city has identified the need for evaluating and designing the structural requirements for supporting of a 36-inch force main at this location.

→ Project engineer for the Town of Longboat Key, Florida, Subaqueous Force Main Permitting and Conceptual Design. The Town of Longboat Key sends its wastewater from the island to the Manatee County Southwest Water Reclamation Facility. The wastewater is transported by a 20-inch ductile iron pipe that was installed in 1973, and where approximately 11,000 linear feet of the pipeline route is subaqueous across the Sarasota Bay. Technical lead for the design and environmental permitting of the Town's proposed subaqueous force main replacement. Permit application documents includes data collection, a routing study and preliminary design plans with construction methodology.

→ Project manager for the City of Boynton Beach, Florida, Assessment and Design of Force main Isolation Valves for City-Wide Redundancy. Carollo provided an assessment and design services of force main isolation valves to establish reliability improvements in the collection system. The evaluation resulted in recommendations to add valves in the City's 36-inch force main to increase reliability in the system. The installation was designed with a "thrust box" design to allow for insertion of valves while using flow through line stops to maintain system operation.

→ Project manager/engineer for the City of Daytona Beach, Florida, emergency replacement of the Brennan Water Treatment Plant Discharge Header. This project included the condition assessment, which was then followed by an emergency design, bidding, and construction to replace the deteriorating 36-inch header pipe. The project focused on schedule, equipment lead times and project sequencing in order to maintain operation of the pump station at all times while minimizing risk. Responsibilities included project management, investigation/recommendations, mechanical design, and construction support.

→ Project engineer for the City of Sunrise, Florida, Pine Island Force Main Replacement Evaluation Design. Carollo performed a hydraulic model analysis to verify design capacity to confirm pipe sizing requirements. Design included a new sewer force main ranging in size from 4-inch to 24-inch with materials consisting primarily of HDPE and PVC. A unique feature of this project included the installation of new sewer force main piping in a previously abandoned 30-inch steel water main to minimize installation costs.

→ Project engineer for the Florida Keys Aqueduct Authority, Florida, Grassy Pipeline Evaluation and Design. Project included: pipeline materials selection, pipeline design, a corridor study, and extensive existing utilities investigation and coordination. The design was comprised of approximately 11,000 linear feet of 30-inch steel, cathodically

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M. Scott Richards, P.E.

protected, pipeline with four Highway US-1 crossings, which included directional drill and open-cut construction methods. Significant design and construction considerations included challenging dewatering conditions and construction through tidal zones.

→ Project manager (Pipeline) for the City of Tampa, Florida, Augmentation project. The City retained Carollo to implement alternative potable water supplies. The project was developed to 30% design to obtain funding prior to proceeding with final design. Led the design, which included a route analysis followed by survey and geotechnical data collection. Plans were developed including the pump station, approximately 100,000 ft of pipeline (16 to 48 inch) and recharge/recovery wells. The route corridor went through the heart of Tampa, including multiple major highway crossing and a river crossing. Additionally, roadway and traffic impacts were assessed in the primarily urban corridor, requiring a close look at major crossings.

→ Project manager for the JEA, Florida, Broward River Crossing Reclaimed Directional Drill. The project included the installation of a reclaimed water main crossing underneath the Broward River. The crossing consists of approximately 3000 linear feet of 30-inch HDPE pipeline, installed via directional drill underneath the River and two railroad crossings. This pipeline allowed for reclaimed water to be transferred from JEA's District II WWTP to commercial customers on the east side of the Broward River. Responsibilities included project management, design, permitting, and construction oversight for the project.

→ Project engineer for the Greater Orlando Aviation Authority, Florida, Orlando International Airport (MCO) South Automated People Mover Utilities. This project consisted of the initial phases of the South Terminal for the airport's expansion, which included a rail terminal facility, hotel, parking garage and 64 additional airline gates. The Civil work (roadway/drainage/utilities) includes planning and design for the expansion, with utilities consisting of approximately 17,500 linear feet (lf) of 16-inch water main, 3,300 lf of 6-inch force main, 2,000 lf of 10-inch reclaim main and 2 wastewater pump stations. Pipeline installation included open cut for new construction, along with directional drilling under a canal, and jack-and-bore crossings of Jeff Fuqua Blvd to connect to existing utilities. Utility master planning was conducted using facility flow data based projected passenger data. Responsibilities included design, permitting, and construction services of the utility system.

→ Project engineer for the City of Hollywood, Florida, Taft/Sheridan Street Area Water Improvements. Project included the installation of a new replacement of the water distribution system in the City of Hollywood. This includes engineering services for survey, design, and preparation of construction documents, regulatory assistance, bid and award assistance, and construction phase services for the installation of approximately 44,200 lf of 4-inch, 6-inch, 8-inch water, and 12- inch mains. This primarily residential area previously consisted of "back-of-lot" water services with small galvanized and AC water mains. As part of the pipeline replacement, all neighborhood roads and impacted major intersections were repaved. This project included primarily open cut installation, but also included directional drill and jack-and-bore crossings of major intersections. Responsibilities included design, permitting, and construction services.

→ Project engineer for the Panama City-Bay County International Airport, Florida, Airport Fire Protection Booster Pump Station. This project including ground storage facilities, disinfection systems, pumping, and transmission piping associated with a potable water and custom fire protection system to accommodate the needs of the new Panama City Airport. The pump station capacity exceeded 12,000 gpm and included a prestressed ground storage tank and approximately 3,000 ft. of 30-inch pipeline. A major component included maintaining water turnover during low demand periods and included several flow control valves with a control strategy for maintaining water quality. Responsibilities included design, providing project specification and engineering drawing review, cost estimates, and field startup/testing.

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Kathleen Kharkar, P.E., PgMP

Kathleen Kharkar has more than 30 years of experience in a wide variety of projects and roles, ranging from planning, design, and start-up to utility finance and program management. She considers her work on stormwater, water supply, water and wastewater treatment, and biosolids projects a practice of environmental stewardship.

Licenses

Arlington, VA

Education

ME Environmental Engineering, University of Maryland, 2000

BS Civil Engineering, University of Maryland, 1985

Licenses

Professional Engineer, Virginia, Maryland, Washington, DC

Program Management Professional

Professional Affiliations

Project Management Institute

American Water Works Association

Water Environment Federation

Previous Relevant Experience

→ Project manger for Risk and Change Management Branch of the Capital Improvement Program Infrastructure Management Department (CIPIM). CIPIM's mission included providing tools, analysis, oversight and leadership to ensure capital program goals are achieved within fiscal boundaries through a transparent and collaborative process. Specific duties included developing tools and communication strategies and rhythms for use by project and program managers to monitor and report grant and loan opportunities and spending, budget, schedule and contract changes, and managing the development of a financial model for use by engineering and operations departments as a tool to determine optimum timing of investments between capital and maintenance. Additional duties included, stage gate and risk management reviews. Kathleen also participated in a Water Research Foundation (WRF) Project to test business process modeling for Business Case Evaluations and Capital Project Prioritization, and participated in the facilitation of the transition of procurement functions from the Engineering Division to a new Capital Procurement Department. She developed Engineering Standard Operating Procedures for the sourcing phase of procurement for both professional services and construction contracts.

→ Project manager for Program Management Branch of DC Water's Department of Wastewater Engineering, whose mission included planning and monitoring the capital program and executing capital projects for the Advanced Wastewater Treatment Plant at Blue Plains. Specific management duties included leading and managing DC Water staff and consultants, providing direction for planning studies, providing recommendations for capital priorities to senior management, preparing presentations for communications to the Board of Directors, and developing consensus among project stakeholders on specific technical solutions as well as capital priorities. Kathleen provided technical documentation required for applications and reporting for FEMA Pre-Disaster Mitigation and BRIC grants. She also led the procurement of a power purchase agreement for solar power for DC Water.

→ Project engineer for the development of a strategic process engineering plan for the Blue Plains Advanced Wastewater Treatment Plant (Total Nitrogen Removal/Wet Weather Plan). The plan proposed a comprehensive approach to implement DC Water's Long Term Control Plan and the new permit for Total Nitrogen discharge because of the Chesapeake Bay Program requirements. These were two separate requirements and the capital programs for each were developed independent of one another. A comprehensive review resulted in projected $500 million capital cost saving and better projected water quality in the Potomac River. Made several presentations throughout the development of the plan to stakeholders.

→ Led DC Water's annual update of its 10-year Capital Improvement Program (CIP) for the Wastewater Treatment Service Area. Specific tasks included: working with DC Water departments to define their capital needs, compiling cost opinions, justifications, and operations and maintenance impacts of each potential project, establishing 10-year program schedules including design, construction, and procurement activities for each project, and coordinating among DC Water departments to establish priorities such that the DC Water financial targets for the CIP were met.

→ Project manger for a facilities plan for the 370-mgd Blue Plains Advanced

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Kathleen Kharkar, P.E., PgMP

Wastewater Treatment Plant. This facilities plan was essential for the then-newly created DC Water and Sewer Authority to determine their initial capital needs for the liquid treatment processes at Blue Plains and resulted in a recommended capital improvement program to ensure the facility meets effluent discharge permit requirements. Ten years later, Kathleen prepared a 20-year projection of capital needs at Blue Plains for use until the next Facility Plan was completed.

→ Project lead for the development and implementation of a Quality Management System for the DC Water and Sewer Authority's Department of Engineering and Technical Services (DC Water) to confirm that design consultants hired by the authority perform appropriate quality assurance and quality control on their design documents. Reviewed and approved design engineer's Project Quality Plans and performed quality audits of project design engineers hired by DC Water.

→ Quality representative for two program management contracts, which entailed preparation of the Program Quality Plans as well as training and compliance. This role also required establishing and maintaining a risk register and providing the program manager and the client with a status of potential issues that could impact safety, schedule and budget and working with the program management team to develop and track mitigation measures.

→ Project manager for tasks requested by Baltimore city staff members to assist in discussions with Baltimore County representatives related to the county's proposed revision to a cost-sharing agreement for water services. Evaluated utility and cash basis of capital cost sharing and conducted a sensitivity analysis of future water projections. Prepared presentations for City Council.

→ Water Supply Plan for New Castle County, Delaware. The plan included projection of regional water supply needs, assessment of current and potential water supply sources, and evaluation of alternatives to meet the projected need. Specific tasks included development of a monthly water demand and supply model to predict future water needs, identification of potential development of additional water sources, as well as demand management strategies and screening of alternatives. The alternatives evaluation considered a variety of factors including, technology selection, economic, neighborhood, environmental and legal considerations.

→ Project manager for sewer system evaluation survey for the Blind Brook Sewer District in Westchester County, New York, including visual inspection, smoke testing, review of treatment plant records, and climatological and oceanographic data. Made recommendations that once implemented, reduced inflow to the sewer significantly.

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Location

Tampa, FL

Education

AS, Civil Engineering, University of Puerto Rico, 2008

Certification

Designated Design-Build Professional (DBIA)

Gerardo Torres, DBIA

Gerardo Torres has more than 24 years of experience in water and wastewater treatment projects, including estimating, preconstruction, and project operations on design-bid-build and integrated delivery (Design-Build and CMAR) projects. His construction experience includes interagency coordination, program development and implementation, program, project and construction management, successful project close-out, daily direction of a team of managers and inspectors, budget controls and change order management, development and modification of resources to maintain schedules, dispute resolution and regulatory/environmental compliance.

Relevant Experience

→ Construction manager for the City of Tampa/Garney, David L. Tippin Water Treatment Plant Chemical System Improvements Project Package 1 and 2 – Engineering Services During Construction. Provided engineering services during construction for DLTWTF Chemical Systems Package 1 and Package 2 construction.

→ Construction manager for the Sarasota County, Florida, Bee Ridge WRF Expansion. This detailed design development phase focuses on the development of construction documents including plans, specifications, and other documents supporting establishment of a Guaranteed Maximum Price (GMP) to be negotiated by the Construction Manager at Risk (CMAR).Consultant services during this phase will also include the necessary project and quality management, permitting assistance ,and public involvement services.

→ Resident project representative for Manatee County, Florida, Lake Manatee Water Treatment Plant Filter Upgrade. Project includes preliminary design, design, and construction phase services for the Lake Manatee Water Treatment Plant. The existing water treatment plant includes a conventional surface water treatment train comprising coagulation, flocculation, sedimentation, and filtration. The existing multimedia filters are approaching the end of their useful life and will be retrofitted with a membrane ultrafiltration system. Responsibilities include resident project representative inspection and startup assistance.

→ Constructability reviewer for Polk Regional Water Cooperative, Polk County, Florida, Phase 2 Southeast Water Purification Facility and Pipeline. This project includes the final design and construction services of the Southeast Wellfield Test Production Well 3.

→ Field investigation and data review for the City of Sarasota, Florida, Wastewater Treatment Plant Improvements Project – Phase 1. This project primarily is to renew and/or replace existing facilities, automate existing treatment processes, "harden" existing facilities against severe weather events and cyberattacks, evaluate electrical needs, and provide redundancy for critical infrastructure for the existing 10.2 million gallon per day (mgd) advanced wastewater treatment plant. Only relatively minor upgrades have been performed with the updating of reclaimed filters and the expansion of the headworks completed in 2019.

→ Construction inspection services for Pasco County, Florida, Southeast Wastewater Treatment Plant Expansion – CEI Services. This project consists of engineering services during construction and on-site resident project representative and construction inspection services of the Southeast Wastewater Treatment Plant expansion from 3- to 6-mgd AADF, plus several thousand linear feet of force main replacement and addition outside the fence.

→ Construction observation for Pinellas County/PCL, Florida, Dunn WRF Filtration Improvements Progressive Design-Build. The PCL/Carollo design build team was retained by Pinellas County to design and construct the filtration and disinfection improvements at the WEDWRF. Three new AquaDiamond® cloth media filters will be

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Gerardo Torres, DBIA

installed in three of the existing traveling bridge filter basins to increase capacity in each basin and to replace aging filter equipment. The fourth traveling bridge filter equipment fill be removed from the basin under this project. A new bulk liquid sodium hypochlorite system will be constructed to replace the existing gas chlorine system that feeds chlorine to the CCCs. This system will consist of two bulk storage tanks, two loop recirculation pumps to provide the chlorine to the off-site pump station, and seven chemical feed skidded pumps. Responsibilities included sink hole observation.

→ Construction administration services for Pasco County, Florida, Wesley Center WWTP Parking Area Addition – Bidding and Construction Services. The project consists of constructing approximately 37,000 ft^2 (0.85 ac.) of concrete/asphalt parking area to accommodate a minimum of 110 parking spaces with an appropriate stormwater system consisting of vegetative swales, drainage structures, and a retention stormwater treatment area (STA).

Previous Experience

→ Design-Build manager for the Miami-Dade County, Florida, Miami-Dade Central District Wastewater Treatment Plant Oxygen Production Facility. This wastewater oxygen production facility is located at the Central District Plant in Key Biscayne. This $57.9-million project included a new building to house two 90-ton-per-day, vacuum pressure swing adsorption oxygen production units; associated electrical, instrumentation and controls; as well as site and civil work. Construction also includes process mechanical, architectural, structural, plumbing, HVAC, and fire protection.

→ Design-Build manager for the City of Fort Lauderdale, Florida, G.T. Lohmeyer Wastewater Treatment Plant. This $18M design-build project included the design, permitting, construction, startup, and testing of a new vacuum pressure swing absorption (VPSA) building capable of housing 2 to 40-ton-per-day vacuum pressure swing adsorption VPSA units with an electrical room, control room, and associated appurtenances. The 100% design included one 40 ton per day oxygen generation system, modifications to reactor basins and to the existing plant electrical and (SCADA) systems to power and control the new VPSA. Construction also included site improvements, process mechanical, architectural, structural, plumbing, HVAC, and fire protection.

→ Preconstruction/estimating manager for the Bradenton, Florida, Lake Manatee Water Treatment Plant Filter Upgrade. This $12.7M design-build project replaced the existing water filtration system with more advanced filtration technology that improved water filtration levels. The scope of work included retrofitting the existing filter building with ultrafiltration membrane trains, including air scour blowers, a compressed air system, a clean-in-place system, and chemical storage.

→ Design-Builder manager for the Delray Beach, Florida, South Central Regional WWTP Blower and Efficiency Upgrades. This is a $12.7 progressive design build project to increase the plant's treatment capacity from 24-mgd to 36-mgd. Work included replacing blowers and aeration systems, raising influent boxes, and increasing overall aeration capacity, and performing restoration and maintenance to the aging plant.

→ Preconstruction manager/chief estimator for the City of Atlanta Department of Watershed Management, Georgia, Water Supply Program. This $318M CMAR project included converting an existing rock quarry to a 2.4-billion-gallon-per-day water facility while digging and boring and installing a 5-mile, 10-foot-diameter tunnel to connect the quarry facility to the Hemphill Water Treatment Plant and Chattahoochee Water Treatment Plant. The project also includes a new 180-mgd pump station at the Hemphill Water Treatment Plant and a new 253-mgd pump station at the quarry. This project will provide Atlanta with a reliable supply of drinking water for the next 100 years and increase the emergency raw water reserve from three days to more than 30 days.

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Ricardo G. Borromeo, P.E.

Ricardo Borromeo, an Associate Vice President with Carollo, has 24 years of industry experience, completing numerous projects throughout the state of Florida. As part of Carollo's Infrastructure group, Ricardo serves as a project manager, engineer of record, technical lead, and quality control reviewer. His broad background of projects for municipal clients includes engineering, planning, and design of water and wastewater treatment plants, water and wastewater transmission, storm water, and pump stations. Ricardo has a proven track record of managing infrastructure projects and continuously demonstrates his ability to successfully manage challenging projects.

Location

Tampa, FL

Education

MS Environmental Engineering, Rose-Hulman Institute of Technology, 1999

BS Chemical Engineering, University of Notre Dame, 1996

Licenses

Professional Engineer, Florida, Indiana

Chemical Engineer, Philippines

Professional Affiliations

Water Environmental Federation

Florida Water Environmental Association

→ Pipeline Design Lead for the Hillsborough County South County Water Campus Owner's Advisor One Water Campus Pipeline Corridor Project, Tampa, Florida. This project includes the design, permitting, and construction of approximately 13 miles of 36-inch reclaimed water transmission main and approximately 11 miles of 42-inch wastewater force main. Portions of the project route will be through wetlands and other environmentally sensitive lands. Services include development of a Design Criteria Package (DCP) to meet the County's needs, route study, procurement support, real estate acquisition support, attend workshops and progress meetings, review of Design-Builder plans, specifications, project costs, and other submittals, and provide other as needed support functions and services.

→ Project manager for the Town of Longboat Key, Florida, Upland Force Main Rehabilitation – Owner's Advisor. The project is for the rehabilitation of approximately 6,400 LF of the 20-inch force main via slip lining utilizing 18-inch HDPE pipe. Limits of the rehabilitation extends from the Town's metering station near 53rd Avenue West southerly to the location of the June 2020 break. Project delivery is through a design-builder providing design, construction, rehabilitation, and project management services.

→ Pipeline Design Lead for the Hillsborough County South County Water Campus Owner's Advisor – Potable Water Transmission Main, Tampa, Florida. This project includes the design, permitting, and construction of approximately 11.5 miles of 42 and 48-inch water transmission main. Portions of the project route are through wetlands and the County's environmentally protected lands (ELAPP). Services include development of a Design Criteria Package (DCP) to meet the County's needs, route study, procurement support, real estate acquisition support, attending workshops and progress meetings, review of Design-Builder plans, specifications, project costs, and other submittals, and provide other as needed support functions and services.

→ Project manager for the Town of Longboat Key, Florida, Subaqueous Force Main Permitting and Conceptual Design. The Town of Longboat Key sends its wastewater from the island to the Manatee County Southwest Water Reclamation Facility. The wastewater is transported by a 20-inch ductile iron pipe that was installed in 1973, and where approximately 11,000 linear feet of the pipeline route is subaqueous across Sarasota Bay. This project is for professional consulting services associated with the environmental permitting of the Town's proposed subaqueous force main replacement with the Florida Department of Environmental Protection and Army Corps of Engineers. Permit application documents included a routing study and conceptual design.

→ Quality control reviewer (Pipeline) for the City of Tampa, Florida, Augmentation project. The City retained Carollo to implement alternative potable water supplies. The project was developed to 30% design to obtain funding prior to proceeding with final design. The design included a route analysis followed by survey and geotechnical data collection. Plans were developed including the pump station, approximately 100,000 ft of pipeline (16 to 48 inch) and recharge/recovery wells. The route corridor went through the heart of Tampa, including multiple major highway crossing and a river crossing. Additionally, roadway and traffic

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Ricardo G. Borromeo, P.E.

impacts were assessed in the primarily urban corridor, requiring a close look at major crossings.

→ Project manager and engineer of record for the Sarasota County, Florida, MLK Way Force Main Replacement, Phase 2. County owns the 12-inch, DR-25 PVC force main that runs 2,700 LF along MLK Way from the 27th Street MLK lift station to Tuttle Avenue. In addition, the County owns approximately 2,700 LF of 10-inch asbestos cement (AC) FM that parallels MLK and approximately 1,000 LF of 10-inch PVC FM. This project was for the development of construction plans and providing engineering services during construction for the replacement to the above-mentioned force mains.

→ Engineer of record for the City of Boynton Beach, Florida, Assessment and Design of Force main Isolation Valves for City-Wide Redundancy. Carollo provided an assessment and design services of force main isolation valves to establish reliability improvements in the collection system. The evaluation resulted in recommendations to add valves in the City's 36-inch force main to increase reliability in the system. The installation was designed with a "thrust box" design to allow for insertion of valves while using flow through line stops to maintain system operation.

→ Engineer of record for the Pasco County, Florida, Southeast WWTP Expansion, Phase 2. The project also consists of the construction of approximately 1,100 lineal feet of 16-inch PVC force main, 1000 lineal feet of 24-inch PVC force main, 400 lineal feet (of 20-inch HDPE via HDD, 1,000 lineal feet of 30-inch HDPE via HDD, and 200 lineal feet of 24-inch PVC with 42-inch steel casing via jack and bore (J&B). Pipe installation was through conventional open cut in open areas of the right-of-way. HDD under wetlands and a creek, and J&B under Handcart Road and Clifton Down Drive.

→ Quality control review for the Polk Regional Water Cooperative, Florida, Water Supply Improvements. This project was for the development of three approved water supply projects and included routing studies and conceptual design of 120 miles of raw water and transmission pipeline, two booster pumping stations, and the integration of the system with another alternative supply facility, also designed by the Carollo team. With a stand-alone construction budget of over $300M, the Southeast Wellfield water production facility and distribution system is just one aspect of the largest and most complex regional water supply projects in Florida.

→ Quality control review for the Sarasota County, Florida, Peace River Phase 3A Pipe Design. This project was the design portion for Phase 3A of the Regional Integrated Loop System. The project encompassed full design of 10 miles of 48-inch pipe, including permitting, surveying, property acquisition, and storage and high-service pump station design at the Carlton Water Treatment Plant (WTP).

→ Lead engineer for the Miami-Dade County Water and Sewer Department, Florida, Replacement / Rehabilitation of 72-inch Sanitary Sewer Force Main Design Build on NW/NE 159th Street from NW 17th Avenue & NE 10th Avenue. Responsible for design efforts for an emergency design-build project for WASD to replace/rehabilitate more than 3 miles of 72-inch PCCP sanitary sewer force main. Design included 8- and 16-inch temporary bypass piping to ensure that wastewater service was maintained for the three municipalities that share the force main during construction. In addition, more than ¼-mile of new 60-inch force main was constructed to connect the areas of HDPE sliplined 72-inch pipe.

→ Lead technical professional for the Harrison County, Mississippi Eastern Harrison County Regional Water Supply, Horizontal Directional Drill (HDD) Crossing. This project consisted of approximately 3,600 L.F. of potable water transmission main that included a 1,000 LF river crossing installed by HDD.

Brian W. Avon, P.E.

Brian Avon brings 16 years of experience in design, preparing contract documents and cost estimates, and facilitating the acquisition of permits. His work has included systems evaluation, pipeline design and condition evaluation, development of rehabilitation/ replacement improvements, construction, geotechnical engineering, and preparation of cost estimates and implementation schedules.

Location

Walnut Creek, CA

Education

BS Civil Engineering, University of the Pacific, 2007

BS Business Administration, University of Southern California, 2004

Licenses

Civil Engineer, California

Professional Engineer, Washington, Colorado, Maryland

Certification

Certificate, Pipeline Assessment Program, NASSCO, California, 2010

Affiliations

Western Society of Trenchless Technology (WESTT) Chairman of the Board of Directors

North American Society of Trenchless Technology (NASTT) Committee member

Pipe Users Group (PUG) Past Board Member

Relevant Experience

→ Project Manager and trenchless lead for the City of Ukiah, California, Phase 4 Recycled Water system expansion project, which includes 17,510 feet of 12- and 16-inch PVC pipe, booster pump station, and storage tank.

→ Trenchless engineer for the North Valley Regional Recycled Water Program Pipeline Design for the City of Turlock, California. Responsibilities included engineers services during construction for the project, which consisted of 7+ miles of 42-inch, welded steel pipe, three trenchless micro-tunnel crossings, a flow control facility, and ancillary facilities. Total construction cost for the project was approximately $28 million.

→ Trenchless lead for the City of Fresno, California, Kings River Pipeline. The design consists of 66,000 linear feet of 72-inch diameter pipe, including deep trenches (up to 30 feet deep), and difficult soil conditions. Responsible for preliminary design including routing analysis, hydraulic modeling evaluations, and engineering services during construction (ESDC). Also responsible for site investigations; utilities search; coordination of geotechnical, permitting, and surveying efforts; and development of plans, specifications, and cost estimates. Final design was completed in 2015 and construction completed 2018.

→ Staff engineer for the City of Santa Clara, California, Monroe Street, Chromite Drive, Machado Avenue, and Nobili Avenue Sewer Improvements design project. The project included removing approximately 9,300 feet of existing sewers ranging from 10- to 18-inches in diameter and constructing new 12- to 24- inch sewers. Project was located in a residential neighborhood and included two siphon creek crossings.

→ Trenchless/QA/QC for design of the $35 million Marina Coast Water District, California, Regional Urban Water Augmentation Project. The project includes design of 40,000 feet of 16- through 24-inch ductile iron pipe, a 2.0-MG steel reservoir, and multiple customer turnouts. Project highlights include extensive project coordination with the Monterey Regional Water Pollution Control Agency to ensure the system design sufficiently provided irrigation service and groundwater injection well capacity. The pipeline is designed for high pressure service, up to 250 psi and fully restrained. Additional project challenges included determining requirements for five jurisdictional agencies and coordination with ongoing development projects within the City of Marina.

→ Trenchless lead for the Santa Cruz North Coast System (NCS) North Coast System Repair and Replacement Project. The NCS provides raw water from three separate sources through 16-miles of above- and below-grade pipe by gravity through some undeveloped, rugged, and environmentally sensitive areas of northern Santa Cruz County to the City's water treatment plant, including multiple crossings of Caltrans Highway 1. The existing steel, HDPE, DIP, and PVC pipes range in size from 10- to 24-inches in diameter. Evaluated the feasibility of trenchless alternatives for multiple alignments, performed cost estimating, and provided recommendations to be incorporated into the implementation plan.

→ Technical lead for City of Santa Barbara Caltrans Sewer Pipe Crossing Rehabilitation Project. The project's purpose was to assess the condition and capacity of and determine the best design alternatives for segments of the City's existing gravity sewer system adjacent to and crossing State Highway 101. Performed a desktop analysis that included reviewing the City's existing record

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Brian W. Avon, P.E.

drawings, CCTV footage, and GIS data. Assessed existing pipe conditions considering PACP scores, cleaning frequency, capacity requirements, and ease of maintenance. Prepared an alternatives analysis considering potential challenges such as construction, project duration, risks, and maintenance issues; environmental constraints; subsurface conditions; and potential trenchless solutions. Provided budgetary level cost estimates, design recommendations, preliminary plans, and prioritization criteria for the crossings. Recommended a plan to consolidate the gravity sewer main and identified feasible trenchless methods to reduce cleaning frequency while maintaining operational flexibility.

→ Project director/technical lead for a confidential client for replacement of approximately 3,960 feet of vintage 8- and 12-inch pipe with 3,670 feet of new 12 inch pipe via horizontal directional drilling (HDD) and open cut. The HDD was designed to go under the American River and under a 60-foot-deep flood wall. The new pipeline will be installed parallel to the existing pipe and the existing pipe will be decommissioned.

→ Project director/technical lead for a confidential client for replacement of existing 24- and 22-inch steel pipe with approximately 12,300 feet of new 36-inch pipe to provide needed capacity and replace aging infrastructure. Construction methods included open cut, microtunneling, and horizontal directional drilling. The project included a feasibility analysis, routing study, geotechnical analysis, trenchless design, risk assessment, and detailed design.

→ Senior project engineer for a Confidential Client, for their Site Utility Plan, necessary Municipal System Improvement Plan, and trenchless design of six 20-inch natural gas trenchless crossings. The design included approximately 7,200 LF of 4-inch sewer force main, 1,500 LF of gravity sewer, and 1,100 LF of 12-inch water main. The design was located in narrow county and state highway roads and required crossing a wide electrical right-of-way with high voltage KV lines. Project challenges included potential corrosion for induced current and corrosive soils, relocation of a 16-inch water line, acquisition of multiple easements and coordination for the transfer of ownership of the offsite construction to the local municipality.

→ Project manager and trenchless lead for the City of Ventura, California's Concentrate Outfall and Desalination Intake Feasibility Study. The study evaluated existing outfalls, geologic conditions, sizing of facilities, concentrate disposal alternatives, and provided construction recommendations. Additionally a regulatory strategy was established, preliminary permitting meetings were held, cost estimates and schedules were created, and a list of additional studies was provide.

→ Project engineer for the Central Contra Costa Sanitary District, California, Recycled Water Distribution System. The project will provide recycled water to irrigation users in Concord near I-680 south of Buchanan Fields Airport. The new three-mile-long recycled water main will tie into an existing 24-inch transmission line at the Buchanan Fields Golf Course. It will provide a drought-proof water supply for landscape irrigation of local businesses, office parks, and landscape medians in an area of Concord where predominantly turf-style landscaping irrigation currently consumes up to 255 acre-feet of potable water each year. When complete, it will reduce dependence on potable Delta water supplies, improve water supply reliability for irrigation customers, reduce wastewater discharge to the Delta, and increase water use efficiency.

→ Project engineer for the City of Santa Clara, California, Trimble Road Trunk Sanitary Sewer Condition Assessment. The project included the identification of specific rehabilitation and replacement needs of over 13,000 linear feet of sanitary sewer pipes. The sewer included 15- and 24-inch diameter siphons, 33- and 48-inch diameter gravity sewers, and 49 manholes and junction structures. The process included the review of the existing sanitary sewer system map, available historical data, sewer line and manhole inspection and evaluation, hydrogen sulfide monitoring, and the preparation of a condition assessment report.

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Location

Tampa, FL

Education

MS, Water Resources Engineering, Bangladesh University of Engineering and Technology, Dhaka, 1995

BS, Civil Engineering, Bangladesh University of Engineering and Technology, Dhaka, 1986

Licenses

Professional Engineer, Bangladesh

Project Management Professional

Certification

USACE Construction Quality Management Certification

OSHA 10 hrs. Certification

FDOT Certifications:

CTQP Final Estimate – I

CTQP Final Estimate – II
CTQP Asphalt Paving – I
CTQP Earthwork Inspector – I

ACI Concrete Field-Testing Technician – I

Professional Affiliations

Project Management Institute

Mohammed Matin, PEng, PMP

Mohammed Matin is an accomplished construction management professional with more than 35 years of professional experience in different infrastructure projects, and 20 years of experience in project/construction management.

His expertise includes contract administration of water and wastewater treatment facilities and pump station; construction supervision of numerous pipe installation methods for the large diameter sewer pipelines and force main, such as, Horizontal Directional Drilling (HDD), Ductile Iron (DI), High Density Polyethylene (HDPE), Poly Vinyl Chloride (PVC), Pre-stressed Concrete Cylinder Pipe (PCCP). Additionally, he is experienced in the construction supervision of post-tensioned segmental box-girder bridge; rigid concrete pavement and flexible bituminous pavement; and design and construction supervision of large mat foundations and cast-in-situ bored piles both tension and compression piles.

Relevant Experience

→ Resident engineer for the City of Tampa, Florida, David L. Tippin Water Treatment Facility Master Plan. The target development of the implementation of the master plan has been considered as the increased efficiency of the water treatment plant through the process of fluidized bed magnetic ion exchange; alternative treatment strategies; modifications to the plant's coagulation, flocculation, sedimentation, ozone and filtration systems. Mr. Matin is responsible for reviewing and monitoring the work against the contract documents to ensure compliance and report any non-conformances and deficiencies to the City and the Contractor to correct these deficiencies in a timely manner. Additional responsibilities include participating in regularly scheduled construction progress meetings, pre-construction meetings, site visits and evaluates existing conditions with respect to contract requirements; advising the Contractor in the event of any potential hazards are identified; coordinate with the Contractor to identify and resolve project related issues, including interpretation of contract requirements; etc.

Previous Experience

→ Quality assurance representative for the US Army Corps of Engineers, Jacksonville, Florida, Herbert Hoover Dike Project - Okeechobee Lake. The US Army Corps of Engineers administered the strengthening of the peripheral dike alongside the Lake Okeechobee at the south and west vulnerable part of the dike. The strengthening works of the dike were carried out through the construction of 22.0 miles partial cut-off-wall consists of a concrete-like-substance that forms a barrier to seepage along the dike and thus reduce the seepage piping across the dike which would substantially reduce the potential of dike failure in the event of high-water level and huge wave action induced from the long fetch within the lake. The cut-off-wall was 3-feet wide and 70-feet deep below the top level of the dike. Responsible to oversee the quality of the construction of conventional cut-off-wall; jet grout cut-off-wall; construction of working platforms; construction of guide walls; preparation of the daily reports and submit to the Construction Representative of US Army Corps of Engineers.

→ Senior construction inspector for the South Florida Water Management District (SFWMD), Martin and Okeechobee Counties, Florida, Lakeside Ranch Stormwater Treatment Area (Phase II). The purpose of the project was to reduce phosphorous loading from the stormwater run-off naturally using wetland plants before discharging to Lake Okeechobee. Phase II of the project was comprised of 30,328 linear feel of perimeter levees, 17,442 linear feet of interval levees, four inlet structures, three outlet structures, two internal structures and five over spillway structures. Responsible for finalizing the punch list items of the project, inspecting the execution of the punch list items works by the Contractor, etc.

→ Senior construction inspector for the City of Oakland Park, Florida, Engineering and Community Development Department, Bid Pack 8 – Infrastructure Improvement Project.

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Mohammed Matin, PEng, PMP

The infrastructures and utilities improvement comprised of drainage improvement, water main renovations, construction of sidewalks, etc. Responsible for supervision and quality control of the laying of 15-inch diameter Reinforced Concrete Perforated Pipes for the construction of French drain; construction of appurtenant drainage structures & manholes; laying of 8-inch diameter PVC C900 water mains with service connections; installation of fire hydrant units; flushing of water mains; pressure testing of the water mains; construction of sidewalks and curb & gutter; asphalt overlaying of the road; etc.

→ Construction inspector for the South Florida Water Management District (SFWMD), Taylor Slough/ L-31W Levee and Plugs, Miami-Dade County, Florida. The purpose of the project was to plug out the L-31 West canal of the Pump Station S332 at some specified locations to direct the flow overland and maintain more water in the Everglades National Park as a part of Florida Bay Plan. The work comprised of plugging out the L-31 West canal in nine locations; plugging the bottom of the downstream discharge basin of the Pump Station S332 by concrete pouring of ap-proximately 5-feet deep for seepage re-duction; and construction of 96-feet long weir to maintain the required water level at the detention basin. The weir was constructed with Artificial Concrete Block Mattress (ACBM). Responsible for overseeing the plug construction by maintaining the appropriate grading of the fill materials and design standard; appropriate measure to maintain turbidity compliance with-in the canal during filling; inspection and quality control of the concrete plugging works by tremie concrete pouring at the downstream of discharge basin of the pump station; driving of 23-feet long 75 nos. PZ – 35 sheet piles surrounding the concrete plug to activate as seepage cut-off wall; installation of stilling well for the automatic recording of water level though the SCADA system; installation of ACBMs for the construction of the weir; inspection of the project to certify the Contractor's Substantial Completion; preparation of the punch list; etc.

→ Construction inspector for the City of Miami Beach Public Works Department, Miami Beach, Florida, Highway Improvements and Upgrade Sewage Pump Station No. 1 in Jefferson Avenue. Responsibilities in the Highway Improvement Project included quality control and inspection works for the construction of 36-inch diameter PVC C900 sanitary sewer pipes and associated manholes; construction of 36-inch diameter A2000 drainage pipes, curb inlets and associated manholes; construction of bituminous paved road, concrete sidewalks & swale, curb & gutter, gravity walls, ADA Ramps, and residential walkways; relocation of utilities; pavement markings & traffic signs; signalization; installation of street lightings; installation of irrigation conduit systems; etc. Responsibilities in the Upgrade Sewage Pump Station No. 1 Project included quality control and inspection works for the construction of 12 ft. dia. and 19 ft. high receiving manhole for the pump station; construction of 36-inch diameter sanitary sewer pipes between the termination manhole, receiving manhole and the wet well of the pump station; installation of sluice gate within the receiving manhole to control sewage flow within the wet well; etc. Also responsible for the preparation of daily construction reports to be submitted to the Client.

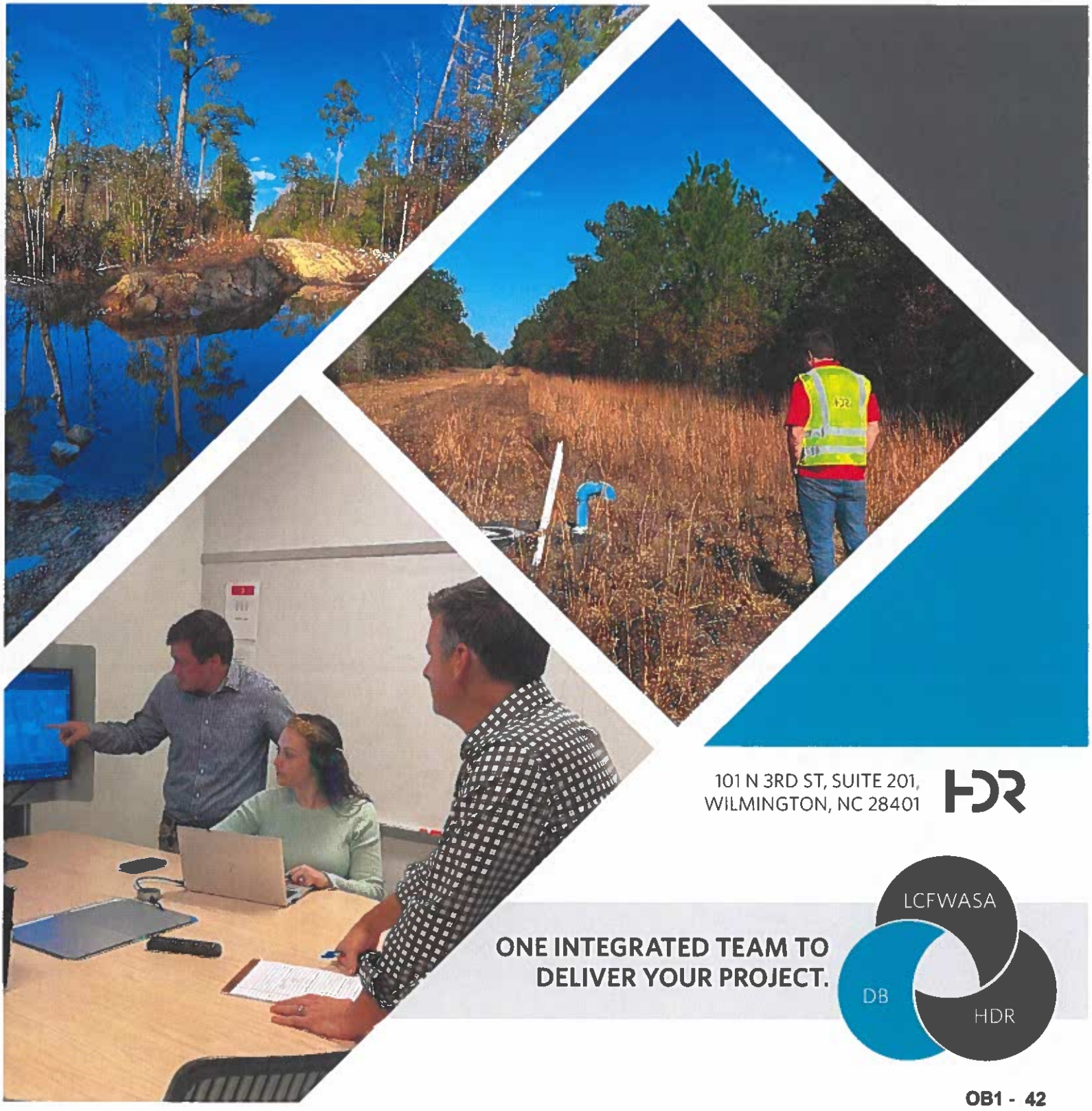
→ Roadway construction inspector for the Florida Department of Transport, Broward County, Florida, District IV, I – 75 Express Lanes – Segment C, Broward County. Responsible for the quality control and inspection of the construction of the median barrier wall, road embankment, cross drainage works, construction of MSE wall, bridge pier foundations, etc. The inspection works included density testing of soil & lime rock, inspection of rebar, inspection of formworks, concrete pouring, testing of concrete slump, air content and preparation of concrete cylinder during concrete pouting, preparation of daily works, etc.

STATEMENT OF QUALIFICATIONS FOR

LOWER CAPE FEAR WATER
AND SEWER AUTHORITY (LCFWASA)

OWNER'S ADVISOR FOR 54" RAW WATER TRANSMISSION MAIN DESIGN BUILD PROJECT

December 16, 2022



101 N 3RD ST, SUITE 201,
WILMINGTON, NC 28401

ONE INTEGRATED TEAM TO
DELIVER YOUR PROJECT.

December 16, 2022

Tim Holloman, Executive Director
Lower Cape Fear Water and Sewer Authority
1107 New Pointe Blvd, Suite 17
Leland, NC 28451
Director@lcfwasa.gov

RE: **Owner's Advisor for 54" Raw Water Transmission Main Design Build Project**

Dear Mr. Holloman and Selection Committee Members,

The Lower Cape Fear Water and Sewer Authority (LCFWASA) is initiating a Design-Build (DB) project for the new 54" Raw Water Transmission Main project and desires the services of Owner's Advisor (OA). The selected OA partner will serve as an extension of LCFWASA staff in a support role to help shape the effective and efficient delivery of this project. HDR Engineering, Inc. of the Carolinas (HDR) provides unmatched regional qualifications in OA roles and alternative delivery management. Our experience uniquely positions us to help you navigate the complexities of such a project, while delivering it in accordance with LCFWASA's vision and prior project planning. HDR has prepared the attached Statement of Qualifications (SOQ) to demonstrate our commitment and ability to accomplish the specific tasks required for a successful DB project.

HDR offers LCFWASA the following key benefits:

- **NORTH CAROLINA MUNICIPAL WATER DESIGN-BUILD EXPERIENCE:** HDR has local, regional, and national qualifications that will provide LCFWASA with a partner able to help implement your project delivery approach, maximize designer-builder performance, and minimize overall risk. HDR has served in almost every role regionally for municipal water DB projects: designer, design-build contractor, and owner's advisor. Our local team understands the marketplace and the risk profiles for DB project delivery, and includes individuals with expertise in contracting, risk management and procurement.
- **TECHNICAL EXPERTISE TO DELIVER:** We have selected a predominantly North Carolina based staff with experts in the various disciplines to successfully execute this project. This team will support LCFWASA's review milestones and provide comprehensive expertise covering the technical and administrative requirements for the project. These individuals deal exclusively with DB projects, conveyance system design, permitting, Federal and State funding including American Rescue Plan Act (ARPA), constructability issues, and OA services.
- **COLLABORATIVE COMMUNICATION:** HDR specializes in the DB OA role on large infrastructure projects. Our collaborative approach focuses on building consensus, developing technically sound solutions, and making timely decisions. While the technical skills and experience of our OA team are very important, equally important is how the OA team listens and works with your staff and the selected DB Team. Our collaborative approach is proven to LCFWASA through our Team's previous OA partnerships with Johnston County, City of Greensboro, Town of Cary, Union County, Winston-Salem City/County Utilities, and Charlotte Water.

HDR welcomes the opportunity to support LCFWASA in this endeavor and we appreciate your consideration of our qualifications to perform the OA role on this important project. If you have any questions or would like to request further information, please don't hesitate to contact your Project Manager, Jason Cook or Principal-in-Charge, Kip Kalisiak.

Sincerely,

HDR Engineering, Inc. of the Carolinas

Jason Cook, PE, PMP, *Project Manager*
M: 919.457.3711 E: jason.cook@hdrinc.com

Kip Kalisiak, PE, SVP, *Principal-in-Charge*
M: 919.407.9474 E: kip.kalisiak@hdrinc.com

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101 N 3rd St. Suite 201, Wilmington, NC 28401
T (910) 398-9020 F (910) 398-9021

Executive Summary

HDR has been successfully assisting clients in North Carolina since 1961. Operating locally as HDR Engineering, Inc. of the Carolinas, HDR began with a staff of 25 employees, initially only offering environmental services. HDR recognized the growing need to expand our disciplines to better serve our local clients and surrounding municipalities. **Over the years, our North Carolina resources have grown to over 450, providing a total spectrum of engineering, planning, architectural, utility management, and environmental services.**

HDR recognizes the challenges faced by many utilities in the United States — budgets are stretched, the infrastructure is aging, demand is increasing, and funding sources are uncertain. HDR helps clients find solutions to address these challenges and make the most of the available dollars. HDR professionals constantly evaluate management methods, design techniques, and delivery system models. Our work with public-private partnerships, program management, and DB delivery systems provides our clients flexibility in managing their projects and their budgets.

At HDR, we do things right to make great things possible.

Leader in North Carolina Design-Build

HDR has unmatched North Carolina experience that will provide LCFWASA a partner who will help you navigate all of the complexities of a design-build approach for the project, while minimizing your risk. HDR has served in almost every role regionally for DB projects; designer, DB contractor and OA. Our team understands the marketplace and the risk profiles for DB delivery, and includes individuals with expertise in contracting and procurement to maximize design-builder performance while minimizing risk. **HDR has been focused on providing value-added leadership to help our water and wastewater clients successfully execute design-build projects.**

HDR provides LCFWASA a value-added approach:

- Practical experience with DB
- A systematic and collaborative approach to guide the project through completion
- Management tools and contract management strategies for risk avoidance and mitigation
- Understanding of the marketplace for alternative delivery projects
- Expertise in DB contracting and procurement to maximize DB Team performance

EXPERIENCE MATTERS

> "In over a decade of involvement in the Yadkin Regional Water Supply Program, HDR has provided continuity in senior management engagement, exceptional technical personnel appropriate for each stage of the project, and an unwavering commitment to the best interests of Union County. HDR has consistently demonstrated their ability to be flexible in their approach to the project. HDR manages personnel to ensure milestones and desired outcomes are met within established budgets while navigating complex challenges throughout the project."

John Shutak, PE, Project Manager, Union County

Yadkin Regional Water Supply Program - Raw Water Infrastructure Progressive Design-Build

WHY SELECT HDR?

PROVEN, COLLABORATIVE APPROACH TO HELP DELIVER DESIGN-BUILD PROJECTS.
Provides innovative solutions created by input from the entire team including design, construction, operations, and LCFWASA leadership personnel.

UNMATCHED DESIGN-BUILD OWNER'S ADVISOR EXPERIENCE IN NC.
Leverages lessons learned in contract development, risk profile mitigation, procurement, GMP development and contract administration.

REGULATORY & FUNDING EXPERTISE.
Creates alignment of project milestones with regulatory and funding needs to avoid schedule delays and streamline the permitting process.

NC CONVEYANCE EXPERTISE.
Enables our team to collaboratively develop the best conveyance solutions with the selected DB Team based on lessons learned on similar projects in a coastal environment.

01 Project Understanding and Approach

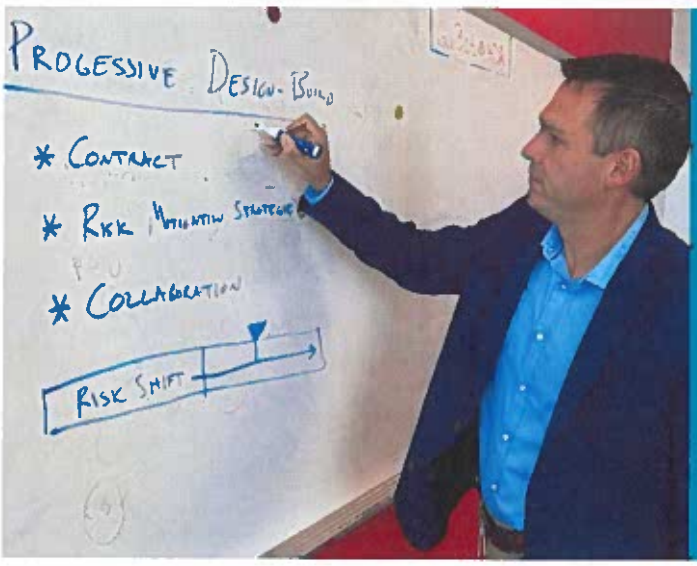
PROJECT UNDERSTANDING

The role of the OA is to assist with the project facilitation process and serve as an extension of your staff. The success of the OA role is dependent on the OA being very collaborative, experienced in North Carolina Progressive DB, and technically strong to help the team with any unique challenges. It is very important that the OA respects the selected DB Team's process for delivering the project.

Similar to other projects, HDR will work to integrate the entire project team.

OWNER ADVISOR OBJECTIVES

- **COLLABORATE** with LCFWASA and the DB Team to deliver a successful project.
- **PREPARE** a DB contract and procurement process that adheres to NC law and standard LCFWASA terms and conditions.
- **DEVELOP** initial budget and project cash-flow to match availability of funding.
- **CREATE** a project risk register to establish risk factors and mitigation measures.
- **EVALUATE** regulatory requirements and approvals required, and how delivery methods impact funding options.
- **ADMINISTER** a DB procurement process that is streamlined, fair, and generates healthy competition.
- **PROVIDE** project management, preconstruction and design phase support services necessary to support LCFWASA.
- **NEGOTIATE** a guaranteed maximum price (GMP) that is fair and acceptable.
- **DELIVER** construction administration services that result in a quality project.



BENEFITS OF THE HDR TEAM

- Our Principal-in-Charge, Kip Kalisiak, is a leader in North Carolina OA DB services.
- Our Project Manager, Jason Cook, understands Progressive Design-Build and water conveyance.
- Our consultants have 11 years of NC water Design-Build experience, bringing valuable lessons learned to LCFWASA.
- Our funding and regulatory specialists understand complex NC drinking water infrastructure projects.

PROJECT APPROACH

PLANNING

Establishing reliable communication lines in the planning phase is an important early activity of any project. Early planning activities include developing an initial budget with funding/cash-flow strategy, risk register, regulatory requirements, and project alternatives. HDR will organize and maintain communications to effectively inform and manage the flow of information related to project activity. Workshops are an integral part of our overall collaborative approach. In our team's experience, workshops have proven to be the most effective way to share critical information needed to make sound decisions and work together to establish consensus. Our proposed workshops are outlined within the schedule on Page 10.

DESIGN-BUILD CONTRACT

Developing a DB contract utilizing the Design-Build Institute of America (DBIA) and procurement process that meets LCFWASA's needs will be the initial top priority. HDR's thorough understanding in DB methods will provide insight into the standard contract issues that must be addressed at the beginning of the project, including your preferences, project administration, risk allocation, permitting, cost controls, schedules, and market volatility as well as many other items.

The DB contract form, risk allocation, and terms and conditions will impact the quantity and quality of the DB Teams that propose. Potential proposers will need to review the contract to determine what their risks will be before they can decide whether to submit a proposal. Some of the key risks to DB Teams will be: consequential damages, indemnification, bonding requirements, insurance requirements, liquidated damages, unforeseen conditions and termination clauses.

KEY DB CONTRACT CONSIDERATIONS:

- Start with the DBIA base documents
- Develop DB contract that adheres to NC law and standard LCFWASA terms and conditions
- Shared savings provision
- Unforeseen conditions
- Termination clauses
- "Open-book" cost requirements

PROJECT APPROACH TABLE OF CONTENTS

4 Planning
4 Design-Build Contract
5 Project Management, Preconstruction and Design Phase Support
6 Project Criteria Development
8 Funding Strategies
9 DB Procurement and Negotiations
10 Keeping the Project on Schedule and on Budget
12 Guaranteed Maximum Price Development and Independent Cost Estimating
- GMP Structure
14 Identifying Market-Based Pricing and Schedules
15 Risk Management
16 Construction Administration
16 Strategic Communications
17 Quality Assurance/Quality Control

TANGIBLE EXPERIENCE

HDR assisted Union County with successful negotiations of two progressive design-build GMPs with a total value of $260M. These projects are currently under construction with a team of Garney-Hazen constructing the raw water conveyance infrastructure and CDM Constructors-Crowder constructing the new WTP and finished water conveyance infrastructure.

EXPERIENCE MATTERS

"As our Owner's Advisor on the group of Stowe RWRRF related projects, HDR provided a multitude of services to Charlotte Water in an efficient and effective manner. The HDR team was instrumental in allowing our Charlotte Water team to make better and more informed decisions in the planning and design of a very complex new greenfield wastewater treatment facility.

- Ron Hargrove - Deputy Director, Charlotte Water

PROJECT MANAGEMENT, PRECONSTRUCTION AND DESIGN PHASE SUPPORT

Assisting LCFWASA with Project Administration, Preconstruction and Design tasks overlap several stages of the project. We have developed a list of key tasks for the project administration, preconstruction, and design element of this project and linked those key tasks to the different project stages. This has been included in the schedule on Page 10.

ADDITIONAL SPECIAL IDEAS, TECHNIQUES, & SUGGESTIONS

- Establish a collaborative team relationship with LCFWASA, OA, and DB Team. Make the project a win-win for everyone involved.
- Establish a clear communication matrix and a plan for timely conflict resolution.
- Utilize a proactive OA Cost Estimator to prevent GMP surprises and assist in GMP negotiations.
- Establish a cost estimating and GMP format that coincide with each other and the DB contract early in the preconstruction phase. Use this format throughout the project to avoid any misunderstandings on changes in costs.
- Utilize early work packages (or multi-step GMPs) when schedule is critical, but understand the associated risks.
- Clearly understand the trade-offs with risk shifts and additional cost.
- Request DB proposers to submit their approach to GMP development.
- Require major equipment, materials, or significant work intended to be subcontracted to be bid out with the 60% and final GMP cost estimates.
- OA and DB Team should track any scope deviations and identify cost and schedule impacts, as well as discuss these as soon as possible with LCFWASA leadership.

PROJECT CRITERIA DEVELOPMENT

One of the first OA priorities will be to develop LCFWASA's Project Criteria, which will be part of the Design-Builders Request for Proposals/Qualifications (RFP/Q). This Project Criteria will be critical for setting the requirements of the project and establishing the expectations of the selected Design-Builder. The Project Criteria will be part of the Design-Builder's Agreement with LCFWASA and will establish the scope of work and requirements for schedule, performance, and quality.

HDR will quickly work with LCFWASA in the first month of the project to clearly define all necessary Project Criteria.

! It is important that the OA develops just Project Criteria and does not advance into the design stage. Advancing beyond the Project Criteria is a common mistake for inexperienced OAs and it costs the Owner time and money in the Progressive Design-Build process.

The Project Criteria will establish the baseline Design-Builder's Scope of Service. An example of these Scope of Services includes the following:

1. DB will implement a robust safety program for all design and construction related activities.
2. DB will lead interactive design workshops.
3. DB will provide 30%, 60%, 90%, and 100% Design Drawings and Specifications.
4. DB will develop cost estimates at the 30% design stage and an update at 60% design stage and a firm cost with the GMP.
5. DB will complete all field data collection (surveying, geotechnical, environmental, etc.).
6. DB will work with OA to finalize all permitting activities and obtain permits required for project construction.
7. DB will provide project management, documentation, and progress reporting as required.
8. DB will ensure functional operation of existing 48-inch main during construction.
9. DB will provide QC of design and construction related activities.
10. DB will provide engineering services during construction to include RFIs, shop drawing reviews, contractor change order requests, factory witness equipment testing observation and reports, preparation of record drawings, and project management support.
11. DB will provide all construction management services for their work.
12. DB will complete all required testing and startup procedures.
13. DB will complete project close-out activities including final punch-lists, operations and maintenance manual production, training, project certifications, documentation for asset management, and warranty efforts.

Our vast experience with alternative delivery of large diameter pipeline projects will be leveraged so the Project Criteria clearly defines the needs of the project. Our thorough understanding and proficiency with all components for linear pipeline installations in urban, cross-country, and environmentally sensitive areas will allow us to fully support LCFWASA's efforts with design administration and review of design submittals and opinion of costs.

HDR performed a desktop analysis, as well as an in-person field review of the alignment. The figure on the following page illustrates the approximate corridor extents of the new 54-inch raw water transmission main and a few considerations that will need to be accounted for during design and construction.

APPROXIMATE CORRIDOR EXTENTS AND RELEVANT CONSIDERATIONS FOR THE NEW 54-INCH RAW WATER TRANSMISSION MAIN

1. High water table and potential for dewatering
2. Mt Misery Rd. crossing
3. Swamp crossing
4. Dogwood Rd. crossing
5. Parallel installation to access road for the Bluffs community
6. High voltage overhead powerlines
7. Pond embankment, above ground piping, overhead power
8. Cape Fear River crossing
9. Power easement crossing
10. HWY 421 crossing
11. Landfill and Industrial facilities
12. Significant NCDOT, utility, and business coordination

Although the proposed corridor is primarily located within an existing easement, there will be multiple stakeholders requiring various levels of coordination. A list of the anticipated stakeholders include, but are not limited, to the following:

- NCDOT
- NCDEQ
- Duke Power
- The Bluffs on the Cape Fear community
- Dominion Energy
- CSX Railroad
- Various business and utilities along Hwy 421
- Brunswick County
- Pender County
- Cape Fear Public Utility Authority

FUNDING STRATEGIES

HDR has significant experience with a variety of water infrastructure funding programs that can make water infrastructure more affordable for the utility's customers. Our experience will assist you in navigating the base federal requirements (e.g., 2 CFR Part 200 aka uniform guidance), but also how each agency implements those regulations. Understanding state funding programs is also critical as state requirements may differ from federal requirements as state agencies implement certain federal funding programs. Our team has extensive experience in water infrastructure funding programs including American Rescue Plan Act (ARPA), Community Development Block Grants, Building Resilient Infrastructure and Communities, Drinking Water State Revolving Fund (SRF), Clean Water SRF, Water Infrastructure Financing and Innovation Act, and North Carolina's water infrastructure programs. These represent federal grant programs, federal finance program, federal/state finance programs, and state programs, all of which have unique, sometimes overlapping procurement requirements and assisting clients meet those requirements.

Our team's expertise will guide LCFWASA prior to contracting, through procurement, and ensuring required contract provisions are understood and tracked through the completion of construction. Understanding federal requirements, and how they may conflict with state requirements, is critical at the beginning of the project. We have guided clients with understanding these requirements and provided potential solutions when conflicts arise with federal requirements. It is particularly important to understand these issues when an alternate delivery method such as design-build is contemplated. For example, HDR has assisted the Town of Clayton (DB and DBB) and the Town of Wilkesboro (CMAR) in **navigating conflicts between state and federal procurement requirements associated with ARPA and alternative delivery methods.**

HDR has the experience and expertise to guide LCFWASA through the funding process including the engineering report, environmental information document, and final plans and specifications approval processes. For many agencies these approval steps are built around the traditional design-bid-build procurement method. Understanding how to adjust that process for an alternate procurement method is important to keeping a project on schedule, which is critical when funding includes ARPA, of which funds must be expended and drawn down from U.S. Treasury by December 31, 2026 (the state will require an earlier deadline).

Most federal water infrastructure funding programs will include specific requirements such as Davis-Bacon Act (prevailing wage requirements), American Iron and Steel, Build America Buy America Act, and other federal cross cutting requirements. HDR has experience reviewing contract provisions for federal requirements and administering construction projects that include these requirements.

Based on LCFWASA's secured ARPA funding of $23.5M, we can adjust the level of effort as the project progresses. ARPA and other federal funding programs that currently have significant funding available present a unique opportunity to make water infrastructure more affordable and resilient. HDR's expertise and experience will allow us to assist LCFWASA in taking advantage of this opportunity from the beginning through the successful completion of construction of the raw water line.

FUNDING ASSISTANCE will be led by Kim Colson who specializes in bridging regulatory requirements, water infrastructure management, and funding for infrastructure with a holistic approach.

His professional experience spans three decades of service with the North Carolina Department of Environmental Quality (NCDEQ). When he retired from NCDEQ, Kim was Director of the Division of Water Infrastructure managing the Clean Water State Revolving Fund, Drinking Water State Revolving Fund, State Community Development Block Grant – Infrastructure, and various state water infrastructure programs. At that time, he was also Chair of the State Water Infrastructure Authority and President of the Council of Infrastructure Financing Authorities

Kim will bring a unique perspective of working directly with many regulatory programs and extensive knowledge of infrastructure funding including ARPA and financial issues.

While at DEQ, Kim routinely developed partnerships with other entities such as the Department of State Treasurer's Local Government Finance Division, UNC Environmental Finance Center, Councils of Government, Rural Water Association, EPA, and funding programs across the country.

TANGLIBLE EXPERIENCE

HDR has assisted the Town of Clayton (DB and DBB) and the Town of Wilkesboro (CMAR) in navigating conflicts between state and federal procurement requirements associated with ARPA and alternative delivery methods.

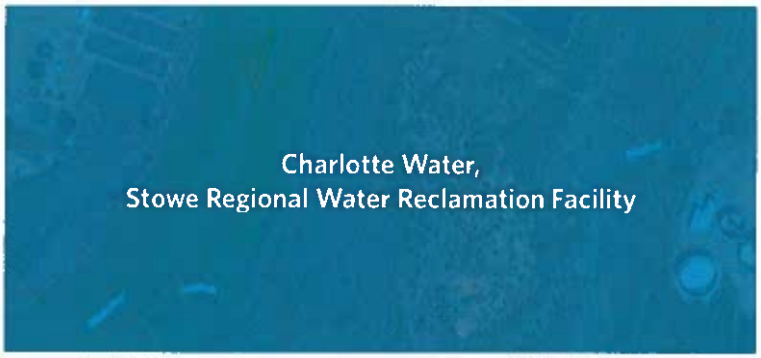
Town of Wilkesboro Cub Creek WWTP Expansion (CMAR)

DESIGN-BUILD PROCUREMENT & NEGOTIATIONS

One of the most important ways to manage project risk is by selecting a DB Team who is best suited to perform the work and understands a collaborative approach. To determine the best-suited DB Team, HDR will assist LCFWASA with planning a procurement process that is focused on finding the right team for the project. We will assist LCFWASA through the process of developing an RFQ that meets North Carolina laws and the LCFWASA procurement requirements. We have demonstrated experience working with North Carolina Owners to develop these documents and successfully negotiate contract terms with DB Teams. This provides you with the experience necessary to help create the best and most efficient procurement process for LCFWASA.

TANGIBLE EXPERIENCE

HDR has demonstrated experience working with North Carolina Owners to develop procurement documents and successfully negotiate contract terms with DB Teams.



Charlotte Water,
Stowe Regional Water Reclamation Facility

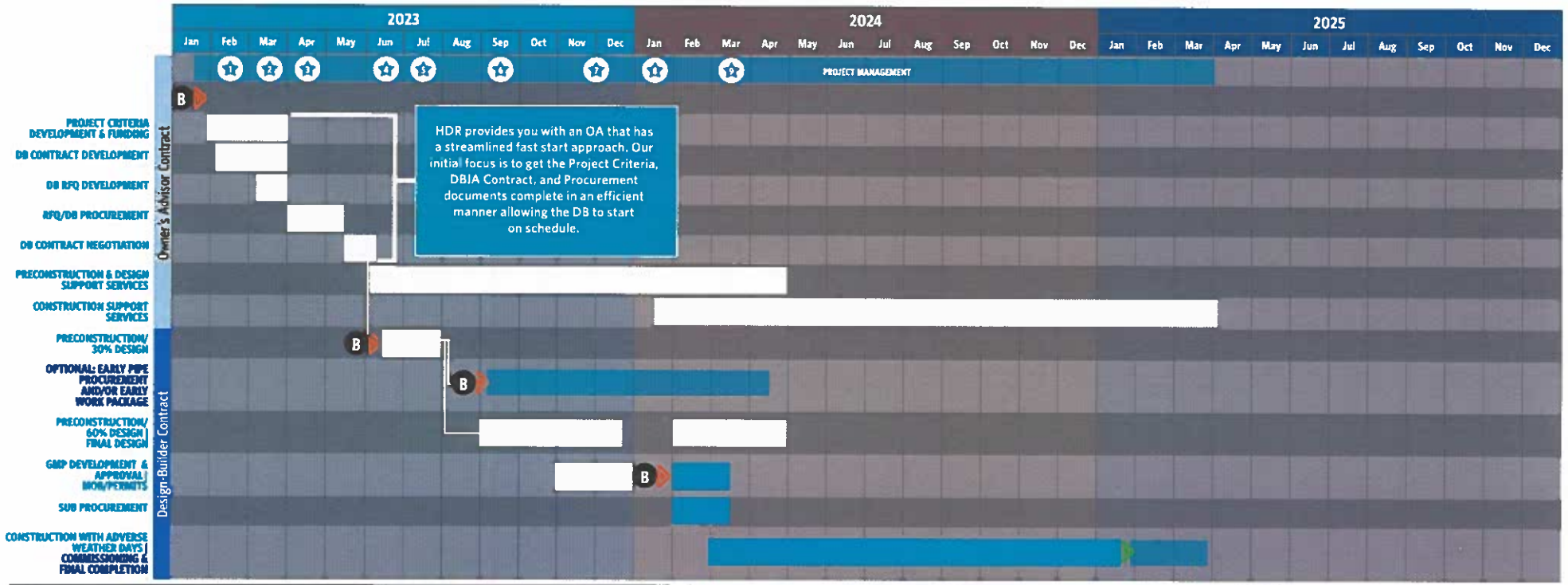
Union County,
Yadkin Regional Raw Water Infrastructure

Union County,
Yadkin Regional Finished Water Infrastructure

LCFWASA | Section 2

KEEPING THE PROJECT ON SCHEDULE AND ON BUDGET

Based on our experience and the current market conditions, we have presented the most likely schedule. Our approach to keeping the project on schedule and budget centers around a collaborative approach with LCFWASA, HDR, and the Design-Builder. Important elements of the collaborative approach include quickly negotiating a fair contract, early definition of GMP requirements, agreement on key project risk elements and mitigation measures, independent cost estimating checks, productive GMP negotiations, and consensus on QA/QC responsibilities. Our approach to these items is outlined on the following pages.



B Board Approval

Notice to Proceed

Substantial Completion

Key Workshops/Key Meetings Prior (Pre-Construction)

Key Workshops & Meetings	Expected Outcomes
W1	*Define project team roles, establish internal communications and decision making strategy; determine initial schedule and budget. Review technical alternatives. Review ARPA requirements.*
W2	*Review draft DB Contract, RFQ, and Project Criteria document. Establish initial risk register.*
W3	*Finalize DB Contract, RFQ, and Project Criteria document. Discuss pre-RFQ meeting. Discuss updated risk register, budget, and schedule.*
W4	*Form collaborative partnership and negotiate contract terms with selected DB Team.*
W5	*Preconstruction kickoff. Form integrated and collaborative team. Discuss communications. Review Project Criteria. Discuss DB Team ideas including early procurement or work packages. Review updated risk register, budget, and schedule.*
W6	*Review 30% design submittal, cost estimate, schedule, and risk register. Complete Value Engineering session. Determine if DB is moving forward with early pipe procurement or early work packages.*
W7	*Review 60% design submittal, cost estimate, schedule, and risk register.*
W8	*Final GMP negotiation.*
W9	*Construction kickoff. Review updated risk register, budget, and schedule.*

GUARANTEED MAXIMUM PRICE (GMP) DEVELOPMENT AND INDEPENDENT COST ESTIMATING

The GMP proposal marks the transition from pre-construction to construction phase and requires intentional pre-planning and attention. Proper planning and review throughout the pre-construction phase will prevent any surprises at the time of the GMP offering. Early involvement by our Principal-in-Charge, Kip Kalisiak, and our Independent Cost Estimator, Pete Bredehoeft, will provide cost tracking and accounting protocols that are aligned to allow for transparent cost comparison at the time of the GMP proposal and throughout project development. Kip will confirm that the PDB procurement strategy, bid packaging, and formatting are aligned with your goals and conducive to continuous cost trending/tracking, estimate analysis, and reconciliation efforts.

WE RECOMMEND THE FOLLOWING TACTICS TO ENABLE ACCURATE GMP DEVELOPMENT AND EVALUATION:

- Request proposers submit their approach to GMP development with their proposal. Identify and discuss approaches with selected team prior to finalizing selection of DB Team
- State in RFQ any limitations or expectations regarding work to be self-performed by the DB Team
- Require major equipment, materials, or significant work intended to be subcontracted to be bid out with 60% and final GMP cost estimates
- Establish cost estimate software, formatting, work breakdown structure, and taxonomy early in pre-construction phase. Accurate estimate reconciliation can be best accomplished if estimated formats and protocol are jointly established and used
- Reconcile design-build estimate with independent cost estimate at each milestone submission
- OA and DB Team track any scope deviations and identify cost and schedule impact with each deviation

GMP STRUCTURE

One important lesson HDR has learned from other OA roles is to clearly define the GMP structure and requirements with the DB Team early in the project. This will avoid any misunderstandings and schedule delays associated with the GMP deliverable. Below we have drafted GMP requirements that we feel are appropriate for your project.

LCFWASA GMP REQUIREMENTS

Section 1 - Guaranteed Maximum Price (GMP)

- GMP Cost Summary
- GMP Backup Information
- Subcontractor Bids
- Vendor/Equipment Bids
- Project Contingency
- General Conditions Cost Details
- Subcontractor Markup
- Integrated Team Organizational Chart
- Final Engineering Design and Engineering Services during Construction Scope and Fee Proposals
- Allowance Item List and Backup
- Schedule of Alternate Prices
- Schedule of Unit Prices
- Statement of Additional Services
- Savings Provision
- Time Limit of Acceptance of the Proposal
- Owner's Permit List

Section 2 - Contract Documents as Basis for GMP

- 60% Plans
- Specifications Manual
- Geotechnical and SUE Data

Section 3 - Assumptions and Clarifications

Section 4 – Project Schedule

- Project Schedule with Substantial Completion Date

INDEPENDENT COST ESTIMATING

From recent experience on five design-build projects, our independent cost estimator, Pete Bredehoeft, understands the importance of early involvement to avoid surprises during the GMP Process.

> "I will approach the independent cost review much as I do all estimates: with thorough and well-thought-out research and understanding of the scope. My main involvement in validating the GMP will be to consider industry standards and how those have been applied by the DB Team."

Pete Bredehoeft, CEP | Sr. Cost Estimator

Pete is an expert in cost estimating processes and procedures. He is a specialist in estimating location or area adjustment factors and in escalation development and commodity trends. He is a Certified Estimating Professional International (CEP) from AACE International, and has been awarded the Fellow and TCM Framework awards at AACE International. He also serves on the AACE International Technical Board as the Director of Recommended Practices.

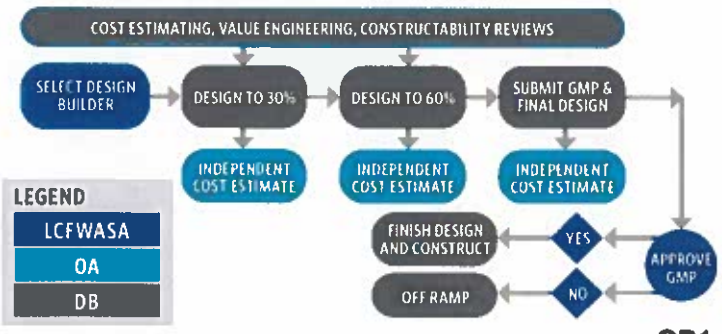
Pete has extensive cost estimating experience on large water capital improvement programs. He is the administrator of the Estimating Benchmarking Tool that tracks historical estimates, actuals, unit prices, ratios and metrics, and professional services. Pete has also implemented the GMP validation process on five recent design-build projects.

Pete is proficient in a variety of leading construction industry software programs, including Timeberline, Revit, Assemble, Eos E2, Eos Advisor, Success by U.S. Cost, MC2, MCAES, MFW, PACES, Composer Gold. Primavera, Microsoft Project and SureTrak.

PROACTIVE INDEPENDENT COST ESTIMATOR INVOLVEMENT PREVENTS GMP SURPRISES

1. **Review scope of work and basis of the estimate to understand total scope and approach**
2. **Perform independent quantity takeoff and review with the DB Team**
3. **Use the same labor and equipment rates**
4. **Discuss productivity rates and construction methods**
5. **Review markup structure, subcontractors, mobilization/ demobilization, sales tax, home office overhead, general conditions, profit, bonds, and insurance**
6. **Produce independent cost estimates**
7. **Review and compare prices with the Design-Builder**
8. **Review escalation rates**
9. **Review market volatility**
10. **Review non-construction costs/fees**
11. **Track change orders during construction review**

The involvement of a cost estimator for Design-Build is more involved than the typical 30%, 60%, 90% Opinion of Probable Construction Cost.



IDENTIFYING MARKET-BASED PRICING AND SCHEDULES

One key component to obtaining LCFWASA leadership buy-in to a negotiated GMP is to provide assurance of market-based pricing. From prior experience, we have learned a few strategies to assist with this: GMP contracts can be broken down in to four main components: General Conditions (GCs), Cost of the Work, Contingency and Owner Allowance, and Overhead and Profit. Some of HDR's key lessons learned on each component are below:

HDR'S KEY LESSONS LEARNED FROM GMP CONTRACTS

GMP COMPONENT	HDR'S LESSONS LEARNED, SUCCESSFULLY APPLIED
General Conditions Costs required for resources to meet the general conditions terms of the contract.	• **Compare metrics to other HDR Programs** using our large database of CM labor and GCs required for similar contracts. • Require staffing projections to be included with proposals and evaluated as part of the cost of the work. • Negotiate early in GMP development to avoid delays once firm pricing comes in.
Cost of the Work Cost of the work is generally bid in an open-book manner, with transparency on pricing and selection of subcontractors. The main issue in determining market-based pricing is on 'self-performance' work. In the past, we have required contractors who want to self-perform to submit bids directly to us at the same time as other bidders. Recently, this approach has proven unsuccessful as subcontractors are leery to bid against the contractor.	**Agree in advance (with the DB Team) what might be suitable for self-performed work and negotiate these packages against independent estimates on an open-book basis.** Should these negotiations prove unsuccessful, the Design-Builder will be required to bid these packages to the open market (without their participation).
Contingency and Owner Allowance Contingency is negotiated and is applicable to cover design issues (in a DB contract), quality control issues, rework, missed scope, and other areas under the contractor's control. Our experience tells us what an appropriate contingency amount is. Owner allowance is for things under the Owner's control, namely requested design changes and unforeseen conditions during construction.	**Determine upfront what "bucket" changes should come from** – the Design-Builder will push for money to come from owner allowance and the Owner will need seasoned negotiators to help guide the process.
Overhead and Profit Design-Builders desire to recover a reasonable overhead and profit. Schedule also plays a key component in pricing, and schedule (like GMP) will also be negotiated as design develops. There are a few keys to developing a workable and achievable schedule. Previously, the industry norm was to make Design-Builders work like engineers – recover overhead through a multiplier against their labor and then apply a flat profit for the work. However, contractors are not engineers and their pricing scheme is different.	• **Require the Design-Builder to include with their proposal a flat mark-up on verifiable costs** – labor + fringe, materials and equipment, and subcontractors. This mark-up should be the sole mechanism for recovery of overhead and profit. • **Plan for commissioning.** • **Consider early procurement and start to reduce overall construction duration** – items such as pipe procurement could be considered, but you need to maintain the ability to take an off-ramp should GMP pricing not come in as expected.

HDR, led by Kip Kalisiak, has negotiated more GMP North Carolina water contracts than any other firm.

HDR's experience in negotiating GMPs provides LCFWASA an Owner's Advisor that has an established, efficient, and collaborative process.

Stowe Regional Water Resource Recovery Facility

Yadkin Regional Water Supply Project (YRWSP) - Water Treatment and Finished Water Infrastructure

GUARANTEED MAXIMUM PRICE (GMP) SUBMISSION

REVISION 1 - JUNE 12, 2020

UNION COUNTY

GREENSBORO

RISK MANAGEMENT

Our approach to risk management is proactive identification, assessment, mitigation and communication. We have already started this process for your project with the following risk register (a portion of the register is provided below), which we have reduced to the top cost and schedule risks presented in a simplified and visual communication format.

LCFWASA 54-inch Raw Water Transmission Main

Preliminary Risk Register

Risk ID Number	Risk	Potential Consequence	Risk consequence: Risk likelihood	Financial	Project Schedule	Public Perception	Regulatory / Legal	Health and Safety	Operating & Maintenance	Environmental / Environmental	Risk Score (0-25)	Control / Mitigation Measures	Responsible Party or Risk Owner
1	**Contractual / Financial**												
1.1	Cost of work escalates due to early GMP negotiation	DB prices additional contingency due to level of design completed at 60% (more risk)	5	4	3	1	1	1	1	1	20	Selecting DB with a designer that has experience designing to 60% for GMP, determining what risks should be carried by Owner and risks carried by DB	Owner
1.2	Phase 1 contract negotiations take longer than anticipated	Delay in project schedule	4	2	4	1	1	1	1	1	16	Selecting the DB that can be a trusted partner, Owner shares certain risks, provide contract as soon as possible	All
1.3	Phase 2 60% GMP contract negotiations take longer than anticipated	Delay in starting construction	4	2	4	1	1	1	1	1	16	Selecting the DB that can be a trusted partner, Owner shares certain risks, profit sharing contingency	All
1.4	Noncompliance with ARPA funding requirements	ARPA funding is taken away	1	2	3	2	5	1	1	1	5	Leverage resources of team members with all funding sources to ensure all requirements are fulfilled	All
1.5	NC Gen. Stat. 143-128.1B design build procurement process	Bid protests, LCFWASA does not follow it correctly	1	2	3	3	4	1	1	1	4	Legal review of NC General Statutes	Owner
1.6	Cost of work escalates, lack of Tier 1 subcontractor quotes	Project exceeds budget	4	5	2	4	1	1	1	1	20	Leverage resources of team members with all funding sources to ensure all requirements are fulfilled, selecting DB that has ability to self-perform major work packages	All
2	**Planning and Design**												
2.1	Permits are received late and/or are denied	Delayed completion schedule; additional design work to generate alternatives	2	3	5	2	3	2	1	2	10	Early engagement of all applicable permitting agencies, leveraging relationships; develop comprehensive permitting plan with LCFWASA, define and monitor permit milestones in project schedule; diligent	All
2.2	Geotechnical conditions are not fully characterized in time to meet design schedule	Delay in project schedule	3	3	5	1	2	1	1	2	15	Conduct additional Geotech investigations as soon as possible, make sure DB has detailed schedule and plans to accelerate this work	All
2.3	Unanticipated site conditions encountered along pipeline route	Delaying startup of pipeline	4	2	5	1	3	1	1	1	20	Complete thorough investigation of pipeline route, identify potential areas where test pitting and/or borings are needed	All
2.4	Design Criteria Compliance Review / Changes	Increase to project budget, potential impact to schedule due to additional design	4	3	3	1	2	1	1	1	12	Early development of compliance review by DB, identify all scope gaps prior to establishing GMP. Include key stakeholders early in the design	Owner
2.5	Limited time to complete 60% design to establish GMP	Designer may have difficulty meeting schedule	3	1	4	1	1	1	1	1	12	DB will need to carefully review schedule, determine how to develop early work packages	DB Team
2.6	Design Review Delays	Delay in starting construction	3	2	3	1	1	1	1	1	9	Establishing clear expectations with all members of the Owner's team and Owner's Advisor on review times and meetings necessary to complete reviews and managing those expectations	Owner
2.7	Integration of design with early procurement or work packages	Additional design effort and delays in construction	2	3	3	1	1	2	1	1	8	Constructability reviews and effective communication with construction team during design.	DB Team
2.8	Scope creep	Increase in project budget, potential impact to schedule due to additional design	4	3	2	1	1	1	1	1	12	Engage Owner early and often at 30% and 60% design	All
3	**Construction and Commissioning**												
3.1	Health and safety of construction workers, the public and visitors	Injury or damage; potential fine or violations; schedule delays	2	2	3	2	3	5	1	1	10	Implement comprehensive safety program customized for each work activity; worker and subcontractor qualification and training programs	DB Team
3.2	Inadequate craftworker resources to comply with Project Schedule	Schedule delays; increased costs	3	3	5	3	2	3	1	2	15	DB must have resources to self-performed work. Also, must have longstanding relationships with local subcontractors to ensure project priority; use resource-loaded schedule and pull planning to forecast needs	DB Team
3.3	Key materials or equipment not delivered in time to accommodate schedule	Schedule delays; increased costs	2	3	5	3	2	2	1	2	10	Leverage resources of team members with equipment and material suppliers to ensure project priority; include procurement and approval activities in schedule; confirm "buy-in" of submittal and delivery dates from all parties	DB Team
3.4	Community disruption due to construction work	Negative public perception of the project	3	1	2	4	1	2	1	1	12	Early community engagement and outreach with messaging collaboratively developed with Owner	DB Team
3.5	Delays and impacts due to severe weather	Project delays, safety	3	3	4	4	3	5	4	1	15	Early development of severe weather emergency plans	All
3.6	Difficult and/or risky construction	Project delays, safety, GMP is higher than anticipated (more risk)	4	5	3	2	2	3	1	3	20	Identify challenging construction work early and evaluate how to improve design to mitigate or eliminate risks	DB Team

We typically produce an executive summary of the risk register to help leadership understand and make decisions based on risks of greatest potential consequence.

RISK LEVEL
HIGH
MODERATE
LOW

COST RISKS

- GMP development schedule is aggressive. DB will price additional risk with greater contingency for a design that is 60% or less.
- Cost of work escalations due to demand in region for craftworkers and other large W/WW projects.
- DB has difficulty receiving competitive Tier 1 Subcontractor quotes.
- Unanticipated site conditions encountered.
- Design-Builder's design compliance revview may have additional requirements.

SCHEDULE RISKS

- DB Part 1 contract negotiations take longer than one month. Delaying NTP.
- 60% Design Schedule is very aggressive, not allowing much time for 30% design review. Designer may have trouble delivering plans that DB can adequately price for GMP.
- Aggressive construction schedule requires early design packages.
- Key materials and equipment not delivered in time to meet schedule.
- Permits (DEQ, DOT, etc.) are received late or denied.
- Unanticipated site conditions encountered.
- Part 2 GMP contract negotiations take longer than one month.
- Design criteria changes.
- Requirements imposed by funding sources are not fulfilled.
- Additional weather delays are greater than anticipated.

CONSTRUCTION ADMINISTRATION

The quality management system will be defined in the Project Quality Management Plan (QMP) and included in a Construction Management Plan (CMP). The construction industry is cyclical, and during the recession that began in 2008, construction work slowed, resulting in highly-qualified craft people leaving the industry. Now the economy has greatly improved, material escalation has risen to unforeseen levels, and contractors report trouble hiring qualified workers. As an Owner, you can expect to see more apprentices and marginal workers on your projects, which can adversely impact quality. To mitigate this, we recommend implementation of a strong Quality Assurance (QA) program to complement the Design-Builder's Quality Control (QC).

HDR offers a deep, local pool of qualified Construction Administration staff, allowing us to respond to changing program needs quickly and efficiently.

Our construction professionals understand administering DB contracts, thus avoiding any learning curve associated with a new delivery model.

STRATEGIC COMMUNICATION

HDR's approach to strategic communications is designed to **carefully select the right tools** to collect, understand and **share meaningful information.**

HDR's full-service Strategic Communications program will **work to help you mitigate your social and political risks** in a manner that drives informed support for this project. Our strategic communications team will leverage traditional and virtual tools such as web, video and social networking to maximize communication reach and impact. We are experienced with wide-scale media campaigns that include targeted digital, print, television and radio material. We will help you build and implement a communications plan that is appropriate for this project.

Sabrina Colon, our Strategic Communications Lead, is familiar through her role leading Communications and Outreach for the Yadkin Water Supply Program and Stowe Regional Programs.

Who We Are

A full-service Public Relations Firm and Creative Studio embedded within HDR.

HDR's Strategic Communications team pushes open the doors to what's possible for your clients. Implementing a strategic communications strategy at project inception reduces social and political risk, enhances community acceptance, and illuminates multiple paths toward achieving your goals. We operate a national full-service PR firm and creative studio within HDR, with experts skilled in the development and delivery of contemporary services that demonstrate your expertise in the industry. Few engineering firms offer this differentiator. Our practice includes nearly 100 of the best communications strategists, writers, designers and facilitators in the industry, available to showcase the important work you do.

Our Services:

- Community Relations
- Facilitation & Mediation
- Multi-lingual Accessibility
- Online Meetings & Webinars
- Communications Strategy Advising
- Social Media
- Content Journalism
- Internal Communication
- Rates Communication Online
- Mapping & Comment Mapping
- Crisis Communications
- Survey Development
- Town Halls
- Target Market/Data Analysis
- Visual Communications
- Digital Engagement
- Branding
- Media Relations & Training
- Videography

QUALITY ASSURANCE/QUALITY CONTROL

Our quality management will not only be focused on the quality of the service provided or product produced, but also on the means to achieve it. We will use planning, process controls, and verification to implement appropriate checks and balances to achieve quality. **QA and QC processes are different for each phase of the Project** (see table below). The responsibilities for these processes will be captured in a Quality Management Plan (QMP). Regardless of the Project phase, the party completing each portion of the work is responsible for the quality control of that portion.

QUALITY CONTROL (FULFILLING REQUIREMENTS)			
Phase	Design	Construction	Commissioning
Responsible Party	Design-Builder's Engineer	Design-Builder	Design-Builder
QC Procedures Defined by	Design Quality Control Plan	Construction Quality Control Plan	Commissioning Plan
Example Procedures	• Independent peer review of deliverables • Calculation checks • BIM clash detection • Inter-discipline reviews • Constructability reviews • QC comments resolved	• Implementation of continuous phased inspection • Special inspections • Material receipt inspection and proper handling • Materials testing • Documentation and resolution of non-conformance items	• Individual test procedures • Manufacturer's certifications • Conduct and verify all tests • Equipment tests • System tests • Manufacturer training • Provide certificate to operate

QUALITY ASSURANCE (PROVIDING CONFIDENCE)			
Phase	Design	Construction	Commissioning
Responsible Party	LCFWASA/HDR	LCFWASA/HDR	LCFWASA/HDR
QA Procedures Defined by	Quality Management Plan	Quality Management Plan	Quality Management Plan
Example Procedures	• Review of engineer's quality control plan • Design coordination meetings • QC audits • Review of deliverables for consistency with LCFWASA requirements • Periodic calculation checks • Constructability reviews	• Review of Design-Builder's QCP • Administer construction progress meetings • QC audits (shop drawings, ARPA tracking, etc.) • Special/periodic inspections • Periodic testing using independent materials and testing agency • Verification of non-conformance resolution • Issue and respond to requests for information and/or change proposal requests • Review change orders	• Operations training • Monitor and track performance guarantees • Confirm as-built record drawings • Track warranty claims • Confirm ARPA compliance • Issue substantial completion • Review request for final payment

02 Relevant Firm Experience with Design-Build Projects

The following table includes a list of projects that demonstrates HDR's range of experience in the region with similar projects. HDR's experience will provide LCFWASA with a partner that has the depth of experience to support navigating your project and setting you up for success. Projects with the 💧 are highlighted on the following pages.

CLIENT	PROJECT	STATE	HDR'S ROLE	DELIVERY MOEDL	PROJECT COST	STATUS	D-B TEAM (OR CONTRACTOR)	DRINKING WATER TRANSMISSION AND/OR STORAGE	WASTEWATER TRANSMISSION	PIPELINE DIAMETER(S)	DRINKING WATER TREATMENT	WASTEWATER TREATMENT
Union County	Yadkin Regional Raw Water Infrastructure	NC	OA	PDB	$149M	Nearing Completion	Garney-Hazen	X		42"-54"	X	
Union County	Yadkin Regional Finished Water Infrastructure	NC	OA	PDB	$111M	Nearing Completion	CDM Smith	X		36"	X	X
Charlotte Water	Mount Holly PS & FM & Stowe HW&IPS	NC	OA	PDB	$149M	Under Construction	Haskell-B&V		X	Dual 21" & Dual 42"		X
Charlotte Water	Stowe Regional WRRF	NC	OA	PDB	$305M	Starting Construction	Garney/Crowder JV-Hazen					X
Town of Cary	Kildaire Farm Road Water Main Replacement	NC	OA	PDB	$15M	GMP	Pipeline Utilities -Kimley Horn	X		16"-20"		
City of Greensboro	Liberty Elevated Water Tank	NC	OA	PDB	$10M	Under Construction	Landmark-B&V	X				
Johnston County	T.G. Broome WTP Expansion	NC	OA	PDB	$65M	In Design	TA Loving- Hazen/ McKim & Creed				X	
Town of Clayton	Sam's Branch WRF & Associated Infrastructure	NC	OA	FP DB & DBB	$220M	Starting Construction	Multiple		X	Various		X
Charlotte Water	Belmont Pump Station & Forcemain	NC	OA	DBB	$45M	In Design	TBD		X	Dual 20"		
Charlotte Water	Upper McAlpine Creek Sanitary Sewer Interceptor	NC	Engineer	PDB	$16M	Nearing Completion	Crowder-HDR		X	30"		
Union County	County-Wide Transmission Main	NC	Engineer	DBB	$20M	Complete	State Utility	X		12"-42"		
Union County	Transmission Main from WTP to Ground Storage Tanks	NC	Engineer	DBB	$15M	Complete	McClam	X		42"		
Town of Cary	Raw Water Transmission	NC	Engineer	DBB	$16M	Complete	Garney	X		42"-54"		
City of Chesapeake	Lake Gaston Phase II Transmission Main	VA	Engineer	DBB	$25M	Complete	Garney-Bridgeman Civil	X		36"		
Charlotte Water	Stevens Creek Wastewater PS & FM	NC	Engineer	PDB	$15M	Complete	Crowder-HDR		X	20"		
York County	Highway 21 Forcemain	SC	Engineer	PDB	$25M	Under Construction	State Utility-HDR		X	30"		
Charlotte Water	Clarke Creek PS & FM	NC	Engineer	PDB	$40M	Under Construction	State Utility-HDR		X	30"		
Raleigh Water	Durant Road Water Main	NC	Engineer	DBB	$23M	In Design	TBD	X		36"		
City of Greensboro	Megasite Water and Wastewater Conveyance	NC	Engineer	DBB	$56M	Under Construction	Phase 1&2 - Garney Phase 3 - JR Lynch Lift Station - State Utilities	X	X	16"		

KEY
- PM - Program Manager
- CM - Construction Manager
- OA - Owner's Advisor
- PDB - Progressive Design-Build
- TBD - To Be Determined

Complete · Nearing Completion · Under Construction · Starting Construction · In Design · GMP

Note: For the projects not completed, this value represents an estimate at the time of this SOQ

References and Descriptions of Similar Owner's Advisor Projects

PDB

Yadkin Regional Raw Water Infrastructure, Owner's Advisor

Union County, NC

HDR is providing program management and OA services for the design and construction of an Intake and Pump Station on Lake Tillery, in Stanly County, NC, and a 30-mile raw water transmission main through Stanly County, into Union County, terminating at the Yadkin Water Treatment Plant in Unionville, NC. The majority of the steel transmission pipeline is a 42-inch force pipe, and beyond the new hydraulic control structure, it is a 54-inch gravity line.

With HDR's help, Union County initiated and executed an agreement with their partner, the Town of Norwood, to be able to construct this project on land outside of the County's jurisdiction. HDR provided consulting services beginning by organizing and leading owner workshops to define the program, overall schedule, delivery method, roles and responsibilities of project participants, pipeline routing, and other up-front activities.

As their Program Manager, we guided Union County in the review and selection of the progressive design-build delivery method, led the development of the Raw Water Infrastructure Design-Build RFQ, led the team in proposing a reasonable acquisition process for the Board to adopt to acquire land along the pipeline, and helped the County prepare to obtain concurrence from their Board and the necessary authorities to position the County for moving into final design and construction of this new water supply infrastructure.

HDR led the team through the negotiation of the Guaranteed Maximum Price submittal and Phase II progressive Design-Build.

PROJECT DETAILS

Owner's Representative:
John Shutak, Project Manager
704.283.3651
john.shutak@unioncountync.gov
500 N. Main St., Monroe, NC 2811

Project Team Members:

Kip Kalisiak	Vickie Miller
Jason Cook	Paul Bearden
Matt Shultz	Sabrina Colón
Tyler Leben	
David McPherson	

PDB

Yadkin Regional Finished Water Infrastructure, Owner's Advisor

Union County, NC

HDR is providing program management and OA services for the design and construction of a Water Treatment Plant (WTP) and distribution pipeline to support Union County's Yadkin River Basin customers. The 12mgd WTP leads to a 36-inch ductile iron pipeline, connecting into the County's existing water distribution infrastructure.

HDR guided Union County in the review and selection of the progressive design-build delivery method and led the development of the Design-Build RFQ for the project. HDR helped the County select and secure a WTP site, assess and develop the overall initial pipeline route, and to determine a reasonable acquisition process for the Board to adopt to acquire land along the pipeline.

HDR led the team through the negotiation of the GMP submittal and Phase II progressive Design-Build contract amendment. HDR continues to work with the County and the D-B team to provide Construction Administration services, including on-site construction monitoring, construction materials testing, commissioning and startup, regular evaluation and maintenance of the program wide construction contracts and schedules, and ongoing website.

PROJECT DETAILS

Owner's Representative:
John Shutak, Project Manager
704.283.3651
john.shutak@unioncountync.gov
500 N. Main St., Monroe, NC 2811

Project Team Members:

Kip Kalisiak	Tyler Leben	Sabrina Colón
Matt Shultz	Vickie Miller	
David McPherson	Paul Bearden	

> "In over a decade of involvement in the Yadkin Regional Water Supply Program, HDR has provided continuity in senior management engagement, exceptional technical personnel appropriate for each stage of the project, and an unwavering commitment to the best interests of Union County. HDR has consistently demonstrated their ability to be flexible in their approach to the project. HDR manages personnel to ensure milestones and desired outcomes are met within established budgets while navigating complex challenges throughout the project."
>
> **John Shutak, PE, Project Manager, Union County**

PDB

Stowe Regional Water Resource Recovery Facility, Owner's Advisor

Charlotte Water, NC

The Stowe Regional WRRF will be a new $300M 15 MGD regional WWTF with total phosphorus and total nitrogen limits, and associated conveyance infrastructure using Progressive Design-Build (PDB) for the project delivery. The project is accommodating projected growth in western Mecklenburg and eastern Gaston counties by consolidating flows from Mt Holly, Belmont, and western Mecklenburg County. To meet the Lake Wylie TMDL requirements, the project and NPDES permit limits were developed via nutrient allocation acquisitions from Belmont, Mt Holly, and an industrial wastewater treatment plant in the basin. HDR is serving as the Owner's Advisor.

HDR worked with Charlotte Water to complete development of PDB procurement documents, project reviews and meeting coordination, NPDES permit application and discussions with NC DEQ to obtain final permit, Environmental Management Plan for the entire site, led the 401/404 permitting process and endangered species survey for the Program, value engineering, river sampling and modeling to support NPDES permit and to justify lower DO limits, led state funding efforts (Mount Holly and Belmont received funding), completed parallel cost estimates and cost reviews, negotiated GMPs with Design Builder, supported Charlotte Water PM in managing and tracking CIP, led bi-weekly coordination meetings with Owner and all Design-Build teams, extension of Owner's Staff, and technical review of all deliverables.

HDR is also leading the public information efforts including a project website, an internal City of Charlotte stakeholders' group and a Community Engagement stakeholders process. Charlotte Water intends to incorporate community amenities into the project and is currently working with an external stakeholder group to determine what amenities would be most desired by the community and blend with the project.

PROJECT DETAILS

Owner's Representative:
Nicole Bartlett, PE,
Engineering Division Manager
704.497.8801
nbartlett@charlottenc.gov
5100 Brookshire Blvd, Clt, NC 28216

Project Team Members:
Kip Kalisiak
Kim Colson
Matt Shultz
Pete Bredehoeft
Tyler Leben
Paul Bearden
David McPherson
Jim Upton
David Duff
Sabrina Colón

PDB

Mount Holly Pumping Station and Force Main (MH PS&FM) and Stowe Headworks and Influent Pumping Station (HW&IPS), Owner's Advisor

Charlotte Water, NC

The Mount Holly Pumping Station and Force Main (MH PS&FM) and Stowe Headworks and Influent Pumping Station (HW&IPS) is a $200M project currently under construction. This project consists of:

- New pump station on the existing Mt. Holly WWTP site for pumping flow under the Catawba River and Flow Equalization pumping
- Mt. Holly equalization storage adjacent to the proposed pump station on the Mt. Holly WWTP site. Preliminary planning estimates a volume need of approximately 6 MG. Space on the site shall also be reserved for a future tank.
- 24-inch force mains crossing under the Catawba River and Long Creek. Both of these crossings are being installed by trenchless methods, with parallel pipes installed across both water bodies and connected to the primary force main at each end.
- Intermediate flow equalization basin
- New influent headworks upstream of the pumps, an electrical building containing switchgear and controls, a standby power generator, new power supply, associated site work, yard piping and other miscellaneous items.

PROJECT DETAILS

Owner's Representative:
Nicole Bartlett, PE, Engineering Division Manager
704.497.8801
nbartlett@charlottenc.gov
5100 Brookshire Blvd, Clt, NC 28216

Project Team Members:
Kip Kalisiak
Kim Colson
Matt Shultz
Pete Bredehoeft
Tyler Leben
David McPherson
Jim Upton
Paul Bearden
David Duff

PDB

Kildaire Farm Road Water Main Reinforcement, Owner's Advisor

Town of Cary, NC

HDR is serving as the Owner's Advisor (OA) for the Town of Cary's Kildaire Farm Road water main reinforcement project, which includes the construction of approximately 5,400 linear feet of 20-inch water main and 2,500 linear feet of 16-inch water main. The Town decided to leverage this project as its first Progressive Design-Build (PDB) delivery project. In the role as OA, HDR partnered early with the Town to lead the following pre-construction services:

- Project criteria, cost and schedule development
- PDB Contract Document development
- DB Team Procurement
- Contract Negotiations
- DB Team Design, Cost Estimate and Schedule Reviews

As the project progresses HDR will continue to support the Town's negotiation of the project's guaranteed maximum price (GMP) with the contractor, construction administration and RPR services. Phase II of the project is currently awaiting NTP, while the Town contemplates adding additional scope to the project and coordination with other Town projects.

PROJECT DETAILS

Owner's Representative:
Paul Webster, PE, Senior Engineer
919.462-3933
paul.webster@townofcary.org
316 N. Academy St., Cary, NC 27513

Project Team Members:
Kip Kalisiak
Matt Shultz

PDB

Liberty Elevated Water Tank, Owner's Advisor

City of Greensboro, NC

The City of Greensboro is in the process of constructing a 0.75 million gallon (MG) elevated water tank on the northside of Brown Meadows Road in Liberty, NC. The tank will support the Greensboro-Randolph Megasite development and is being delivered as a design-build project. HDR was selected as the Owner's Advisor with Landmark Structures and Black & Veatch as the Design-Build team.

The project was broken into two phases with Phase 1 involving procurement of the design-builder and preliminary engineering services while Phase 2 includes pre-construction and construction phase services. HDR has provided guidance and support services to the City throughout both Phases as the Owner's Advisor. HDR has specifically assisted with communication and coordination of key project issues, design-builder procurement efforts, negotiation of guaranteed maximum prices, review of design and cost submittals, project accounting, permitting support, construction administration, materials testing, construction observation and other tasks as necessary to support the City. The project is slated to be completed in June of 2023 to meet requirements for the Greensboro-Randolph Megasite.

PROJECT DETAILS

Owner's Representative:
Jana Stewart, PE, CDT, Engineering Manager
336.412.6314
Jana.Stewart@greensboro-nc.gov
2602 S. Elm-Eugene Street, Greensboro, NC 27408

Project Team Members:
Jason Cook
Kip Kalisiak
Matt Shultz
Vickie Miller

County-Wide Transmission Main

Union County, NC

Union County retained HDR to provide professional engineering services for the design and construction of 22 miles of water transmission mains ranging in size from 24 to 42 inches in diameter. HDR performed a study and design of a water transmission system that would deliver water from the County's 2-MG and 4-MG ground storage tanks in the southwest corner of the County to a proposed new tank farm 23 miles to the northeast. The study included sizing of the transmission piping, determining storage and pumping requirements and locations, an analysis of alignment alternatives, water quality considerations, permitting and environmental requirements, project implementation and phasing plan, and estimated project costs.

HDR performed extensive hydraulic modeling on the system to evaluate pipeline diameters, transmission main alignments, booster pump station location/size, operation of the storage tanks, and a water age analysis to ascertain the cumulative residence time of the water within the transmission system. A hydraulic transient analysis was also performed to determine the potential for damaging pressure surges inside the pipeline.

The preferred route alignment included 3,000 LF of trenchless pipe design under a four-lane divided highway and railroad and multiple interconnects with existing water lines. HDR also prepared the final designs, environmental assessment and performed construction phase services.

PROJECT DETAILS

Owner's Representative:
John Shutak, Project Manager
704.283.3651
john.shutak@unioncountync.gov
500 N. Main St., Monroe, NC 2811

Project Team Members:
Matt Shultz
Vickie Miller

Water Transmission Main from WTP to Ground Storage Tanks

Union County, NC

Union County selected HDR to perform professional engineering services for the water transmission pipeline system to deliver water from the Catawba River WTP in Lancaster, South Carolina to the County's ground storage tanks. HDR conducted a preliminary engineering study to size the parallel transmission water main, determine the best alignment alternative, evaluate tie-in requirements at the plant's southern and northern end, and develop a preliminary schedule and cost estimate.

HDR developed the final route design of 41,000 LF of 42-inch parallel water transmission piping from the existing Catawba River WTP to the existing Sims Road Tank site. The design included multiple trenchless crossings including a 60-inch bore under Highway 521, a four-lane divided highway, significant stream crossings, and blow-off valves at locations along the alignment. The design also included a 4 MG storage tank. One of the interesting features of this project was that the water plant lies five miles inside South Carolina and serves both Lancaster County, SC, and Union County, NC, making coordination and permitting of the water main uniquely challenging to meet the requirements of two counties and two states. HDR also developed an Environmental Assessment and performed comprehensive construction phase services.

PROJECT DETAILS

Owner's Representative:
John Shutak, Project Manager
704.283.3651
john.shutak@unioncountync.gov
500 N. Main St., Monroe, NC 2811

Project Team Members:
Matt Shultz

Raw Water Transmission Main

Town of Cary, North Carolina

HDR completed preliminary and final design of 33,000 LF of 42-, 48- and 54- inch raw water transmission main piping. The project included the following key elements:

- Hydraulic analysis to determine sizing
- Routing Study to evaluate alternative pipe alignments
- Development of a Preliminary Engineering Report
- Prepared an Environmental Assessment and received a FONSI
- Surveying of the selected alignment
- Geotechnical exploration along the selected alignment
- Performed a Soil Corrosivity Study including field and laboratory analyses
- Field testing for stray currents from power transmission mains and existing utilities
- Performed a Hydraulic Transient Analysis of the proposed and existing infrastructure
- Prepared final design drawings and specifications
- Prepared detailed design and sequencing of five interconnects with existing systems
- Completed construction services

PROJECT DETAILS

Owner's Representative:
Betsy Drake, PE, Utilities Engineer
919.481.5093
betsy.drake@townofcary.org
316 N. Academy Street, Cary, NC 27512

Project Team Members:
Matt Shultz
Jeff Giddings
David McPherson
Vickie Miller
Tina Whitfield

Lake Gaston Phase II Transmission Main

City of Chesapeake, Virginia

The City of Chesapeake implemented its Lake Gaston Phase II Program to help secure long-term drinking water supplies for its residents. The City retained HDR to provide professional engineering services for the planning, preliminary and detailed design, and construction management of the raw water transmission facilities that will supply the new Lake Gaston WTP. HDR completed several studies and detailed designs for the program.

- Designed 83,000 linear feet (LF), 36-inch Ductile Iron Pipe (DIP) raw water transmission.
- Designed 30,000 LF, 36-inch DIP finished water main and conversion of an existing 24-inch finished water main to raw water main between the In-Town Lake reservoirs and Lake Gaston WTP.
- Designed metering facility, pump stations, ground storage tanks, and pressure-reducing valves.
- Route selection and assistance with easement acquisition.
- Obtained the Conditional Use Permit and site plan approvals from Suffolk.
- Completed wetlands delineation and permitting with ACOE, VDEQ and VMRC.
- Designed cut-and-cover pipeline and three HDD crossings
- Construction administration and inspection

PROJECT DETAILS

Owner's Representative:
Mark S. Mallamo, P.E., Project Manager
757.382.6671
mmallamo@cityofchesapeake.net
306 Cedar Rd, Chesapeake, VA 23322

Project Team Members:
Matt Shultz

03 Overall Staff Experience Proposed for this Project

We have built a team to leverage the knowledge and experience of our key leadership and technical resources who have an understanding of the complexities of alternative delivery projects to effectively meet your project objectives. The HDR team combines proven leadership and technical expertise, bringing the skills and ability to deliver excellent results for you.

Jason Cook and Kip Kalisiak working collaboratively on workshop preparation.

PRINCIPAL-IN-CHARGE
Kip Kalisiak, PE ⊙
Raleigh, NC

PROJECT MANAGER
Jason Cook, PE, PMP ⊙
Raleigh, NC

FUNDING AND GRANTS	WETLANDS/ ENVIRONMENTAL PERMITTING	OWNERS PROJECT CRITERIA	INDEPENDENT COST ESTIMATING	CONSTRUCTION SERVICES
Kim Colson, PE ⊙ Raleigh, NC	Vickie Miller, PWS ⊙ Raleigh, NC	Matt Shultz, PE ⊙ Charlotte, NC	Pete Bredehoeft, CEP ⊙ Atlanta, GA	Nathan Dinzeo ⊙ Raleigh, NC

AS-NEEDED SERVICES AND PROJECT SUPPORT

PIPELINE DESIGN REVIEW
Stephanie Holloman, PE
David McPherson, Ph.D, PE

VALUE ENGINEERING
Paul Mourt, PE

TRENCHLESS DESIGN REVIEW
Paul Bearden

HYDRAULIC MODELING
Tina Whitfield, PE, ENV SP

CONTRACTS SPECIALIST
Jim Upton, PE

CORROSION CONTROL
Jeff Giddings, PE, CPT

GEOTECHNICAL
Brian Keaney, PE

SR PIPELINE INSPECTOR (RPR)
Scott Mitchell
David Duff

PROJECT CONTROLS/QC
Tyler Leben, PE

STRATEGIC COMMUNICATIONS
Sabrina Colón

KEY

⊙ *Key Team Member*

Note: Locations of Project Support Staff are listed on each respective resume within Appendix.

Principal-in-Charge of the Project

KIP KALISIAK, PE | Principal-in-Charge
Since NC House Bill 857 was ratified in 2013, Kip has helped several NC clients implement their first alternative delivery project including the Town of Cary, Johnston County, Town of Clayton, Winston-Salem City/County Utilities, Greensboro Water Resources, Charlotte Water, and Union County.

Individual Team Members for Each Discipline and Relevant Experience

JASON COOK, PE, PMP | Project Manager | Raleigh, NC
Jason brings LCFWASA decades of North Carolina water/wastewater industry experience and technical expertise. He designs and manages the delivery of a wide range of water/wastewater projects including pipeline and pump stations, utility planning projects, utility performance improvements, and water/wastewater infrastructure master planning and design. Jason's experience also includes management of both traditional design-bid-build and alternative delivery projects.

KIM COLSON, PE | Funding and Grants | Raleigh, NC
Kim specializes in bridging regulatory, funding, and water issues with a holistic approach. His professional experience spans three decades of service with the North Carolina Department of Environmental Quality (NCDEQ). Kim's experience includes wastewater treatment, collection systems, stormwater, drinking water, wetlands, and industrial pretreatment regulatory programs.

VICKIE MILLER, PWS | Wetlands/Environmental Permitting | Raleigh, NC
Vickie has experience leading and preparing NEPA/SEPA documentation for water, wastewater, and transportation projects. She has prepared Environmental Assessments (EA), Environmental Impact Statements (EIS), Categorical Exclusions (CE), Natural Resources Technical Reports (NRTR), CWA permits, and riparian/wetland restoration plans.

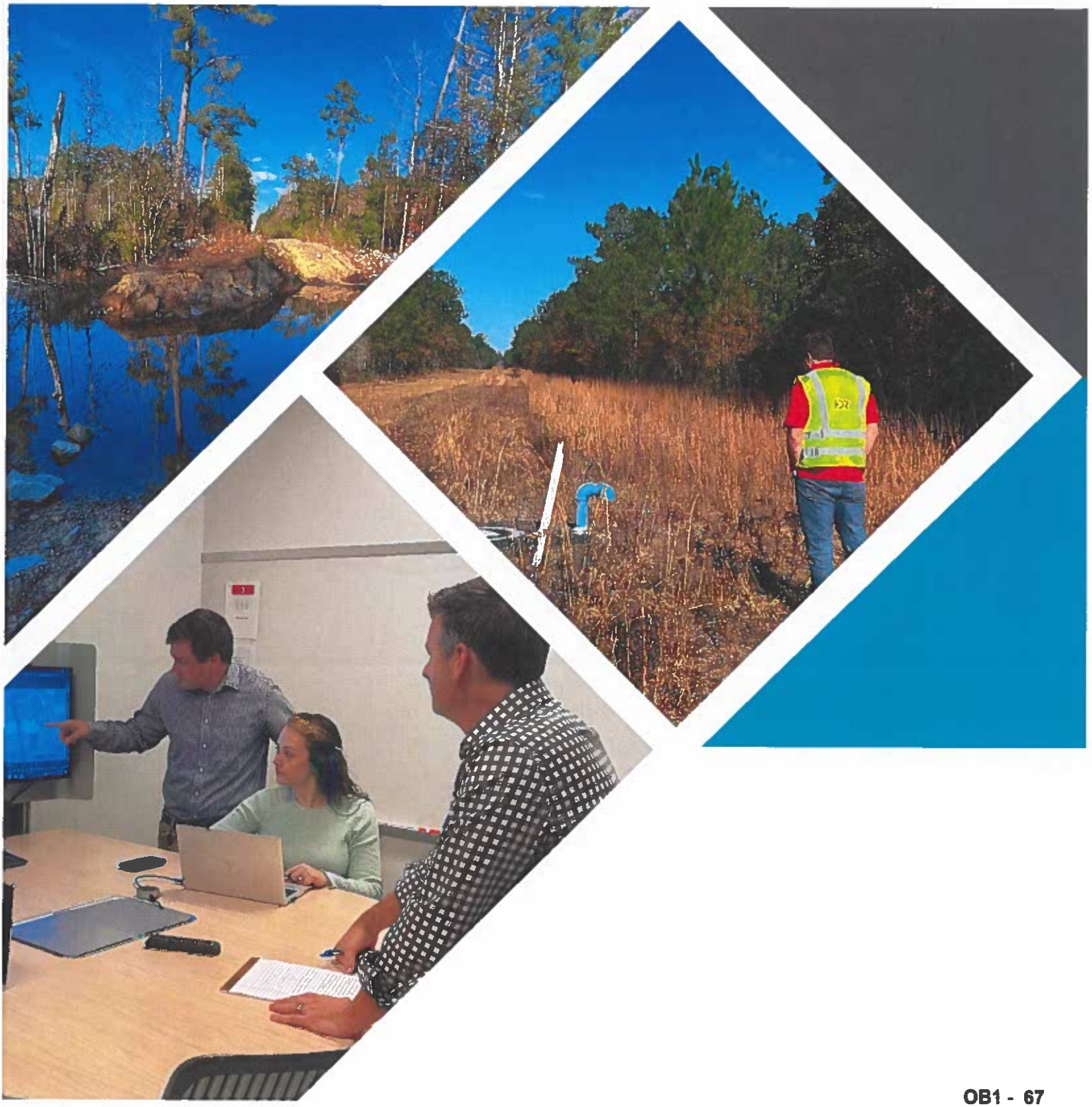
MATT SHULTZ, PE | Owner's Project Criteria | Charlotte, NC
Matt has extensive experience in the planning, design, construction, and condition assessment of water and wastewater pipelines and pump stations. He previously served as Vice-Chair of HDR's Pipelines and Trenchless Practice Group and also is the Group Leader for HDR's Pump Station and Pipelines practice in the South Atlantic Area. He has been involved in the design of over 1 million feet of water and wastewater pipeline and nearly 40 pump stations.

PETE BREDEHOEFT, CEP | Cost Estimating | Atlanta, GA
Pete has completed more than 3,300 cost estimates on all levels, including program management, conceptual bonding type estimates, order of magnitude project estimates, design development estimates, construction document estimates, final design estimates, operations/maintenance estimates and change order-type definitive level estimates. He is an expert in the cost estimating process and procedures for programs.

NATHAN DINZEO | Construction Services | Raleigh, NC
Nathan performs constructability reviews of project designs and leads projects throughout the construction phase. Nathan works on projects including water and wastewater treatment plants, water transmission pipelines, water pump stations, wastewater collection systems, wastewater pump stations, and related infrastructure projects.

APPENDIX

- Insurance Requirements
- Secretary of State
- Resumes



Insurance Requirements

ACORD

CERTIFICATE OF LIABILITY INSURANCE

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Willis Towers Watson Midwest, Inc. c/o 26 Century Blvd P.O. Box 305191 Nashville, TN 372305191 USA	CONTACT NAME: Willis Towers Watson Certificate Center PHONE (A/C, No, Ext): 1-877-945-7378 FAX (A/C, No): 1-888-467-2378 E-MAIL ADDRESS: certificates@willis.com
INSURED HDR Engineering, Inc. of the Carolinas 1917 South 67th Street Omaha, NE 68106	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A: Liberty Mutual Fire Insurance Company — 23035 INSURER B: Ohio Casualty Insurance Company — 24074 INSURER C: Liberty Insurance Corporation — 42404 INSURER D: INSURER E: INSURER F:

COVERAGES CERTIFICATE NUMBER: W24977697 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR X Contractual Liability GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT X LOC OTHER:			TB2-641-444950-032	06/01/2022	06/01/2023	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 2,000,000 $ 1,000,000 $ 10,000 $ 2,000,000 $ 4,000,000 $ 4,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			AS2-641-444950-042	06/01/2022	06/01/2023	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 2,000,000 $ $ $
B	UMBRELLA LIAB X OCCUR X EXCESS LIAB CLAIMS-MADE DED X RETENTION $ 0			EUO(23) 57919363	06/01/2022	06/01/2023	EACH OCCURRENCE AGGREGATE	$ 5,000,000 $ 5,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: No If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		WA7-64D-444950-012	06/01/2022	06/01/2023	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER	CANCELLATION
Sample	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

6/1/2023

DATE (MM/DD/YYYY) 6/1/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Lockton Companies 444 W. 47th Street, Suite 900 Kansas City MO 64112-1906 (816) 960-9000 kctsu@lockton.com	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS:
INSURED 1429583 IIDR ENGINEERING, INC. OF THE CAROLINAS 1917 SOUTH 67TH ST. OMAHA NE 68106	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A: Lloyds of London INSURER B: INSURER C: INSURER D: INSURER E: INSURER F:

COVERAGES **CERTIFICATE NUMBER:** 18584305 **REVISION NUMBER:** XXXXXXX

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY CLAIMS-MADE OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY PRO-JECT LOC OTHER			NOT APPLICABLE			EACH OCCURRENCE	$ XXXXXXX
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ XXXXXXX
							MED EXP (Any one person)	$ XXXXXXX
							PERSONAL & ADV INJURY	$ XXXXXXX
							GENERAL AGGREGATE	$ XXXXXXX
							PRODUCTS - COMP/OP AGG	$ XXXXXXX
								$
	AUTOMOBILE LIABILITY ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			NOT APPLICABLE			COMBINED SINGLE LIMIT (Ea accident)	$ XXXXXXX
							BODILY INJURY (Per person)	$ XXXXXXX
							BODILY INJURY (Per accident)	$ XXXXXXX
							PROPERTY DAMAGE (Per accident)	$ XXXXXXX
								$ XXXXXXX
	UMBRELLA LIAB OCCUR EXCESS LIAB CLAIMS-MADE DED RETENTION $			NOT APPLICABLE			EACH OCCURRENCE	$ XXXXXXX
							AGGREGATE	$ XXXXXXX
								$ XXXXXXX
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		NOT APPLICABLE			PER STATUTE OTH-ER	
							E.L. EACH ACCIDENT	$ XXXXXXX
							E.L. DISEASE - EA EMPLOYEE	$ XXXXXXX
							E.L. DISEASE - POLICY LIMIT	$ XXXXXXX
A	ARCH & ENG PROFESSIONAL LIABILITY	N	N	P001412200	6/1/2022	6/1/2023	PER CLAIM: $1,000,000 AGGREGATE: $1,000,000	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

18584305
SAMPLE

CANCELLATION See Attachment

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Joseph M Agnello

Registered with the Secretary of State

NORTH CAROLINA
Department of the Secretary of State

CERTIFICATE OF EXISTENCE

I, ELAINE F. MARSHALL, Secretary of State of the State of North Carolina, do hereby certify that

HDR ENGINEERING, INC. OF THE CAROLINAS

is a corporation duly incorporated under the laws of the State of North Carolina, having been incorporated on the 20th day of July, 1948, with its period of duration being Perpetual.

I FURTHER certify that, as of the date set forth hereunder, the said corporation's articles of incorporation are not suspended for failure to comply with the Revenue Act of the State of North Carolina; that the said corporation is not administratively dissolved for failure to comply with the provisions of the North Carolina Business Corporation Act; that its most recent annual report required by N.C.G.S. 55-16-22 has been delivered to the Secretary of State; and that the said corporation has not filed articles of dissolution as of the date of this certificate.

Scan to verify online.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at the City of Raleigh, this 12th day of December, 2022.

Elaine F. Marshall

Secretary of State

Certification# 114761823-1 Reference# 19222989- Page: 1 of 1
Verify this certificate online at https://www.sosnc.gov/verification

KIP KALISIAK, PE

Principal-in-Charge

Over the past decade, Kip has worked with water/wastewater utilities on implementing their alternative delivery projects. He has served as an Owner's Advisor for several North Carolina clients. He understands the regional DB and CMAR markets and associated risks involved. Kip has worked with several municipal legal and procurement staffs to develop contracts and procurement documents that are tailored to the specific needs of the Owner. Kip has helped negotiate several DB GMP contracts including two contracts totaling $260M for the Yadkin Regional Water Supply Program in Union County, NC. This depth of experience provides you a trusted advisor as you move forward with the 54" Raw Water Transmission Main.

OFFICE LOCATION	Raleigh, NC
EDUCATION	BS, Civil Engineering, Michigan State University
REGISTRATIONS	Professional Engineer: NC
TENURE *(INDUSTRY | HDR)*	23 Yrs | 12 Yrs

Relevant Experience

Union County, Yadkin Regional Finished Water Infrastructure, Owner's Advisor/Program Manager, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Project Principal/DB Advisor

Union County, Yadkin Regional Raw Water Infrastructure, Owner's Advisor/Program Manager, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for intake, pump stations, and raw water conveyance.
Role: Project Principal/DB Advisor

Charlotte Water, Stowe Regional Water Resource Recovery Facility, Owner's Advisor, Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for this new greenfield facility.
Role: Project Principal/DB Advisor

Charlotte Water, Mount Holly Pumping Station and Force Main and Stowe Headworks and Influent Pumping Station, Owner's Advisor, Mt Holly & Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for complex project.
Role: Project Principal/DB Advisor

Town of Cary, Kildaire Farm Road Waterline, Owner's Advisor, Cary, NC
HDR led the delivery model selection, project planning project criteria development, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a waterline located in a congested area of Cary.
Role: DB Advisor

Western Intake Partnership (WIP), Program Manager for a New Regional Water Treatment Plant and Associated Infrastructure, Chatham County, NC
HDR is serving as the Program Manager/Owner's Advisor for this large-scale drinking water program in the Triangle area.
Role: Program Principal/Project Delivery Advisor

Town of Clayton, Sam's Branch WRF, Owner's Advisor, Clayton, NC
HDR is serving as the Program Manager/Owner's Advisor for this new greenfield treatment plant and associated infrastructure.
Role: Program Delivery Advisor

JASON COOK, PE, PMP

Project Manager

Jason has extensive experience managing, planning, designing, and supporting construction phase services on numerous water/wastewater conveyance projects. He has also played an integral role on several alternative delivery projects across North Carolina and has served as the Owner's Advisor and as a vital member of multiple Design-Builder teams for conveyance projects. Jason's technical ability and familiarity with alternative delivery will provide LCFWASA with a trusted and experienced project manager throughout all phases of this project.

OFFICE LOCATION	Raleigh, NC
EDUCATION	MS, Civil Engineering, North Carolina State University BS, Natural Resources, North Carolina State University
REGISTRATIONS	Professional Engineer: NC, DC Project Managment Professional (PMP) NASSCO PACP
TENURE *(INDUSTRY | HDR)*	17 Yrs | <1 Yr

Relevant Experience

City of Greensboro, Liberty Elevated Water Tank, Owner's Advisor, Greensboro, NC
HDR has led the initial planning, project criteria development, contractor procurement, preliminary engineering support, negotiation of GMP, review of design and cost submittals, project accounting, permitting support, construction administration, materials testing, construction observation, and other necessary task to support the City on this project.
Role: Project Manager/DB Advisor.

Western Intake Partnership (WIP), Program Manager for a New Regional Water Treatment Plant and Associated Infrastructure, Chatham County, NC
HDR is serving as the Program Manager/Owner's Advisor for this large-scale drinking water program in the Triangle area.
Role: Project Engineer/DB Advisor.

NON-HDR PROJECTS

Union County, Yadkin Regional Water Supply, Raw Water Infrastructure, Union County, NC
Jason led the planning and design of approximately 29 miles of new 42-inch and 54-inch raw water transmission main. Key elements of the project included hydraulic and surge attenuation analysis, pipe sizing, pipe material and pressure class selection, routing analysis, future parallel pipeline considerations, cathodic protection, open cut and trenchless design, environmental impacts, permitting, and easement acquisition. A Design-Build delivery method was utilized for the project.
Role: Design Manager/Design-Builder.

Fayetteville Public Works Commission, North Fayetteville Force Main Replacement, Fayetteville, NC
Jason led the planning and design efforts to replace approximately 21,000 LF of 20-inch DIP force main with a new 24-inch PVC main. Key planning and design efforts included and hydraulic and surge attenuation analysis, pipe material and pressure class selection, routing analysis, pipe embedment considerations, trenchless design, environmental impacts, permitting, and easement acquisition. A Design-Build delivery method was utilized for the project.
Role: Project Manager/Design-Builder.

City of Goldsboro, Goldsboro Sewer Infrastructure Improvements, Goldsboro, NC
Jason led the planning and design of approximately 5 miles of new 12-inch force main, a new 1 MG pump station, upgrades to two existing pump stations, re-routing of various parts of the City's gravity sewer system. Key planning and design efforts included hydraulic analysis, flow monitoring, evaluation of proposed industrial dischargers, pipe sizing, routing analysis, open cut and trenchless design, environmental impacts, permitting, and easement acquisition. A Design-Build delivery method was utilized for the project.
Role: Project Manager/Design-Builder.

KIM COLSON, PE

Funding and Grants

Kim specializes in bridging regulatory, funding, and water issues with a holistic approach. His professional experience spans three decades of service with the North Carolina Department of Environmental Quality (NCDEQ). Kim's experience includes wastewater treatment, collection systems, stormwater, drinking water, wetlands, and industrial pretreatment regulatory programs. In addition, Kim also has extensive water infrastructure funding experience. When he retired from NCDEQ, Kim was Director of the Division of Water Infrastructure (Division), Chair of the State Water Infrastructure Authority, and President of the Council of Infrastructure Financing Authorities. He is also recipient of The Order of the Long Leaf Pine.

While Division Director, Kim managed both the Clean Water State Revolving Fund (SRF) and Drinking Water SRF for North Carolina and worked with SRFs across the country and EPA leadership as well. Kim also managed State Reserve grant programs and the State CDBG Infrastructure program (federal grant program). Just prior to retiring from NCDEQ, Kim was working with state leaders on American Rescue Plan Act (ARPA) funding requirements and eligibilities for water infrastructure projects.

OFFICE LOCATION	Raleigh, NC
EDUCATION	BS, Agricultural Engineering, North Carolina State University
REGISTRATIONS	Professional Engineer: NC
TENURE *(INDUSTRY | HDR)*	34 Yrs | 1 Yr

Relevant Experience

Charlotte Water, Owner's Advisor, Stowe Regional WRRF, Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for this new greenfield facility.
Role: Funding and Regulatory Lead

Town of Wilkesboro, WWTP Expansion, Wilkesboro, NC
Support includes preparation of a $60 million Clean Water SRF funding application for WWTP expansion with supporting documentation resulting in a $18 million state grant and a $42 million Clean Water SRF loan at 0% interest of which $1 million is principal forgiveness. Assisting with funding process.
Role: Funding & Financial Support Services

Western Intake Partnership (WIP), Program Manager for a New Regional Water Treatment Plant and Associated Infrastructure, Chatham County, NC
HDR is serving as the Program Manager/Owner's Advisor for this large-scale drinking water program in the Triangle area.
Role: Funding & Financial Support Services/Regulatory Advisor and Reviewer

Charlotte Water, Mount Holly Pumping Station and Force Main and Stowe Headworks and Influent Pumping Station, Owner's Advisor, Mt Holly & Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for complex project.
Role: Funding Specialist

Town of Clayton, Sam's Branch WRF, Owner's Advisor, Clayton, NC
HDR is serving as the Program Manager/Owner's Advisor for this new greenfield treatment plant and associated infrastructure.
Role: Funding Specialist

City of Blair, WTP, Blair, NE
Water treatment plant equipment replacement construction documents were reviewed for inclusion of basic federal procurement requirements (i.e., 2 CFR Part 200) related to ARPA and requirements related to Drinking Water SRF.
Role: Funding Specialist

City of Shelby, Grant Applications, Shelby, NC
Assisted utility with ARPA study grant application to support capital planning and evaluation of the City's water treatment plant and wastewater treatment plant. These successful grant applications are assisting the City in understanding the state and capacity of the treatment facilities. Assisting with ARPA funding process.
Role: Funding & Financial Support Services

VICKIE MILLER, PWS

Wetland/Environmental Permitting

Vickie is a Senior Environmental Scientist/Planner with HDR in Raleigh North Carolina. Vickie has over 19 years of experience leading and preparing NEPA/SEPA documentation for complex water/wastewater and other utility projects. She has prepared Environmental Assessments (EA) Environmental Impact Statements (EIS) Categorical Exclusions (CE) Natural Resources Technical Reports (NRTR) CWA Permits and riparian/ wetland restoration plans for the several State Departments of Transportation (NCDOT VDOT TDOT) North Carolina Ecosystem Enhancement Program (EEP) and numerous federal municipal and private clients.

OFFICE LOCATION	Raleigh, NC
EDUCATION	MS, Natural Resources, North Carolina State University BS, Environmental Sciences/Studies, University of North Carolina
REGISTRATIONS	Professional Wetland Scientist
TENURE *(INDUSTRY | HDR)*	24 Yrs | 17 Yrs

Relevant Experience

Union County, Yadkin Regional Raw Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Environmental Permitting

Union County, Yadkin Regional Finished Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Environmental Permitting

Town of Cary, Raw Water Transmission, Cary, NC
As part of HDR's services for the Cary/Apex WTF Phase III Expansion project the Preliminary Engineering Report recommended an additional transmission main from Jordan Lake to the WTF in order to provide needed redundancy. HDR was retained to provide an initial study, a PER, final design, permitting, and construction phase services for the additional 42-inch parallel raw water transmission parallel pipeline.
Role: Environmental Permitting

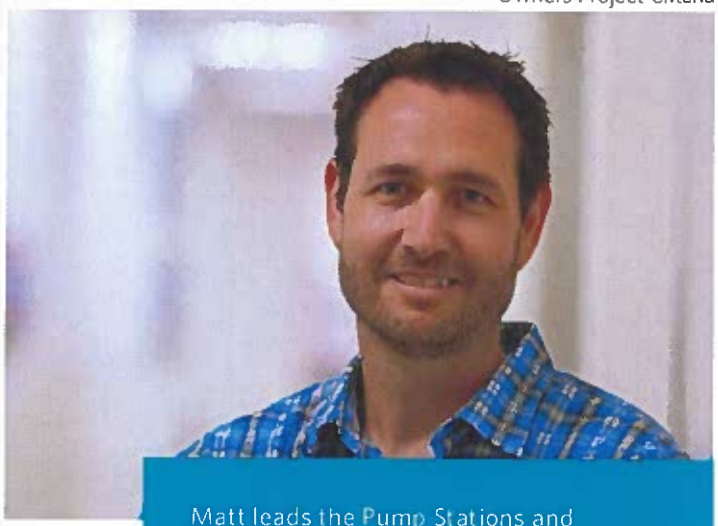
City of Greensboro, Liberty Elevated Water Tank, Owner's Advisor, Greensboro, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract procurement, and contract negotiations for this new water tank.
Role: Environmental Permitting

City of Greensboro, Megasite Water and Wastewater Conveyance, Greensboro, NC
HDR is serving as the lead firm and single-point of contact for the City with the support of small business partners to provide water and sewer improvements through environmental assessment permitting public involvement surveying property mapping plat preparation geotechnical and final design.
Role: Environmental Permitting

Union County, County-Wide Transmission Main, Union County, NC
The study included sizing of the transmission piping determining storage and pumping requirements and locations an analysis of alignment alternatives water quality considerations permitting and environmental requirements project implementation plan and estimated project costs. The water main design of the system was broken out into five design phases. The transmission main consists of 18500 linear feet of 36-inch pipeline and 4500 linear feet of 24-inch pipeline.
Role: Environmental Permitting

MATT SHULTZ, PE

Owners Project Criteria



Matt leads the Pump Stations and Pipelines Group for HDR's South Atlantic Area and has extensive experience in planning, design, and condition assessment of water distribution, wastewater collection, and pumping station projects. Projects completed under his design or management total over 1,000,000 linear feet of pipe installed and over 30 pump stations. He has significant experience managing sub-contractors to efficiently gather background survey and geotechnical data. He also has experience with design-build conveyance projects as well as owner's advisory roles. He understands all of the complex permitting requirements across numerous agencies typically required for conveyance projects.

OFFICE LOCATION	Charlotte, NC
EDUCATION	BS, Civil Engineering, University of Kentucky
REGISTRATIONS	Professional Engineer: NC, SC, KY
TENURE *(INDUSTRY | HDR)*	26 Yrs | 22 Yrs

Relevant Experience

Charlotte Water, Mount Holly Pumping Station and Force Main and Stowe Headworks and Influent Pumping Station, Owner's Advisor, Mt Holly & Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for complex project.
Role: Technical Advisor

Union County, Yadkin Regional Raw Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Technical Advisor

Town of Cary, Kildaire Farm Road Waterline, Owner's Advisor, Cary, NC
HDR led the delivery model selection, project planning project criteria development, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a waterline located in a congested area of Cary.
Role: Technical Advisor

Union County, Yadkin Regional Finished Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Technical Advisor

Town of Cary, Raw Water Transmission, Cary, NC
HDR was retained to provide a routing study, survey and geotechnical exploration, corrosion control evaluation, hydraulic surge analysis, PER, final design, permitting, bid phase and construction phase services for an additional 42"-54" parallel raw water transmission parallel pipeline.
Role: Design Manager

Charlotte Water, Clarke Creek Pipeline, Charlotte, NC
This PDB project will construct a new 2.5 MGD pumping station and 6 miles of force main to provide development capacity for Charlotte Water within the Clarke Creek Basin. Additional improvements will be implemented at the McDowell Creek Wastewater Treatment Plant to support the increase in flow from the Clarke Creek Pumping Station.
Role: Project Manager

PETE BREDEHOEFT, CEP

Cost Estimating

Pete has completed more than 3,300 cost estimates on all levels, including program management, conceptual bonding type estimates, order of magnitude project estimates, design development estimates, construction document estimates, final design estimates, operations/ maintenance estimates and change order-type definitive level estimates. He is an expert in the cost estimating process and procedures for programs. Pete is a specialist in estimating location or area adjustment factors and in escalation development and commodity trends.

OFFICE LOCATION	Atlanta, GA
EDUCATION	BS, Construction Management Associates, Civil Engineering Technology, Ferris State University Associates, Land Surveying, Ferris State University
REGISTRATIONS	Certified Estimating Professional
TENURE *(INDUSTRY | HDR)*	32 Yrs | 2 Yrs

Relevant Experience

Charlotte Water, Owner's Advisor, Stowe Regional WRRF, Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for this new greenfield facility.
Role: Cost Estimating

Charlotte Water, Mount Holly Pumping Station and Force Main and Stowe Headworks and Influent Pumping Station, Owner's Advisor, Mt Holly & Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for complex project.
Role: Cost Estimating

Town of Clayton, Sam's Branch WRF, Owner's Advisor, Clayton, NC
HDR is serving as the Program Manager/Owner's Advisor for this new greenfield treatment plant and associated infrastructure.
Role: Cost Estimating

Johnston County, T.G. Broome WTP Expansion, Owner's Advisor, Johnston County, NC
This PDB project includes an upgrade of the existing plant from 14.0 MGD to 18.0 MGD including a new electrical service, expanded operations space, and additional solids handling capacity. The project includes an early work package prior to the GMP to meet a tight schedule and careful coordination with the plant staff to provide proper maintenance of plant operations during construction.
Role: Cost Estimating

City of Atlanta, Clean Water Atlanta Program, West Area Combined Storage Overflow Tunnel and PS, Atlanta, GA
Developed the pre-design cost estimate. The project was a 47,000 lf deep storage tunnel with 200 MG storage capacity, 27 feet in diameter, with a 100-MGD, 85-foot diameter dewatering pump station.
Role: Cost Estimating

City of Atlanta, Clean Water Atlanta Program, Wastewater System Improvement Program, Atlanta, GA
Led project controls for the $3.9 billion Clean Water Atlanta Program and Atlanta Water Bureau Capital Improvements Program, which both fell under the Atlanta Department of Watershed Management. Duties included setting up and supporting the overall program financial, accounting and project controls. This role evolved into providing assistance to the Atlanta Water Bureau. Other responsibilities included developing the Estimating and Cost Control Implementation Plan and Supplemental Financial Impacts and Affordability Analysis for the Program.
Role: Project Controls Director and Cost Estimating Task Manager

NATHAN DINZEO

Construction Services

Nathan understands pipeline construction in a coastal environment. Prior to joining HDR, Nathan worked for two prominent water/wastewater Contractors where he gained valuable field experience with different delivery models. He brings experience in scheduling, managing project deadlines, reviewing drawings with field teams prior to installation, and leading progress meetings. Nathan is familiar with local geography from his experience working with Cape Fear Public Utility Authority.

OFFICE LOCATION	Raleigh, NC
EDUCATION	BS, Mechanical Engineering, West Virginia University
REGISTRATIONS	N/A
TENURE *(INDUSTRY | HDR)*	8 Yrs | < 1 Yr

Relevant Experience

Cape Fear Public Utility Authority, Raw Water System Improvements, Wilmington, NC
HDR assisted with conducting a root cause analysis and identify any mitigation measures related to the decline in concentrate pH. Additionally, HDR performed a holistic assessment of the RWTP NF system by examining operating data, documentation, and current management procedures to evaluate the NF system's performance.
Role: Construction Services

Johnston County, T.G. Broome WTP Expansion, Owner's Advisor, Johnston County, NC
This PDB project includes an upgrade of the existing plant from 14.0 MGD to 18.0 MGD including a new electrical service, expanded operations space, and additional solids handling capacity. The project includes an early work package prior to the GMP to meet a tight schedule and careful coordination with the plant staff to provide proper maintenance of plant operations during construction.
Role: Pre-Construction and Construction Services

Cape Fear Public Utility Authority, Greenfield Lake/Pump Station 14 Forcemain, Wilmington, NC
HDR is assisting with the construction of the rehabilitation or replacement of Pumping Station 14 force main, which consists of 3.5 miles of 20- to 24-inch-diameter PCCP. Five pumping station were evaluated by the model for hydraulic deficiencies related to pumping performance that may be affected by diameter and/or alignment changes of the force main. A pipeline alignment study was conducted that evaluated pipeline routes for the replacement alternates, addressing existing utilities, environmental concerns, soil and groundwater issues, permitting requirements, traffic disruptions and potential vehicular safety risks during construction, easements, and construction cost.
Role: Construction Services

Cape Fear Public Utility Authority, Six Pump Station Replacement and Forcemain Rehabilitation, Wilmington, NC
HDR provided design and construction services for the replacement of six existing package pumping stations were over 30 years old and approaching the end of their useful service life, with five submersible pumping stations and one suction lift station. The new pumping stations were constructed adjacent to the existing sites and included the demolition of the existing stations. The project also included rehabilitation/replacement of the associated force mains.
Role: Construction Services

Town of Clayton, Sam's Branch WRF, Owner's Advisor, Clayton, NC
HDR is serving as the Program Manager/Owner's Advisor for this new greenfield treatment plant and associated infrastructure.
Role: Constructability Review and Construction Services

PAUL BEARDEN

Trenchless Design Review

Paul has more than 20 years of experience in the design and construction of pipelines using trenchless technologies, specifically horizontal directional drilling (HDD). Paul has special expertise in the construction of complex, small- and large-diameter HDD pipeline installations and extensive on-site experience. Paul works effectively with multiskilled teams to complete pipeline projects from front-end engineering design through construction. Paul possesses excellent communication, negotiation, and writing skills and the ability to develop positive working relationships.

OFFICE LOCATION	Jackson, MS
EDUCATION	BS, Management, Mississippi State University
REGISTRATIONS	N/A
TENURE *(INDUSTRY | HDR)*	25 Yrs | 4 Yrs

Relevant Experience

Charlotte Water, Mount Holly Pumping Station and Force Main and Stowe Headworks and Influent Pumping Station, Owner's Advisor, Mt Holly & Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for complex project.
Role: Senior Trenchless Consultant

Union County, Yadkin Regional Raw Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Senior Trenchless Consultant

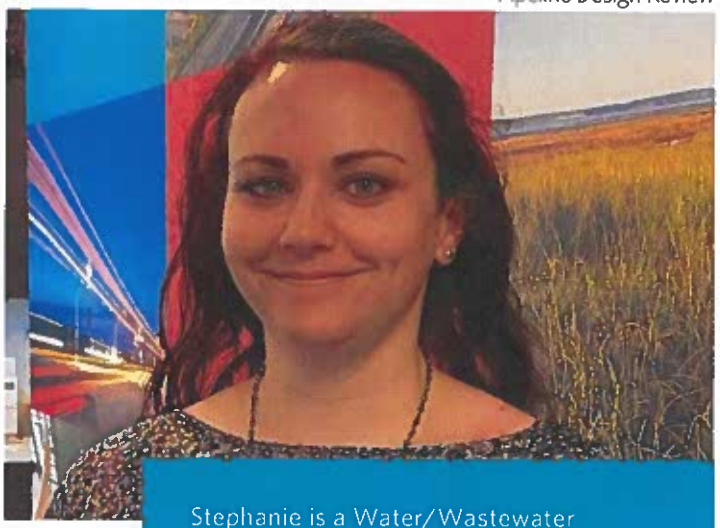
Union County, Yadkin Regional Finished Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Senior Trenchless Consultant

Anne Arundel County Department of Public Works, Transmission Main Maryland 32 at Meade Phase 2, Annapolis, Maryland, MD
Design of approximately 22,000 linear feet of transmission main and a booster pump station across federal property in the vicinity of Fort George G. Meade. Completing an alignment study to obtain federal government and local stakeholder buy-in while also accounting for extensive environmental issues including wetlands abandoned landfills and decommissioned Army training sites.
Role: Senior Trenchless Consultant

City of Anacortes, Raw Water Pipeline, Anacortes, WA
This project included preliminary Engineering for the second raw water pipeline to the WTP. The City of Anacortes elected to install a new 42-inch-diameter pipeline for increased reliability. Trenchless engineering support included developing a more comprehensive site and subsurface investigation plan, trenchless crossing specifications and supplemental trenchless design consultation for developing detailed HDD design drawings and technical specs for constructing the approximately 1,925 feet long 42-inch-diameter HDD crossing.
Role: Senior Trenchless Consultant

STEPHANIE HOLLOMAN, PE

Pipeline Design Review



Stephanie is a Water/Wastewater Engineer primarily focused on planning and designing complex conveyance projects within North Carolina. Stephanie supports the team by executing projects, managing and developing multidiscipline teams, building team technical expertise, leading and mentoring junior staff, and designing production capacity through recruitment, staff development and training.

OFFICE LOCATION	Raleigh, NC
EDUCATION	BS, Civil Engineering, North Carolina State University
REGISTRATIONS	Professional Engineer: NC
TENURE *(INDUSTRY | HDR)*	16 Yrs | < 1 Yr

Relevant Experience

Cape Fear Public Utility Authority, Raw Water System Improvements, Wilmington, NC
HDR was asked to assist with conducting a root cause analysis and identify any mitigation measures related to the decline in concentrate pH. Additionally, HDR performed a holistic assessment of the RWTP NF system by examining operating data, documentation, and current management procedures to evaluate the NF system's performance.
Role: Project Engineer

Cape Fear Public Utility Authority, Greenfield Lake/Pump Station 14 Forcemain, Wilmington, NC
HDR is assisting with the construction of the rehabilitation or replacement of Pumping Station 14 force main, which consists of 3.5 miles of 20- to 24-inch-diameter PCCP. Five pumping station were evaluated by the model for hydraulic deficiencies related to pumping performance that may be affected by diameter and/or alignment changes of the force main. A pipeline alignment study was conducted that evaluated pipeline routes for the replacement alternates, addressing existing utilities, environmental concerns, soil and groundwater issues, permitting requirements, traffic disruptions and potential vehicular safety risks during construction, easements, and construction cost.
Role: Project Engineer

City of Greensboro, Megasite Water and Wastewater Conveyance, Greensboro, NC
HDR is serving as the lead firm and single-point of contact for the City with the support of small business partners to provide water and sewer improvements through environmental assessment permitting public involvement surveying property mapping plat preparation geotechnical and final design.
Role: Project Engineer

City of Gastonia, Old Willis School Road Pump Station & Forcemain Capacity Assessment, Gastonia, NC
The existing Dallas-Stanley Pump Station and Old Willis School Road Pump Station are manifolded prior to their outfall to the Long Creek WWTP. The Old Willis School Road Pump Station is nearing its design capacity based on additional allocations resulting from growth and requires an assessment of how to expand the pump station, impacts on downstream forcemain capacity and operation of the manifolded system. The overarching goal of this assessment is to leverage existing knowledge of the existing systems to develop implementable solutions for the near-term and long-term needs by: Understanding the existing system dynamics and interdependencies. Assessing the remaining capacity of the existing system. Identifying the options to increase capacity of the existing system.
Role: Project Engineer

David McPherson, Ph.D, PE

Pipeline Design Review

David specializes in large-diameter pipeline and pump station design. He is internationally recognized as a designer of hydraulic transient control systems and appurtenances, and has worked with some of our most important U.S. clients. David was most recently project manager/principal engineer for the design of 15 miles of 108-inch diameter pipeline for the Tarrant Regional Water District/Dallas Water Utility Integrated Pipeline Project in Texas. In addition, David is active in both the ASCE and the AWWA. He was the Technical Chair of 2014 ASCE International Pipeline Conference in Portland, Oregon and presently sits on the advisory committee for Air Valve Stainless Steel as well as for PE Pipeline and is Vice Chair of the ASCE committee for Hydraulic Transient Analysis and Control. Finally David is also a sitting member of the ASCE Pipeline Planning and Installation committee and is the author of over twenty articles and conference papers.

OFFICE LOCATION	Charlotte, NC
EDUCATION	Ph.D, Civil Engineering, University of Toronto MS & BS, Civil Engineering, University of Kentucky
REGISTRATIONS	Professional Engineer: NC, OH, CO, MD, NV, OR, GA, TX
TENURE *(INDUSTRY | HDR)*	28 Yrs | 7 Yrs

Relevant Experience

Union County, Yadkin Regional Raw Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Senior Hydraulics and Pipeline Consultant

Union County, Yadkin Regional Finished Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Senior Hydraulics and Pipeline Consultant

Charlotte Water, Stowe Regional WRRF, Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for this new greenfield facility.
Role: Senior Hydraulics and Pipeline Consultant

Charlotte Water, Mount Holly Pumping Station and Force Main and Stowe Headworks and Influent Pumping Station, Owner's Advisor, Mt Holly & Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for complex project.
Role: Senior Hydraulics and Pipeline Consultant

Town of Cary, Raw Water Transmission, Cary, NC
As part of HDR's ongoing work for the Cary/Apex WTF Phase III Expansion project the Preliminary Engineering Report recommended an additional transmission main from Jordan Lake to the WTF in order to provide needed redundancy. HDR was retained to provide an initial study, a PER, final design, permitting, and construction phase services for the additional 42-inch parallel raw water transmission parallel pipeline.
Role: Hydraulic Designer

City of Greensboro, Megasite Water and Wastewater Conveyance, Greensboro, NC
HDR is serving as the lead firm and single-point of contact for the City with the support of small business partners to provide water and sewer improvements through environmental assessment permitting public involvement surveying property mapping plat preparation geotechnical and final design.
Role: Hydraulic Designer

PAUL MOURT, PE

Value Engineering

Paul is a respected professional engineer with significant experience in project delivery, linear design, and pipeline rehabilitation. He has experience in the preparation of design calculations, development of bid drawings and specifications, and development of cost estimates for pipeline and pump station projects. Paul has served as a manager of projects involving large diameter sewers and combined sewer overflows. He performs technical review of alternative rehabilitation techniques for large diameter water mains.

OFFICE LOCATION	Plymouth, PA
EDUCATION	MS, Civil Engineering, Rutgers University BS, Civil Engineering Lafayette College
REGISTRATIONS	Professional Engineer: PA, DE, NJ, FL
TENURE *(INDUSTRY | HDR)*	37 Yrs | < 1 Yr

Relevant Experience

Tualatin Valley Water District, Willamette Water Supply Program PLM 1.0 Pipeline Design, Beaverton OR
HDR was hired to perform design, bidding phase services, and services during construction for PLM_1.0, a section of the Willamette Water Supply Program which includes 3 phases (construction contracts, PLM_1.1, 1.2, and 1.3) of pipeline design and construction services.
Role: Project Engineer

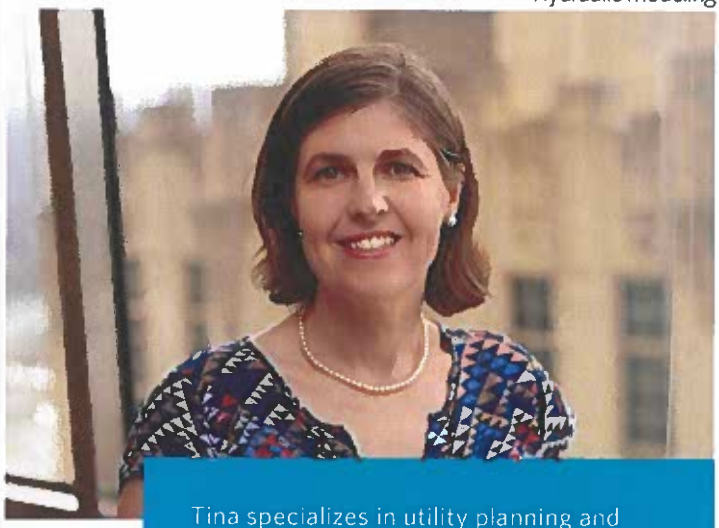
New Jersey American Water, Pinebrook Tank, Booster Pumping State and Transmission Main - Fort Monmouth, Monmouth County, NJ
Detailed design, permitting and bidding phase services for the Pinebrook Tank, Booster Pumping Station and related distribution and transmission main system connections. NJAW has presented preliminary site renderings and layout of the Pinebrook Tank and Booster Pump Station (BPS) to Fort Monmouth Economic Revitalization Authority (FMERA) and Borough of Eatontown and has initiated the purchase of Block 601, Lot 1, currently being rezoned. Project improvements include a 2 million-gallon (MG) ground storage tank, above ground BPS and approximately 4,500 LF of 24" diameter new transmission main. The proposed Pinebrook Tank and BPS project will improve NJAW's existing pressure zones serving Monmouth County. The BPS project, in conjunction with the proposed 2 MG ground storage tank, will allow NJAW to increase flow and pressure to existing and future connections.
Role: Project Engineer

Delaware County Regional Water Authority, DELCORA PS Design, Chester, PA
The Delaware County Regional Water Quality Control Authority (DELCORA) is undertaking an ambitious program to convey all Eastern Service Area (ESA) flows to their Western Regional Treatment Plant and eliminate the need to route flows to Philadelphia Water Department's Southwest Water Pollution Control Plant (SWWPCP) for treatment. This project is the upgrades to the following pump stations: Darby Creek, Muckinipates, Central Delaware, as well as the design of the new EQ Basin.
Role: Value Engineer

Division of Sewerage and Drainage, Krieger Ct Storm Water Improvements, Columbus, Oh
Project includes review of existing detention basin design, proposed alternative analysis, design of alternative including design of 5,000 lf relief sewer.
Role: Value Engineer

TINA WHITFIELD, PE, ENV SP

Hydraulic Modeling



Tina specializes in utility planning and hydraulic modeling with extensive experience in master planning studies. Tina has managed the development of hydraulic models for water and collection systems from small rural developments to major urban centers. She is familiar with the latest hydraulic modeling software and GIS applications for analysis of both system hydraulics and water quality. Her work has included assisting in model selection, developing input information, integrating existing GIS information into model demand and load development, model calibration, and conducting existing system and future system analysis for CIP development and project privatization.

OFFICE LOCATION	Winston-Salem, NC
EDUCATION	BS, Civil Engineering, Georgia Institute of Technology
REGISTRATIONS	Professional Engineer: NC, GA, MT
TENURE *(INDUSTRY | HDR)*	24 Yrs | 19 Yrs

Relevant Experience

Winston-Salem City/County Utilities, Collection System & Distribution System Improvements, Winston-Salem, NC
HDR was hired to reduce sanitary sewer overflows, increase operational efficiency, and help prioritize and schedule collection system preventatives maintenance measures. HDR performed operational assessments, sewer cleaning program optimization and tools, fat, oils, and grease support, closed-circuit television program support, condition assessment program support, capacity assessment program support, management optimization, capital improvements program development and privatization, and permitting assistance.
Role: Hydraulic Modeler

Union County, Yadkin Regional Raw Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Hydraulic Modeler

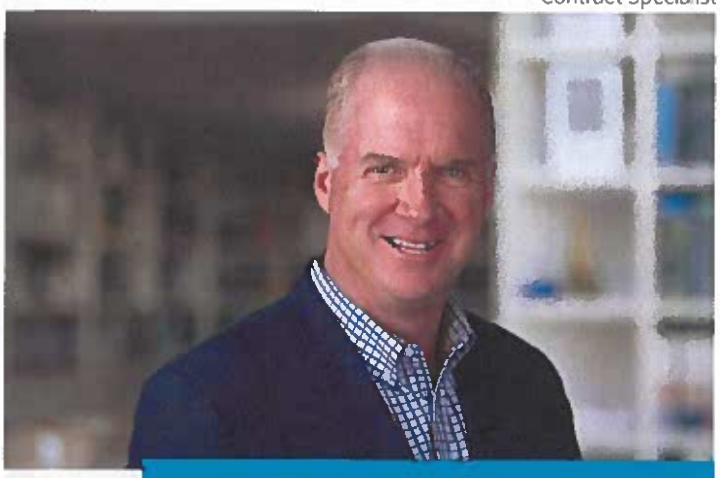
Union County, Yadkin Regional Finished Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Hydraulic Modeler

Town of Cary, Raw Water Transmission, Cary, NC
As part of HDR's ongoing work for the Cary/Apex WTF Phase III Expansion project the Preliminary Engineering Report recommended an additional transmission main from Jordan Lake to the WTF in order to provide needed redundancy. HDR was retained to provide an initial study, a PER, final design, permitting, and construction phase services for the additional 42-inch parallel raw water transmission parallel pipeline.
Role: Hydraulic Modeler

Charlotte Water, Clarke Creek Pump Station and Forcemain, Charlotte, NC
This PDB project will construct a new 2.5 MGD pumping station and 6 miles of force main to provide development capacity for Charlotte Water within the Clarke Creek Basin. Additional improvements will be implemented at the McDowell Creek Wastewater Treatment Plant to support the increase in flow from the Clarke Creek Pumping Station.
Role: Hydraulic Modeler

JIM UPTON, PE

Contract Specialist



Jim is a construction contracts specialist and commercial manager with a breadth of experience across water segments, as well as commercial building and transportation projects. Previous to HDR, Jim spent several years working as a Project Manager and Project Controls specialist for general contractors on large-scale traditional design-bid-build and design-build projects.

OFFICE LOCATION	Denver, CO
EDUCATION	MBA, Finance, Regis University BS, Construction Management, Colorado State University
REGISTRATIONS	Professional Engineer: CO
TENURE *(INDUSTRY | HDR)*	42 Yrs | 1 Yr

Relevant Experience

Charlotte Water, Owner's Advisor, Stowe Regional WRRF, Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for this new greenfield facility.
Role: Contract Specialist

Charlotte Water, Mount Holly Pumping Station and Force Main and Stowe Headworks and Influent Pumping Station, Owner's Advisor, Mt Holly & Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for complex project.
Role: Contract Specialist

Union County, Yadkin Regional Raw Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Contract Specialist

Union County, Yadkin Regional Finished Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Contract Specialist

Johnston County, T.G. Broome WTP Expansion, Owner's Advisor, Johnston County, NC
This PDB project includes an upgrade of the existing plant from 14.0 MGD to 18.0 MGD including a new electrical service, expanded operations space, and additional solids handling capacity. The project includes an early work package prior to the GMP to meet a tight schedule and careful coordination with the plant staff to provide proper maintenance of plant operations during construction.
Role: Contract Specialist

Charlotte Water, Clarke Creek Pump Station and Force Main, Charlotte, NC
This PDB project will construct a new 2.5 MGD pumping station and 6 miles of force main to provide development capacity for Charlotte Water within the Clarke Creek Basin. Additional improvements will be implemented at the McDowell Creek Wastewater Treatment Plant to support the increase in flow from the Clarke Creek Pumping Station.
Role: Contract Specialist

JEFFRY GIDDINGS, PE, CPT

Corrosion Controls

Jeff has extensive experience evaluating corrosion protection methods and providing design of corrosion mitigation systems for wastewater projects. His background has included performing soil corrosivity studies and evaluating corrosion protection methods. He has performed pipeline condition assessments using a variety of testing methods, including numerous external direct assessments and failure analyses. He has experience dealing with pipeline electrical continuity, alternating and stray current surveys, and internal pipe inspections.

OFFICE LOCATION	Omaha, NE
EDUCATION	BS, Mechanical Design, University of Wyoming
REGISTRATIONS	Professional Engineer: MN, SD, OK, WY, NE, OH, TX, NM, ND, IA, GA
TENURE *(INDUSTRY | HDR)*	35 Yrs | 11 Yrs

Relevant Experience

Town of Cary, Raw Water Transmission, Cary, NC
As part of HDR's services for the Cary/Apex WTF Phase III Expansion project the Preliminary Engineering Report recommended an additional transmission main from Jordan Lake to the WTF in order to provide needed redundancy. HDR was retained to provide an initial study, a PER, final design, permitting, and construction phase services for the additional 42-inch parallel raw water transmission parallel pipeline.
Role: Corrosion Engineer

Winston-Salem City/County Utilities, Collection System Improvement Program Management, Winston-Salem, NC
The Collection System Improvement Program is a multi-year program for the City/County Utility Commission, an agency of the City of Winston-Salem, to reduce sanitary sewer overflows (SSOs), increase operational efficiency, and help prioritize and schedule collection system preventative maintenance measures. The program management approach focuses first on optimizing the operation of the collection system, which involves a longer-term condition assessment program to identify and prioritize repairs, rehabilitation, and replacement of lines that would improve the performance of the collection system.
Role: Corrosion Engineer

Tarrant Regional Water District, Tarrant Regional Water District (TRWD) Integrated Pipeline (IPL), Dallas, TX
TRWD, with the City of Dallas, is currently engaged in planning designing and implementing a 350-mgd raw water transmission pipeline system from Lake Palestine to Lake Benbrook. HDR was selected to plan and design a 21-mile 84-inch-diameter section of the pipeline. Engineering services included: project management design criteria confirmation preliminary engineering final design documentation bid phase services and design services during construction.
Role: Corrosion Engineer

City of Omaha, Omaha Combined Sewer Overflow (CSO) Program Long Term Control Plan, Omaha, NE
As part of the City's CSO Program, HDR conducted SS study preliminary and final design and prepared a Basis of Design report of the proposed sewer separation in the Martha Street Basin. Included approximately 240 acres of drainage area located northeast of I-80 and 13th Street. Approximately 10 blocks of new sanitary sewer will be constructed in the existing residential neighborhood. Sanitary sewers will be located within the existing 40- to 60-FT rights-of-way.
Role: Corrosion Engineer

BRIAN KEANEY, PE

Geotechnical

Brian has 29 years of experience and manages and executes geotechnical investigations, sampling, testing, roadway and structure foundation design recommendations. Many of these efforts are related to Design-Build projects. He routinely serves as the HDR contact with structural engineers to understand project challenges and the agreed-upon design approach to customize geotechnical engineering design.

OFFICE LOCATION	Raleigh, NC
EDUCATION	MS & BS, Civil Engineering, North Carolina State University
REGISTRATIONS	Professional Engineer: NC, SC, GA, NY, VA
TENURE *(INDUSTRY | HDR)*	29 Yrs | 11 Yrs

Relevant Experience

Union County, Yadkin Regional Raw Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Geotechnical

Union County, Yadkin Regional Finished Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Geotechnical

City of Greensboro, Megasite Water and Wastewater Conveyance, Greensboro, NC
HDR is serving as the lead firm and single-point of contact for the City with the support of small business partners to provide water and sewer improvements through environmental assessment permitting public involvement surveying property mapping plat preparation geotechnical and final design.
Role: Geotechnical

Town of Cary, Raw Water Transmission, Cary, NC
As part of HDR's services for the Cary/Apex WTF Phase III Expansion project the Preliminary Engineering Report recommended an additional transmission main from Jordan Lake to the WTF in order to provide needed redundancy. HDR was retained to provide an initial study, a PER, final design, permitting, and construction phase services for the additional 42-inch parallel raw water transmission parallel pipeline.
Role: Geotechnical

Raleigh Water, Durant Road Water Main, Raleigh, NC
HDR is providing design services for the 36" water transmission main for Raleigh Water. HDR is assist in acquiring easements, preparing easement plats, prepare 30%, 60%, 90%, and RFC Construction Drawings and Specifications. HDR is also providing MOT, topographic survey and SUE's for the route of the 36" water main along Durant Road. Preparing and submit Erosion and Sedimentation Control, CSX Railroad, NCDEQ, COE, NCDOT, and City of Raleigh water and sewer permit applications and fees.
Role: Geotechnical

City of Winston-Salem, NC, Little Creek Outfall Improvements, Winston-Salem, NC
HDR provided design permitting and construction administration support for the replacement of 12,800 LF of sanitary sewer.
Role: Geotechnical

SCOTT MITCHELL

Senior Pipeline Inspector

Scott is a Resident Project Representative with more than 33 years of progressive experience in the construction industry. He has a wide variety of experience with disciplines ranging from electrical to civil and has a history of building great relationships with clients and positively engaging citizens associated with projects. Scott has experience in coastal geography and associated construction challenges.

OFFICE LOCATION	Raleigh, NC
EDUCATION	BS, Construction Management, East Carolina University
REGISTRATIONS	N/A
TENURE *(INDUSTRY | HDR)*	33 Yrs | 8 Yrs

Relevant Experience

Cape Fear Public Utility Authority, Richardson Raw Water Supply, Chemistry, and Membranes, Wilmington, NC
Cape Fear Public Utility Authority (CFPUA) operates the Richardson Water Treatment Plant (RWTP), located in Wilmington, North Carolina. The RWTP uses nanofiltration (NF) membranes to treat water from two separate fresh water aquifers: Castle Hayne and Peedee. HDR was asked to assist with conducting a root cause analysis and identify any mitigation measures related to the decline in concentrate pH. Additionally, HDR performed a holistic assessment of the RWTP NF system by examining operating data, documentation, and current management procedures to evaluate the NF system's performance.
Role: Resident Project Representative

Winston-Salem City/County Utilities, Collection System Improvement Program Management, Winston-Salem, NC
The Collection System Improvement Program is a multi-year program for the City/County Utility Commission, an agency of the City of Winston-Salem, to reduce sanitary sewer overflows (SSOs), increase operational efficiency, and help prioritize and schedule collection system preventative maintenance measures. The program management approach focuses first on optimizing the operation of the collection system, which involves a longer-term condition assessment program to identify and prioritize repairs, rehabilitation, and replacement of lines that would improve the performance of the collection system.
Role: Resident Project Representative

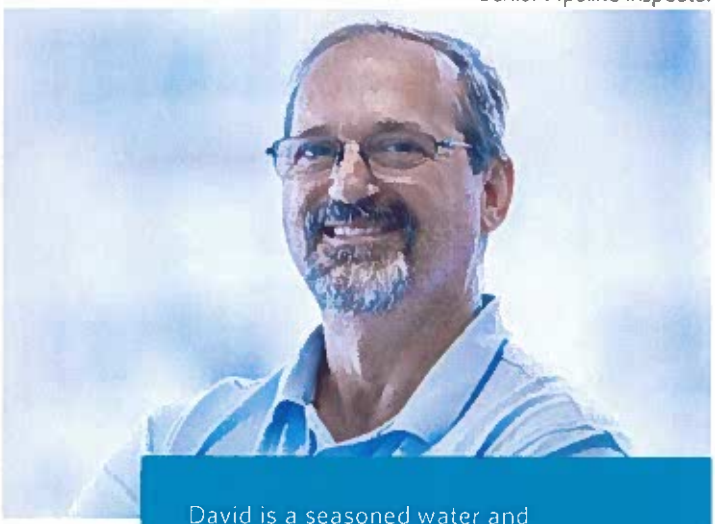
Town of Cary, Raw Water Transmission, Cary, NC
As part of HDR's services for the Cary/Apex WTF Phase III Expansion project the Preliminary Engineering Report recommended an additional transmission main from Jordan Lake to the WTF in order to provide needed redundancy. HDR was retained to provide an initial study, a PER, final design, permitting, and construction phase services for the additional 42-inch parallel raw water transmission parallel pipeline.
Role: Co-Resident Project Representative

York County, New Heritage Pump Station Design, York County, SC
HDR led the design and construction services for the New Heritage Drainage Basin in the northeast portion of York County. The service area is experiencing substantial growth from the Charlotte metro area driving several of the wastewater system assets to their design capacity.
Role: Resident Project Representative

Cape Fear Public Utility Authority, Six Pump Station Replacement and Forcemain Rehabilitation, Wilmington, NC
Provided design and construction services for the replacement of six existing package pumping stations were over 30 years old and approaching the end of their useful service life, with five submersible pumping stations and one suction lift station. The new pumping stations were constructed adjacent to the existing sites and included the demolition of the existing stations. The project also included rehabilitation/replacement of the associated force mains.
Role: Resident Project Representative

DAVID DUFF

Senior Pipeline Inspector



David is a seasoned water and wastewater operator and resident project representative. His 40-year career led him to work at HDR, where he brings a unique skill set to our field operations. His skills and experiences allow him to interface well with contractors and meet the expectations of those who will be using the facilities being built.

OFFICE LOCATION	Charlotte, NC
EDUCATION	BS, Ministry, Point University, (Atlanta Christian College)
REGISTRATIONS	N/A
TENURE *(INDUSTRY | HDR)*	40 Yrs | 1 Yrs

Relevant Experience

Charlotte Water, Owner's Advisor, Stowe Regional WRRF, Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for this new greenfield facility.
Role: Resident Project Representative

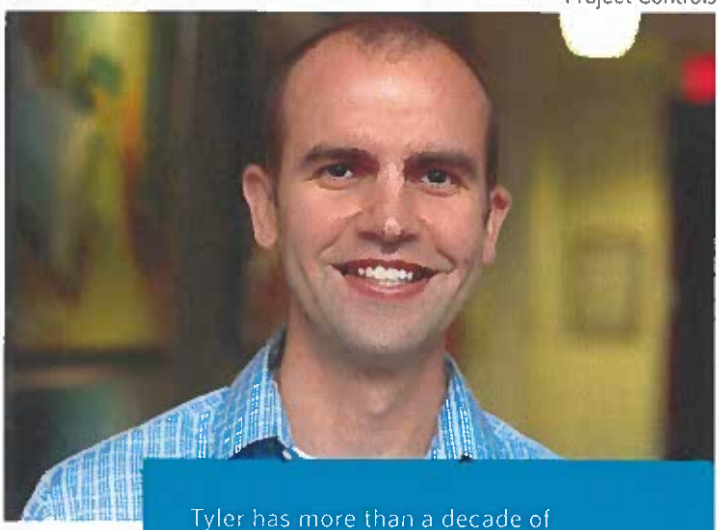
Union County, Yadkin Regional Raw Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Resident Project Representative

Union County, Yadkin Regional Finished Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Resident Project Representative

United States Department of Defense (USDOD) - Kellogg, Brown and Root/SEII, Operation Iraqi Freedom/Operation New Dawn/LOGCAP IV *, Iraq (*experience with another firm)
David served as the ROWPU operator and RBC operator (then foreman) for this project to convert salt water to potable water and wastewater to near-potable water on a desert site in Iraq. He managed material and personnel, while maintaining the highest standards of efficiency and service to the military. During his years on this project, David troubleshooted and corrected water storage issues that would've resulted in fines/penalties; trained operators and corrected maintenance problems; completed and passed all US Government (USG) audits; and corrected operational and maintenance problems at the wastewater plant, while maintaining compliance with all USG ordinances and Iraqi environmental requirements - all while operating in a desert war zone.
Role: Plant Operator/Plant Foreman

TYLER LEBEN, PE

Project Controls



Tyler has more than a decade of experience in successfully delivering large infrastructure projects across disciplines. Most recently he has been and continues to be actively involved in Union County's Yadkin Regional Water Supply Project including permitting, design, and construction - all while leading the review of design-builder produced pay applications, request for change notices, and allowance requests. Tyler has a hands-on, thorough review approach to ensure the successful delivery of projects via monitoring project controls.

OFFICE LOCATION	Charlotte, NC
EDUCATION	MBA, University of South Carolina MS, Civil Engineering, University of Cincinnati BS, Civil Engineering, University of Cincinnati
REGISTRATIONS	Professional Engineer: NC
TENURE *(INDUSTRY | HDR)*	12 Yrs | 10 Yrs

Relevant Experience

Charlotte Water, Owner's Advisor, Stowe Regional WRRF, Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for this new greenfield facility.
Role: Access Roads Project Manager

Charlotte Water, Mount Holly Pumping Station and Force Main and Stowe Headworks and Influent Pumping Station, Owner's Advisor, Mt Holly & Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for complex project.
Role: Assistant Project Manager

Union County, Yadkin Regional Raw Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Program Controls

Union County, Yadkin Regional Finished Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Program Controls

SABRINA COLÓN

Strategic Communications

Working with local governments and non-profits, Sabrina bring more than 14 years of specialized experience in strategic planning, public involvement, brand management, community engagement, marketing, and event planning. Prior to joining HDR, she served as a Senior Strategic Communications and Community Engagement Specialist for the City of Charlotte, providing communications and marketing strategy for the general Community Investment Plan, the City's long-range capital investment program designed to meet the current and future needs of a growing community.

OFFICE LOCATION	Charlotte, NC
EDUCATION	BA, Communications & Journalism, University of North Carolina at Charlotte
REGISTRATIONS	N/A
TENURE *(INDUSTRY | HDR)*	14 Yrs | 3 Yrs

Relevant Experience

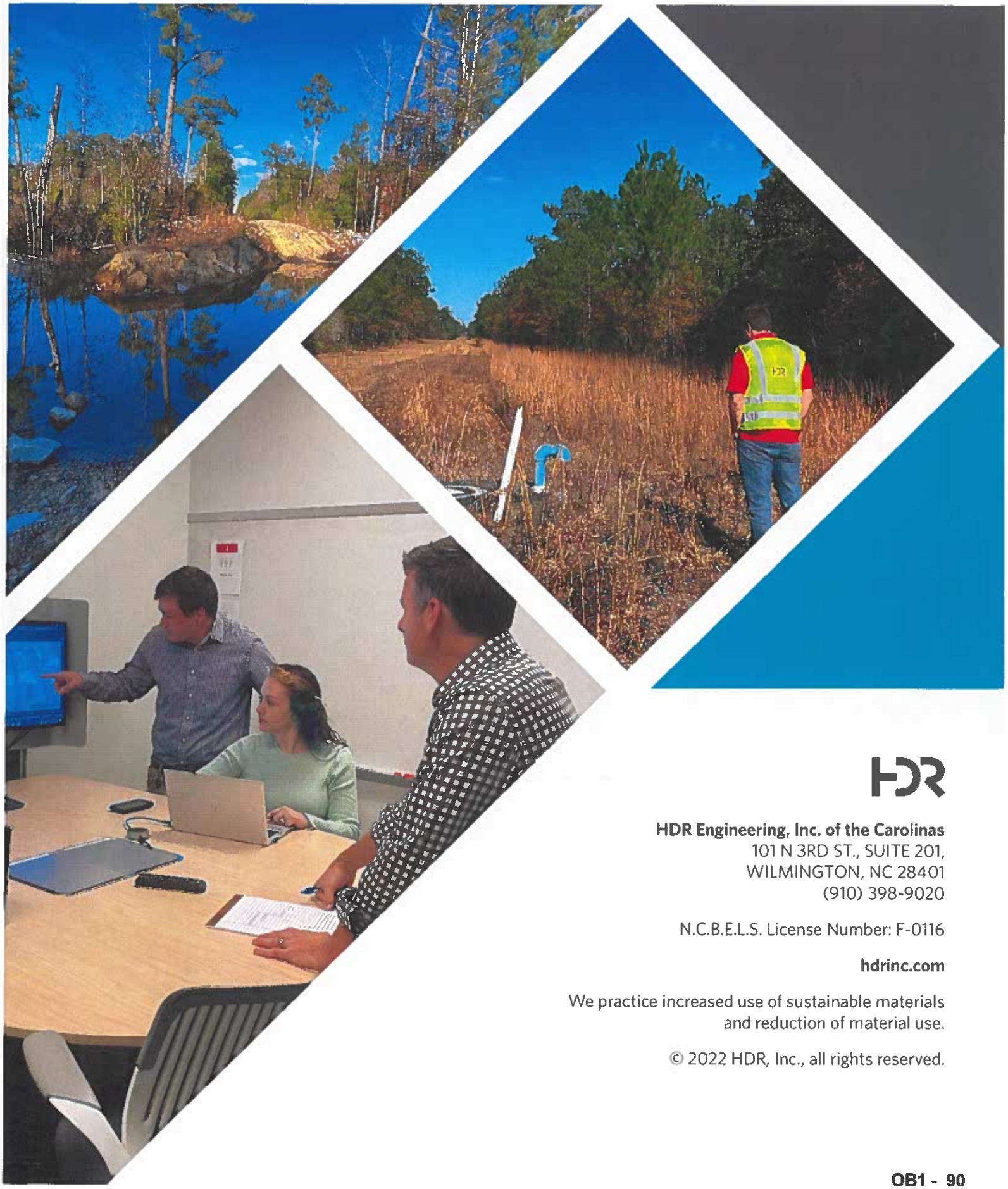
Charlotte Water, Owner's Advisor, Stowe Regional WRRF, Charlotte, NC
HDR led the project criteria development, PDB contract development, PDB contract procurement, value engineering, contract negotiations, and current multi-stage GMP negotiations for this new greenfield facility.
Role: Strategic Communications and Public Engagement Lead

Union County, Yadkin Regional Raw Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Strategic Communications

Union County, Yadkin Regional Finished Water Infrastructure, Union County, NC
HDR led the initial planning, project criteria development, delivery model selection, PDB contract development, PDB contract procurement, contract negotiations, and GMP negotiations for a new Water Treatment Plant and finished water conveyance.
Role: Strategic Communications

Winston-Salem City/County Utilities, Collection System Improvement Program Management, Winston-Salem, NC
The Collection System Improvement Program is a multi-year program for the City/County Utility Commission, an agency of the City of Winston-Salem, to reduce sanitary sewer overflows (SSOs), increase operational efficiency, and help prioritize and schedule collection system preventative maintenance measures. The program management approach focuses first on optimizing the operation of the collection system, which involves a longer-term condition assessment program to identify and prioritize repairs, rehabilitation, and replacement of lines that would improve the performance of the collection system.
Role: Strategic Communications

Western Intake Partnership (WIP), Program Manager for a New Regional Water Treatment Plant and Associated Infrastructure, Chatham County, NC
HDR is serving as the Program Manager/Owner's Advisor for this large-scale drinking water program in the Triangle area.
Role: Public Outreach



HDR Engineering, Inc. of the Carolinas
101 N 3RD ST., SUITE 201,
WILMINGTON, NC 28401
(910) 398-9020

N.C.B.E.L.S. License Number: F-0116

hdrinc.com

We practice increased use of sustainable materials and reduction of material use.

New Business (NB1)	Lower Cape Fear Water & Sewer Authority

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM HOLLOMAN, EXECUTIVE DIRECTOR

Date: January 9, 2023

Re: Presentation of Annual Audit Report for Fiscal Year Ending June 30, 2022 (Thompson, Price, Scott, Adams & Co., P.A.)

A representative from the Authority's auditor, Thompson, Price, Scott, Adams & Co., P.A., will present the *Annual Financial Report for the Year Ended June 30, 2022*.

The complete report is also available for members as a hard copy or PDF file if desired.

Action Requested: For information purposes only

LOWER CAPE FEAR WATER AND SEWER AUTHORITY

ANNUAL FINANCIAL REPORT
For the Year Ended June 30, 2022

LOWER CAPE FEAR WATER & SEWER AUTHORITY
1107 NEW POINTE BLVD., SUITE 17
LELAND, NORTH CAROLINA 28451

AUTHORITY BOARD OF DIRECTORS

CHARILE RIVENBARK, CHAIRMAN	CITY OF WILMINGTON
NORWOOD BLANCHARD, VICE CHAIRMAN	PENDER COUNTY
HARRY KNIGHT, SECRETARY	NEW HANOVER COUNTY
PATRICK DEVANE, TREASURER	BLADEN COUNTY
PHIL NORRIS, ASSISTANT TREASURER	BRUNSWICK COUNTY
WAYNE EDGE	BLADEN COUNTY
ROB ZAPPLE	NEW HANOVER COUNTY
SCOTT PHILLIPS	BRUNSWICK COUNTY
JACKIE NEWTON	PENDER COUNTY
BILL SAFFO	CITY OF WILMINGTON
CHRIS SMITH	COLUMBUS COUNTY
WILLIAM SUE	BRUNSWICK COUNTY
FRANK WILLIAMS	BRUNSWICK COUNTY
AL LEONARD	COLUMBUS COUNTY

TIM HOLLOMAN, EXECUTIVE DIRECTOR

DANIELLE HERTZOG, ADMINISTRATIVE ASSISTANT

LOWER CAPE FEAR WATER AND SEWER AUTHORITY
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June 30, 2022

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FINANCIAL SECTION

Thompson, Price, Scott, Adams & Co., P.A.
4024 Oleander Drive Suite 3
Wilmington, North Carolina 28403
Telephone (910) 791-4872
Fax (910) 239-8294

Independent Auditor's Report

To the Chairman of the Board
and Members of the Board of Directors
Lower Cape Fear Water and Sewer Authority
Leland, North Carolina

Report on the Audit of Financial Statements

Opinions

We have audited the accompanying financial statements of the business-type activities, each major fund, and the aggregate remaining fund information of the Lower Cape Fear Water and Sewer Authority as of and for the year ended June 30, 2022, and the related notes to the financial statements, which collectively comprise Lower Cape Fear Water and Sewer Authority's basic financial statements as listed in the table of contents.

In our opinion, based upon our audit the accompanying financial statements referred to above present fairly, in all material respects, the respective financial position of the, the business-type activities, each major fund, and the aggregate remaining fund information of Lower Cape Fear Water and Sewer Authority as of June 30, 2022, and the respective changes in financial position, and cash flows, for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Lower Cape Fear Water and Sewer Authority and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Responsibilities of Management for the Audit of the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raises substantial doubt about the Lower Cape Fear Water and Sewer Authority's ability to continue as a going concern for the twelve months

beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free of material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect material statement when it exists.

The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS we

- exercised professional judgement and maintained professional skepticism throughout the audit.
- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsible to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Lower Cape Fear Water and Sewer Authority's internal control. Accordingly, no such opinion is expressed.
- evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Lower Cape Fear Water and Sewer Authority's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis, the Local Government Employees' Retirement System's Schedules of the Proportionate Share of the Net Pension Asset (Liability) presented to supplement the basic financial statements. Such information is the responsibility of management, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of the financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consist of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Lower Cape Fear Water and Sewer Authority's basic financial statements. The combining and individual fund financial statements, budgetary schedules, other schedules, are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America by us. In our opinion, based on our audit, the procedures performed as described above, the combining and individual fund financial statements, budgetary schedules, other schedules are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Thompson, Price, Scott, Adams & Co., PA
Wilmington, North Carolina
October 18, 2022

MANAGEMENT'S DISCUSSION AND ANALYSIS

Management's Discussion and Analysis

As management of the Lower Cape Fear Water and Sewer Authority (the "Authority"), we offer readers of the Lower Cape Fear Water and Sewer Authority's financial statements this narrative overview and analysis of the financial activities of the Lower Cape Fear Water and Sewer Authority for the fiscal year ended June 30, 2022. We encourage readers to read the information presented here in conjunction with additional information that we have furnished in the Authority's financial statements, which follow this narrative.

Financial Highlights

- The assets and deferred outflows of resources of the Lower Cape Fear Water and Sewer Authority exceeded its liabilities and deferred inflows of resources at the close of the fiscal year by $25,989,271 (net position).
- The Authority's total net position increased by $1,295,506.
- As of the close of the current fiscal year, the Lower Cape Fear Water and Sewer Authority reported ending fund balances as follows:

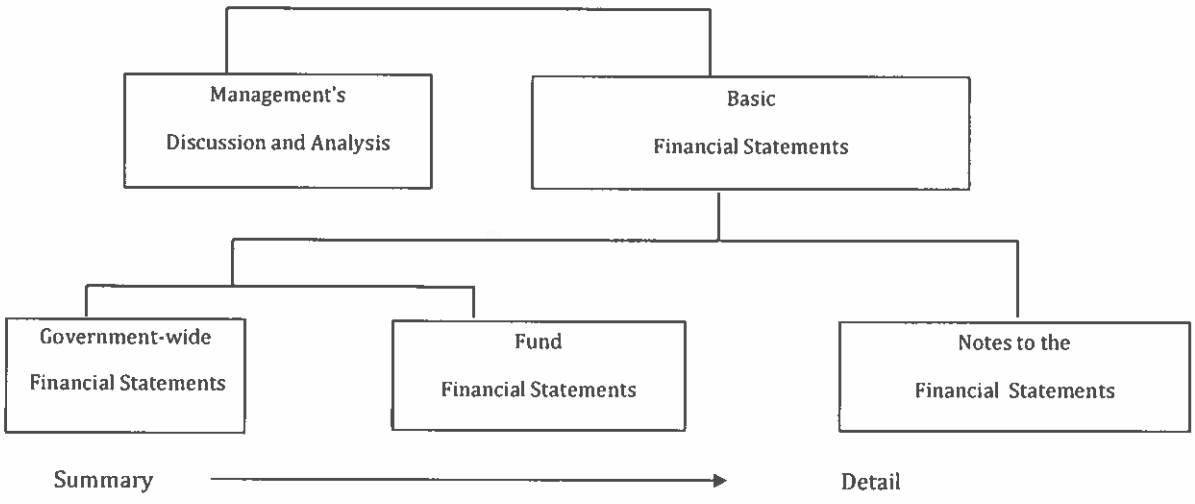
Renewal and Replacement Fund	$	192,454
Right of Way Fund	$	281,426
System Development Charge Fund	$	14
Enterprise Capital Project Fund	$	289,737

- The Lower Cape Fear Water and Sewer Authority's total debt decreased by $1,803,043 during the current fiscal year due to normal principal payments.

Overview of the Financial Statements

The Authority's primary mission is to provide raw water services to various customers in the Lower Cape Fear region. The Authority does not provide other general purpose government services or programs. As such, the Authority is considered to be, and therefore presents the Authority's financial report, as a stand-alone enterprise fund.

Required Components of Annual Financial Report
Figure 1



Basic Financial Statements

The first three documents (Exhibits A, B, and C) are the **basic financial statements.** They provide both short and long-term information concerning the Authority's financial status. The next section is the **notes** that provide a narrative and data explanation regarding selected financial statement presentations. The next five documents (Schedules 1-5) are **supplemental information** that focus on individual funds: one enterprise fund and four project funds.

Government-Wide Financials Statements

The government-wide financial statements are designed to provide readers with a broad overview of the Authority's finances, similar in format to a financial statement of a private-sector business. The government-wide statements provide short and long-term information about the Authority's financial status as a whole.

The government-wide statements report the Authority's net position and how it has changed. Net position is the difference between the Authority's assets and deferred outflows of resources and total liabilities and deferred inflows of resources. Measuring net position is one way to gauge the Authority's financial condition.

The government-wide statements show business-type activities, the only type of activities the Authority has. Business-type activities are those that the Authority charges customers to provide. These include water services offered by the Lower Cape Fear Water and Sewer Authority.

Fund Financial Statements

The fund financial statements provide a more detailed look at the Authority's most significant activities. A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The Lower Cape Fear Water and Sewer Authority, like all over governmental entities in North Carolina, uses fund accounting to ensure and reflect compliance (or non-compliance) with finance-related legal requirements, such as the General Statutes or the Authority's budget ordinance. All of the funds of the Lower Cape Fear Water and Sewer Authority are proprietary funds.

Proprietary Funds. Enterprise funds are used to report the same functions presented as business-type activities in the government-wide financial statements. The Lower Cape Fear Water and Sewer Authority uses enterprise funds to account for its water activity.

Notes to the Financial Statements. The notes provide additional information that is essential to a full understanding of the data provided in the financial statements. The notes to the financial statements can be found following Exhibit C of this report.

Other Information. In addition to the basic financial statements and accompanying notes, this report includes certain required supplementary information concerning Lower Cape Fear Water and Sewer Authority's progress in funding its obligation to provide pension benefits to its employees.

Financial Analysis

Lower Cape Fear Water and Sewer Authority's Net Position
Figure 2

	Business-Type Activities	
	2022	2021
Assets:		
Current and other assets	$ 4,019,986	$ 3,279,953
Capital assets	41,029,471	41,884,611
Total assets	45,049,457	45,164,564
Deferred outflows of resources	69,607	46,823
Liabilities:		
Current liabilities	1,696,564	2,005,816
Long-term liabilities	17,415,043	18,511,806
Total liabilities	19,111,607	20,517,622
Deferred inflows of resources	18,186	-
Net position:		
Net investment in capital assets	22,530,057	21,582,154
Unrestricted	3,459,214	3,111,611
Total net position	$ 25,989,271	$ 24,693,765

As noted earlier, net position may serve over time as one useful indicator of the Authority's financial condition. The assets and deferred outflows of resources of the Authority exceeded liabilities and deferred inflows by $25,989,271 as of June 30, 2022. The Authority's net position increased by $1,295,506 for the fiscal year ended June 30, 2022. However, the largest portion of net position $22,530,057 (86.96%) reflects the Authority's net investment in capital assets (e.g. land, buildings, machinery and equipment). The Lower Cape Fear Water and Sewer Authority uses these capital assets to provide services to customers; consequently, these assets are not available for future spending. Although the Authority's net investment in capital assets is reported net of the outstanding related debt, the resources needed to repay that debt must be provided by other sources since the capital assets cannot be used to liquidate these liabilities. The remaining balance of $3,459,214 (13.31%) is unrestricted.

Several particular aspects of the Authority's financial operations positively influenced the total net position:

- Increase in charges for services.

Lower Cape Fear Water and Sewer Authority's Changes in Net Position
Figure 3

	Business-Type Activities	
	2022	2021
Revenues:		
Charges for Services	$ 7,472,215	$ 4,500,161
Other operating	114,314	55,833
Investment earnings	765	2,696
Other non-operating	19,683	1,133,995
Total revenues	7,606,977	5,692,685
Expenses:		
Operations	4,483,011	3,288,424
Depreciation and amortization	1,727,437	1,658,635
Interest and fees paid	101,023	76,268
Total expenses	6,311,471	5,023,327
Increase (decrease) in net position before transfers and capital contributions	1,295,506	669,358
Increase (decrease) in net position	1,295,506	669,358
Net position, July 1	24,693,765	24,024,407
Net position, June 30	$ 25,989,271	$ 24,693,765

Business-type activities: Business-type activities increased the Authority's net position by $1,295,506. Key element of this increase is as follows:

- Increase in charges for services.

Capital Asset and Debt Administration

Capital assets. The Lower Cape Fear Water and Sewer Authority's investment in capital assets as of June 30, 2022, totals $41,029,471 (net of accumulated depreciation). These assets include buildings, land, equipment, vehicles, and water system improvements.

Lower Cape Fear Water and Sewer Authority's Capital Assets
(net of depreciation)
Figure 4

	2022	2021
Land	$ 882,053	$ 882,053
Buildings	228,041	237,935
Vehicles	796,310	84,209
Equipment	520,946	465,358
Plant & distribution system	38,602,121	40,215,056
Total	$ 41,029,471	$ 41,884,611

Additional information on the Authority's capital assets can be found in the notes to the Basic Financial Statements.

Long-term Debt. As of June 30, 2022, the Authority had total bonded debt outstanding of $18,300,000. The changes in long-term debt for the year ended June 30, 2022 was as follows:

Revenue Bonds
Figure 5

	2022	2021
Revenue bonds	$ 18,300,000	$ 19,751,443
Direct Placement Installment Agreement	199,414	551,014
Total	$ 18,499,414	$ 20,302,457

Economic Factors and Next Year's Budgets and Rates

- The adopted budget for fiscal year 2021-2023 illustrates an increase in customer revenues due to an increase in the raw water rate from $0.3300 per 1,000 gallons to $.3600 per 1,000 gallons to provide for the required debt services through 2023.

- The Bladen Bluffs water treatment plant operated by Smithfield Farmland, Inc. will continue to experience increased costs as it enters into its 10th year of operations, but those costs are offset 100% by revenues received including all debt service.

Requests for Information

This report is designed to provide an overview of the Authority's finances for those with an interest in this area. Questions concerning any of the information found in this report or requests for additional information should be directed to Tim Holloman, Executive Director, Lower Cape Fear Water and Sewer Authority, 1107 New Pointe Blvd., Suite 17, Leland, NC 28451. You can also call (910)383-1919, or visit our website at www.lcfwasa.org for more information.

BASIC FINANCIAL STATEMENTS

Exhibit A

Lower Cape Fear Water and Sewer Authority
Statement of Fund Net Position
June 30, 2022

	Major Enterprise Fund
ASSETS	
Current assets:	
Cash and cash equivalents	$ 3,397,285
Accounts receivable, customers (net)	508,387
Accounts receivable, other	114,314
Total current assets	4,019,986
Non-current assets:	
Capital assets:	
Land and construction in progress	882,053
Other capital assets, net of depreciation	40,147,418
Total capital assets	41,029,471
Total assets	45,049,457
DEFERRED OUTFLOWS OF RESOURCES	
Pension Deferrals	55,450
Charge on refunding	14,157
Total deferred outflows of resources	69,607
LIABILITIES	
Current liabilities:	
Accounts payable and accrued liabilities	584,650
Compensated absences - current	2,500
Current portion of long-term debt	1,109,414
Total current liabilities	1,696,564
Non-current liabilities:	
Compensated absences payable	12,314
Net pension liability	12,729
Non-current portion of long-term debt	17,390,000
Total non-current liabilities	17,415,043
Total liabilities	19,111,607
DEFERRED INFLOWS OF RESOURCES	
Pension Deferrals	18,186
Total deferred inflow of resources	18,186
NET POSITION	
Net investment in capital assets	22,530,057
Unrestricted	3,459,214
Total net position	$ 25,989,271

The notes to the financial statements are an integral part of this statement.

Exhibit B

Lower Cape Fear Water and Sewer Authority
Statements of Revenues, Expenses, and
Changes in Fund Net Position
For the Fiscal Year Ended June 30, 2022

	Major Enterprise Fund
OPERATING REVENUES	
Charges for services	$ 7,472,215
Other operating revenue	114,314
Total operating revenues	7,586,529
OPERATING EXPENSES	
Operations and administration	4,483,011
Depreciation and amortization	1,727,437
Total operating expenses	6,210,448
Operating income (loss)	1,376,081
NONOPERATING REVENUES (EXPENSES)	
Investment earnings	765
Insurance Claim Proceeds	1,411
Interest and fees paid	(101,023)
Other non-operating revenues (expenses)	18,272
Total nonoperating revenues (expenses)	(80,575)
Income (loss) before transfers and capital contributions	1,295,506
Change in net position	1,295,506
Net position, beginning	24,693,765
Net position, ending	$ 25,989,271

The notes to the financial statements are an integral part of this statement.

Exhibit C

Lower Cape Fear Water and Sewer Authority
Statements of Cash Flows
For The Fiscal Year Ended June 30, 2022

	Major Enterprise Fund
Cash flows from operating activities:	
Cash received from customers	$ 7,375,995
Cash paid for goods and services	(3,784,138)
Cash paid to employees for services	(306,443)
Net cash provided (used) by operating activities	3,285,414
Cash flows from capital and related financing activities	
Acquisition of capital assets and construction	(872,297)
Principal paid on bonds and notes payable	(1,803,043)
Insurance Claim Proceeds	1,411
Other non-operating revenues	18,272
Interest and fees paid on bonds and notes	(101,023)
Net cash provided (used) by capital and related financing activities	(2,756,680)
Cash flows from investing activities:	
Interest on investments	765
Net cash provided	
Net increase (decrease) in cash and cash equivalents	529,499
Cash and cash equivalents:	
Beginning of year, July 1	2,867,786
End of year, June 30	$ 3,397,285
Reconciliation of operating income (loss) to net cash provided (used) by operating activities:	
Operating income (loss)	$ 1,376,081
Adjustments to reconcile operating income (loss) to net cash provided (used) by operating activities:	
Depreciation	1,727,437
(Increase) decrease in accounts receivable	(210,534)
Increase (decrease) in accounts payable & accrued liabilities	384,377
Increase (decrease) in net pension liability	4,153
Increase (decrease) in compensated absences	8,498
(Increase) decrease in deferred outflows of resources for pensions	(22,784)
Increase (decrease) in deferred inflows of resources for pensions	18,186
	1,909,333
Net cash provided (used) by operating activities	$ 3,285,414

The notes to the financial statements are an integral part of this statement.

NOTES TO THE FINANCIAL STATEMENTS

Lower Cape Fear Water and Sewer Authority
Notes to the Financial Statements
For the Year Ended June 30, 2022

I. Summary of Significant Accounting Policies

The accounting policies of the Lower Cape Fear Water and Sewer Authority (the "Authority") conform to generally accepted accounting principles as applicable to governments. The Authority does not have any discretely presented component units. The following is a summary of the more significant accounting policies:

A. Reporting Entity

The Authority is a public authority created under applicable laws of the State of North Carolina and has constructed a pipeline system that provides raw water to counties, adjacent public utility authorities, and industrial customers in southeastern North Carolina. The Authority's current customer mix is comprised as follows:

Customers with the ability to purchase raw water at June 30, 2022:

2 County Governments

2 Industries

1 Government Utility Authority

The Authority is not considered to be a joint venture under generally accepted accounting principles since the customers do not retain an ongoing financial interest (i.e., an equity interest in either assets or liabilities) or responsibility. It is considered a jointly governed organization.

Under the Enabling Acts, the Authority is authorized, among other things, to: (a) acquire, lease, construct, reconstruct, improve, extend, enlarge, equip, maintain, and operate water and sewer systems located within the service area of the Authority's membership; (b) issue revenue bonds of the Authority to pay the cost of such acquisition, construction, reconstruction, improvement, extension, enlargement, or equipment; and (c) fix, revise, charge, and collect rates, fees, and charges for the use of and for the services and facilities furnished by any water and sewer system operated by the Authority. The Authority cannot levy ad valorem taxes.

The Authority is governed by a board of fourteen members, each of who is appointed for a term of three years by the respective governing bodies of each of the Authority members. Each constituent member of the Authority appoints and is represented by two Board members with the exception of Brunswick County, which appoints four members.

B. Basis of Presentation

Government-wide Statements: The business-type activities are financed in whole or in part by fees charged to external parties. All activities of the Authority are considered business-type activities.

Fund Financial Statements: The fund financial statements provide information about the Authority's funds. Proprietary fund operating revenues, such as charges for services, result from exchange transactions associated with the principal activity of the fund. Exchange transactions are those in which each party receives and gives up essentially equal values. Non-operating revenues, such as contributions and investment earnings, result from non-exchange transactions or ancillary activities. The Authority has one fund category - proprietary funds.

Proprietary Funds

Enterprise Fund. Enterprise funds are used to account for those operations that (a) are financed and operated in a manner similar to private business enterprises, where the intent of the governing body is that the costs (expenses, including depreciation) of providing goods or services to the general public on a continuing basis, be financed or recovered primarily through user charges; or (b) where the governing body has decided that the periodic determination of revenues earned, expenses incurred and/or net income is appropriate for capital maintenance, public policy, management control, accountability or other purposes. The Authority operates as a singular enterprise fund, the Water and Sewer Fund. The Water and Sewer Fund (the operating fund) is consolidated with the Renewal and Replacement Fund, Right of Way Fund, System Development Fund, Enterprise Capital Project Fund, and Bladen Bluff Capital Project Fund.

The Enterprise Fund is considered a major fund for the year ending June 30, 2022.

C. Measurement Focus and Basis of Accounting

In accordance with North Carolina General Statutes, all funds of the Authority are maintained during the year using the modified accrual basis of accounting.

Government-wide and Proprietary Fund Financial Statements. The proprietary fund financial statements are accounted for on a flow of economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded at the time liabilities are incurred, regardless of when the related cash flows take place. Non-exchange transactions, in which the Authority gives (or receives) value without directly receiving (or giving) equal value in exchange, include grants, donations, and similar items. Revenue from grants and donations is recognized in the fiscal year in which all eligibility requirements have been satisfied.

Proprietary funds distinguish operating revenues and expenses from non-operating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the Authority enterprise funds are charges to customers for sales and services. The Authority also recognizes as operating revenue the portion of tap fees intended to recover the cost of connecting new customers to the water system. Operating expenses for enterprise funds include the cost of sales and services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as non-operating revenues and expenses. The Authority recognizes as operating revenue the portion of tap fees intended to recover the cost of connecting new customers to the water system.

D. Budgetary Data

The Authority's budgets are adopted as required by North Carolina General Statutes. An annual budget ordinance is adopted for the Operating Fund, Renewal and Replacement Fund, Right of Way Fund, System Development Charge Fund, Enterprise Capital Project Fund, and Bladen Bluffs Capital Project Fund. All annual appropriations lapse at fiscal year end. Appropriations under project ordinances for the enterprise construction project sub funds lapse at the completion of the project. All budgets are prepared using the modified accrual basis of accounting which is consistent with the accounting system used to record transactions. Expenditures may not legally exceed appropriations at the functional level for all annually budgeted funds and the object level for the multi-year funds. During the year, an amendment was made to the original budget, the effects of which were not material. The budget ordinance must be adopted by June 30 of the fiscal year or the governing board must adopt an interim budget that covers the time until the annual ordinance can be adopted.

E. Assets, Liabilities, Deferred Outflows/Inflows or Resources, and Fund Equity

1. Deposits and Investments

All deposits of the Authority are made in board-designated official depositories and are secured as required by State law [G.S. 159-31]. The Authority may designate, as an official depository, any bank or savings association whose principal office is located in North Carolina. Also, the Authority may establish time deposit accounts such as NOW and Super-NOW accounts, money market accounts, and certificates of deposit.

State law [G.S. 159-30(c)] authorizes the Authority to invest in obligations of the United States or obligations fully guaranteed both as to principal and interest by the United States; obligations of the State of North Carolina; bonds and notes of any North Carolina local government or public authority; obligations of certain non-guaranteed federal agencies; certain high quality issues of commercial paper and bankers' acceptances, and the North Carolina Capital Management Trust (NCCMT). The Authority's investments are reported at fair value. Non-participating interest earning investment contracts are accounted for at cost. The NCCMT Government Portfolio, a SEC-registered (2a-7) money market mutual fund, is measured at fair value. The NCCMT-Term Portfolio is a bond fund, has no rating and is measured at fair value. As of June 30, 2022, the Term Portfolio has a duration of .15 years. Because the NCCMT Government and Term Portfolios have a weighted average maturity of less than 90 days, they are presented as an investment with a maturity of less than 6 months.

2. Cash and Cash Equivalents

The Authority considers all highly liquid investments with maturity of three months or less when purchased to be cash and cash equivalents.

3. Allowances for Doubtful Accounts

All receivables at June 30, 2022 are considered collectible.

4. Capital Assets

Capital assets are defined by the government as assets with an initial, individual cost of more than a certain cost and an estimated useful life in excess of two years. Minimum capitalization costs are of individual items of more than $5,000. Donated capital assets received prior to June 30, 2015 are recorded at their estimated fair value at the date of donation. Donated capital assets received after June 30, 2015 are recorded at acquisition value. All other purchased or constructed capital assets are reported at cost or estimated historical cost. General infrastructure assets acquired prior to July 1, 2003, consist of the water system assets that were acquired or that received substantial improvements subsequent to July 1, 1980, and are reported at estimated historical cost using deflated replacement cost. The cost of normal maintenance and repairs that do not add to the value of the asset or materially extend assets' lives are not capitalized. The Authority has elected to capitalize those interest costs that are incurred during the construction period of general fixed assets when appropriate. Assets are depreciated on a straight-line basis over estimated useful lives, which are as follows:

	Years
Buildings	40
Water supply system - pipeline	40
Water supply system - equipment	25
Office equipment	16
Vehicle	5

5. Accounting Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amount of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenditures during the period. Actual results could differ from these estimates.

6. Deferred outflows/inflows of resources

In addition to assets, the statement of financial position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, *Deferred Outflows of Resources*, represents a consumption of net position that applies to a future period and so will not be recognized as an expense or expenditure until then. The Authority has two items that meets this criterion, one is the expense for the refunding of water bonds and the other is pension deferrals for the 2022 fiscal year. In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, *Deferred Inflows of Resources*, represents an acquisition of net position that applies to a future period and so will not be recognized as revenue until then. The Authority has one item that meet the criterion for this category - pension deferrals.

7. Long-Term Obligations

In the government-wide financial statements, and proprietary fund types in the fund financial statements, long-term debt and other long-term obligations are reported as liabilities in the applicable business-type activities or proprietary fund type statement of net position. Bond premiums and discounts are deferred and amortized over the life of the bonds using the straight-line method that approximates the effective interest method. Bonds payable are reported net of the applicable bond premiums or discount. Bond issuance costs, except for prepaid insurance costs, are expensed in the reporting period in which they are incurred.

8. Compensated Absences

The vacation policy of the Authority provides for the accumulation of up to thirty days earned vacation leave with such leave being fully vested when earned. For the Authority's proprietary funds, an expense and a liability for compensated leave and the salary-related payments are recorded as the leave is earned. The Authority has assumed a first-in, first-out method of using accumulated compensated time. The portion of that time that is estimated to be used in the next fiscal year has been designated as a current liability. The Authority's sick leave policy grants twelve days per year to full-time employees which can accumulate without limit, but which do not vest. As such, accumulated and non-vested sick leave is not provided in these financial statements.

9. Net Position/Fund Balances

Net Position

Net position in proprietary fund financial statements is classified as net investment in capital assets; restricted; and unrestricted. Restricted net position represent constraints on resources that are either externally imposed by creditors, grantors, contributors, or laws or regulations of other governments or imposed by law through state statute.

Fund Balances

In the governmental fund financial statements, fund balance is composed of five classifications designed to disclose the hierarchy of constraints placed on how fund balance can be spent.

Nonspendable Fund Balance - This classification includes amounts that cannot be spent because they are either (a) not in spendable form or (b) legally or contractually required to be maintained intact.

Restricted Fund Balance - This classification includes amounts that are restricted to specific purposes externally imposed by creditors or imposed by law.

Committed Fund Balance - portion of fund balance that can only be used for specific purposes imposed by majority vote by quorum of the Authority's governing body (highest level of decision-making authority). The governing body can, by adoption of an ordinance prior to the end of the fiscal year, commit fund balance. Once adopted, the limitation imposed by the ordinance remains in place until a similar action is taken (the adoption of another ordinance) to remove or revise the limitation.

Assigned Fund Balance - portion of fund balance that the Lower Cape Fear Water and Sewer Authority intends to use for specific purposes.

Unassigned Fund Balance - portion of fund balance that has not been restricted, committed, or assigned to specific purposes or other funds.

10. Defined Benefit Cost-Sharing Plans

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Local Governmental Employees' Retirement System (LGERS) and additions to/deductions from LGERS' fiduciary net position have been determined on the same basis as they are reported by LGERS. For this purpose, plan member contributions are recognized in the period in which the contributions are due. The Authority's employer contributions are recognized when due and the Authority has a legal requirement to provide the contributions. Benefits and refunds are recognized when due and payable in accordance with the terms of LGERS. Investments are reported at fair value.

II. Stewardship, Compliance, and Accountability

A. Significant Violations of Finance-Related Legal and Contractual Provisions

1. Noncompliance with North Carolina General Statutes

None.

2. Contractual Violations

None.

3. Deficit in Fund Balance or Net Position of Individual Funds

None.

4. Excess of Expenditures over Appropriations

None.

III. Detail Notes on All Funds

A. Assets

1. **Deposits**

All the deposits of the Authority are either insured or collateralized by using one of two methods. Under the Dedicated Method, all deposits that exceed the federal depository insurance coverage level are collateralized with securities held by the Authority's agents in these units' names. Under the Pooling Method, which is a collateral pool, all uninsured deposits are collateralized with securities held by the State Treasurer's agent in the name of the State Treasurer. Since the State Treasurer is acting in a fiduciary capacity for the Authority, these deposits are considered to be held by the Authority's agents in entity's name. The amount of the pledged collateral is based on an approved averaging method for non-interest bearing deposits and the actual current balance for interest-bearing deposits. Depositories using the Pooling Method report to the State Treasurer the adequacy of their pooled collateral covering uninsured deposits. The State Treasurer does not confirm this information with the Authority or the escrow agent. Because of the inability to measure the exact amounts of collateral pledged for the Authority under the Pooling Method, the potential exists for under-collateralization, and this risk may increase in periods of high cash flows. However, the State Treasurer of North Carolina enforces strict standards of financial stability for each depository that collateralizes public deposits under the Pooling Method. The Authority has no formal policy regarding custodial credit risk for deposits, but relies on the State Treasurer to enforce standards of minimum capitalization for all pooling method financial institutions and to monitor them for compliance. The Authority complies with the provisions of G.S. 159-31 when designating official depositories and verifying that deposits are properly secured.

At June 30, 2022, the Authority's deposits had a carrying value of $3,397,285 and a bank balance of $3,592,764. Of the bank balance $250,000 as covered by federal depository insurance. The remaining balance was covered by the collateral held under he Pooling Method.

2. **Receivables - Allowances for Doubtful Accounts**

All receivables that historically experience uncollectible accounts are shown net of an allowance for doubtful accounts. Uncollectible accounts are deemed to be immaterial for the Authority, in light of historic collectability.

3. Capital Assets

Capital asset activity for the Authority for the year ended June 30, 2022, was as follows:

	Beginning Balances	Increases	Decreases	Ending Balances
Capital assets not being depreciated:				
Land	$ 882,053	$ -	$ -	$ 882,053
Total capital assets not being depreciated	882,053	-	-	882,053
Capital assets being depreciated:				
Buildings	395,734	-	-	395,734
Vehicles	250,157	737,454		987,611
Equipment	605,040	134,843	-	739,883
Plant and distribution system	69,999,316	-	-	69,999,316
Total capital assets being depreciated	71,250,247	872,297	-	72,122,544
Less accumulated depreciation for:				
Buildings	157,799	9,893	-	167,692
Vehicles	165,948	25,353	-	191,301
Equipment	139,682	79,255	-	218,937
Plant and distribution system	29,784,260	1,612,936	-	31,397,196
Total accumulated depreciation	30,247,689	$ 1,727,437	$ -	31,975,126
Total capital assets being depreciated, net	41,002,558			40,147,418
Business-type activity capital assets, net	$ 41,884,611			$ 41,029,471

B. Liabilities

1. Payables

Accounts payable and accrued liabilities reported on the Statement of Net Position at June 30, 2022 were as follows:

	Business-Type Activities
Accounts and vouchers	$ 578,527
Accrued interest payable	6,123
Total accounts payable and accrued liabilities	$ 584,650

2. Pension Plan Obligations

a. Local Government Employees' Retirement System

Plan Description. The Authority is a participating employer in the statewide Local Governmental Employees' Retirement System (LGERS), a cost-sharing multiple-employer defined benefit pension plan administered by the State of North Carolina. LGERS membership is comprised of general employees and local law enforcement officers (LEOs) of participating local governmental entities. Article 3 of G.S. Chapter 128 assigns the authority to establish and amend benefit provisions to the North Carolina General Assembly. Management of the plan is vested in the LGERS Authority of Trustees, which consists of 13 members – nine appointed by the Governor, one appointed by the State Senate, one appointed by the State House of Representatives, and the State Treasurer and State Superintendent, who serve as ex-officio members. The Local Governmental Employees' Retirement System is included in the Annual Comprehensive Financial Report (ACFR) for the State of North Carolina. The State's ACFR includes financial statements and required supplementary information for LGERS. That report may be obtained by writing to the Office of the State Controller, 1410 Mail Service Center, Raleigh, North Carolina 27699-1410, by calling (919) 981-5454, or at www.osc.nc.gov.

Benefits Provided. LGERS provides retirement and survivor benefits. Retirement benefits are determined as 1.85% of the member's average final compensation times the member's years of creditable service. A member's average final compensation is calculated as the average of a member's four highest consecutive years of compensation. Plan members are eligible to retire with full retirement benefits at age 65 with five years of creditable service, at age 60 with 25 years of creditable service, or at any age with 30 years of creditable service. Plan members are eligible to retire with partial retirement benefits at age 50 with 20 years of creditable service or at age 60 with five years of creditable service. Survivor benefits are available to eligible beneficiaries of members who die while in active service or within 180 days of their last day of service and who have either completed 20 years of creditable service regardless of age or have completed five years of service and have reached age 60. Eligible beneficiaries may elect to receive a monthly Survivor's Alternate Benefit for life or a return of the member's contributions. The plan does not provide for automatic post-retirement benefit increases. Increases are contingent upon actuarial gains of the plan.

Contributions. Contribution provisions are established by General Statute 128-30 and may be amended only by the North Carolina General Assembly. The Authority employees are required to contribute 6% of their compensation. Employer contributions are actuarially determined and set annually by the LGERS Board of Trustees. The Authority's contractually required contribution rate for the year ended June 30, 2022, was 11.67% for general employees, actuarially determined as an amount that, when combined with employee contributions, is expected to finance the costs of benefits earned by employees during the year. Contributions to the pension plan from the Authority were $18,668 for the year ended June 30, 2022.

Refunds of Contributions – Authority employees who have terminated service as a contributing member of LGERS, may file an application for a refund of their contributions. By state law, refunds to members with at least five years of service include 4% interest. State law requires a 60 day waiting period after service termination before the refund may be paid. The acceptance of a refund payment cancels the individual's right to employer contributions or any other benefit provided by LGERS.

Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At June 30, 2022, the Authority reported an liability of $12,729 for its proportionate share of the net pension liability. The net pension liability was measured as of June 30, 2020. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of December 31, 2019. The total pension liability was then rolled forward to the measurement date of June 30, 2020 utilizing update procedures incorporating the actuarial assumptions. The Authority's proportion of the net pension liability was based on a projection of the Authority's long-term share of future payroll covered by the pension plan, relative to the projected future payroll covered by the pension plan of all participating LGERS employers, actuarially determined. At June 30, 2022, the Authority's proportion was 0.00083%, which was a increase of 0.00059% from its proportion measured as of June 30, 2021.

For the year ended June 30, 2022, the Authority recognized pension expense of $18,223. At June 30, 2022, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 4,050	$ -
Change in assumptions	7,997	-
Net difference between projected and actual earnings on pension plan investments	-	18,186
Changes in proportion and differences between Authority's contributions and proportionate share of contributions	24,735	-
Authority's contributions subsequent to the measurement date	18,668	-
Total	$ 55,450	$ 18,186

$18,668 reported as deferred outflows of resources related to pensions resulting from Authority contributions subsequent to the measurement date will be recognized as an increase of the net pension liability in the year ended June 30, 2022. Other amounts reported as deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ended June 30	
2023	11,245
2024	8,271
2025	4,644
2026	(5,564)
Thereafter	-
	$ 18,596

Actuarial Assumptions. The total pension liability in the December 31, 2020 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.0 percent
Salary Increases	3.50 to 8.10 percent, including inflation and productivity factor
Investment rate of return	7.00 percent, net of position plan investment expense, including inflation

The plan currently uses mortality tables that vary by age, gender, employee group (i.e. general, law enforcement officer) and health status (i.e. disabled and healthy). The current mortality rates are based on published tables and based on studies that cover significant portions of the U.S. population. The healthy mortality rates also contain a provision to reflect future mortality improvements.

The actuarial assumptions used in the December 31, 2020 valuation were based on the results of an actuarial experience study for the period January 1, 2010 through December 31, 2014.

Future ad hoc COLA amounts are not considered to be substantively automatic and are therefore not included in the measurement.

The projected long-term investment returns and inflation assumptions are developed through review of current and historical capital markets data, sell-side investment research, consultant whitepapers, and historical performance of investment strategies. Fixed income return projections reflect current yields across the U.S. Treasury yield curve and market expectations of forward yields projected and interpolated for multiple tenors and over multiple year horizons. Global public equity return projections are established through analysis of the equity risk premium and the fixed income return projections. Other asset categories and strategies' return projections reflect the foregoing and historical data analysis. These projections are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class as of June 30, 2020 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Fixed Income	29.0%	1.4%
Global Equity	42.0%	5.3%
Real Estate	8.0%	4.3%
Alternatives	8.0%	8.9%
Credit	7.0%	6.0%
Inflation Protection	6.0%	4.0%
Total	100%	

The information above is based on 30 year expectations developed with the consulting actuary for the 2020 asset, liability, and investment policy study for the North Carolina Retirement Systems, including LGERS. The long-term nominal rates of return underlying the real rates of return are arithmetic annualized figures. The real rates of return are calculated from nominal rates by multiplicatively subtracting a long-term inflation assumption of 3.00%. All rates of return and inflation are annualized.

Discount rate. The discount rate used to measure the total pension liability was 6.50%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rate and that contributions from employers will be made at statutorily required rates, actuarially determined. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of the current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Authority's proportionate share of the net pension liability to changes in the discount rate. The following presents the Authority's proportionate share of the net pension liability calculated using the discount rate of 6.50 percent, as well as what the Authority's proportionate share of the net pension asset or net pension liability would be if it were calculated using a discount rate that is one percentage point lower (5.50 percent) or one percentage point higher (7.50 percent) than the current rate:

	1 % Decrease (5.50%)	Discount Rate (6.50%)	1% Increase (7.50%)
Authority's proportionate share of the net pension	$49,412	$12,729	($17,460)

Pension plan fiduciary net position. Detailed information about the pension plan's fiduciary net position is available in the separately issued Annual Comprehensive Financial Report (ACFR) for the State of North Carolina.

b. Supplemental Retirement Income Plan

Plan Description. The Authority contributes to the Supplemental Retirement Income Plan (Plan), a defined contribution pension plan administered by the Department of State Treasurer and a Board of Trustees. The Plan provides retirement benefits to personnel employed by the Authority. Article 5 of G.S. Chapter 135 assigns the authority to establish and amend certain benefit provisions to the North Carolina General Assembly. The Plan is included in the Annual Comprehensive Financial Report (ACFR) for the State of North Carolina. The State's ACFR includes the pension trust fund financial statements for the Internal Revenue code Section 401(k) Plan that includes the Plan. That report may be obtained by writing to the Office of the State Controller, 1410 Mail Service Center, Raleigh, North Carolina 27699-1410 or by calling (919)981-5454.

Funding Policy. Article 12E of G.S. Chapter 143 requires the Authority to contribute each month an amount equal to three percent of each participant's salary, and all amounts contributed are vested immediately. Also, the participants may make voluntary contributions to the Plan. Contributions for the year ended June 30, 2022 were $12,100.

c. Other Employment Benefit

The Authority has also elected to provide death benefits to employees through the Death Benefit Plan for members of the Local Government Employees' Retirement System (Death Benefit Plan), a multiple-employer, State-administered, cost-sharing plan funded on a one year term cost basis. The beneficiaries of those employees who die in active service after one year of contributing membership in the System, or who die within 180 days after retirement or termination of service and have at least one year of contributing membership service in the System at the time of death are eligible for death benefits. Lump-sum death benefit payments to beneficiaries are equal to the employee's 12 highest months' salary in a row during the 24 months prior to the employee's death, but the benefit may not exceed $50,000 or be less than $25,000. Because all death benefit payments are made from the Death Benefit Plan and not by the Authority, the Authority does not determine the number of eligible participants. The Authority has no liability beyond the payment of monthly contributions. The contributions to the Death Benefit Plan cannot be separated between the post-employment benefit amount and the other benefit amount. The Authority considers these contributions to be immaterial.

3. Deferred Outflows and Inflows of Resources

Deferred outflows of resources at year-end is comprised of the following:

	Amount
Pension deferrals	$ 55,450
Charge on bond refunding	14,157
Total	$ 69,607

Deferred inflows of resources at year-end is comprised of the following:

Pension deferrals	$ 18,186

4. Risk Management

The Authority is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. The Authority carries commercial coverage for all risks of loss, to include business auto ($3,000,000 limit), real and personal property ($26,397,125 limit), general liability ($3,000,000 per occurrence), and worker's compensation (statutory). There have been no subsequent reductions in insurance coverage in the prior year, and settled claims have not exceeded coverage in any of the past three fiscal years. The Authority does not carry flood insurance. In accordance with G.S. 159-29 the Authority's employees that have access to more than $100 or more at any given time of the Authority's funds are performance bonded through a commercial surety bond. The Finance Officer is individually bonded for $50,000. The remaining employees that have access to funds are bonded under a blanket bond for $50,000. In addition, the Authority carries Government Crime coverage for the loss of or damage to money, securities, and other property resulting directly from theft, forgery, or alteration committed by an employee inside and outside the premises ($100,000 per occurrence).

5. Claims, Judgments and Contingent Liabilities

At June 30, 2022, the Authority was not a defendant to any lawsuits.

6. Long Term Obligations

The Authority has no authority to issue general obligation debt under its enabling legislation. The Authority is able to issue revenue bonds in such amounts as may be financially feasible without statutory limits. The following is the composition of long-term debt as of June 30, 2022.

a. Notes Payable

In March 2019, the Authority entered into a three year direct placement loan of $1,506,438 with New Hanover County for the a relocation capital project under US HWY 421. The contract requires principal payments beginning in the fiscal year of 2020 at an annual interest rate of 2 percent. Matures in May 2023.	$	199,414

b. Revenue Bonds

$24,665,000 Special Facility Revenue Bonds, Series 2010, issued for the construction of a surface water treatment plant; due in annual installments ranging from $455,000 to $2,050,000 through December 1, 2024; interest payable monthly at a variable rate. All payments are made directly by Smithfield Farmland Corporation, although the liability is held in the name of The Authority.	18,300,000
Total long-term debt	18,499,414
Less: Current portion	1,109,414
	$ 17,390,000

c. Changes in General Long-Term Liabilities

The changes in the long-term debt for the year ending June 30, 2022 are as follows:

	Balance 7/1/2021	Additions	Retirements	Balance 6/30/2022	Current Portion
Revenue bonds	$ 19,751,443	$ -	$ 1,451,443	$ 18,300,000	$ 910,000
Direct Placement Installment agreements	551,014	-	351,600	199,414	199,414
Net pension liability	8,576	4,153	-	12,729	-
Compensated absences	6,316	10,505	2,007	14,814	2,500
Total	$ 20,317,349	$ 14,658	$ 1,805,050	$ 18,526,957	$ 1,111,914

The future payments of the revenue bonds for the years ending after June 30, 2022 are as follows:

	Business-Type Activities	
Year Ending June 30	Principal	Interest
2023	$ 1,109,414	$ 16,798
2024	970,000	12,173
2025	1,035,000	11,494
2026	1,115,000	10,770
2027	1,190,000	9,989
2028-2032	7,325,000	36,218
2033-2037	5,755,000	8,757
Total	$ 18,499,414	$ 106,199

d. Special Facility Revenue Bonds

In March 2010, the Authority issued $24,665,000 in special facility revenue bonds, per the Treated Water Supply Agreement with the Smithfield Farmland Corporation (the Agreement) dated December 18, 2009, for the construction of a water intake at Bladen Bluff on the Cape Fear River, a four million gallons per day treatment plant and necessary pipelines and appurtenant facilities. Per the Agreement, Smithfield Farmland Corporation will make payments directly to the bond agent in the amount of any principal, interest, or additional bond expenses, when due and payable. Smithfield Farmland Corporation will continue to make such payments so long as Smithfield Farmland Corporation is the sole user of the Bladen Bluffs Project. As per the Agreement, Smithfield Farmland Corporation has provided a letter of credit through Robo Bank sufficient for issuance of the Bonds. The Authority has recognize the value of these principal and interest payment as a nonoperating revenue called Treated Water Supply Agreement (Smithfield Farmland). This revenue is offset by interest expense and principal payments decreasing the balance of the outstanding bonds.

e. Revenue Bond Covenants

The Authority has been in compliance with the covenants as to rates, fees, rentals, and charges in Section 5 of the Bond Orders, authorizing the issuance of the 2012 Enterprise System Revenue Refunding bonds, the 2010 Combined Enterprise Revenue Bonds, and the 2010 Special Facility Revenue Bonds, since the adoption of each bond order. Section 5.01 Bond Orders of the 2012 Enterprise System Revenue Refunding bonds, and 2010 Combined Enterprise Revenue Bonds, require the debt service coverage to be no less than 110%. Section 5.01 of the Bond Order of the 2010 Special Facility Revenue Bonds, requires the debt service coverage to be no less than 100%. The debt service coverage ratio calculation for the year ended June 30, 2022, is as follows:

Operating revenues	$ 7,586,529
Operating expenses *	4,483,011
Operating income	3,103,518
Non-operating revenues (expenses)	(80,575)
Income available for debt service	$ 3,022,943
Debt service, principal and interest paid (Revenue bonds only)	$ 1,511,752
Debt service coverage ratio	200%

*Per rate covenants, this does not include the depreciation and amortization expenses of $1,727,437.
**Per rate covenants, this does not include revenue bond interest of $60,309.

The Authority has pledged future water customer revenues, net of specified operating expenses, to repay $5,507,451 in 2012 Enterprise System Revenue Refunding bonds, $3,000,000 in 2010 Combined Enterprise Revenue Bond, and $24,665,000 in 2010 Special Facility Revenue Bonds. Proceeds from the bonds provided financing for water system improvements and the construction of a surface water treatment plant. The 2012 Enterprise System Revenue Refunding Bonds, and the 2010 Combined Enterprise Revenue Bonds, are payable solely from water customer net revenues and are payable through 2022. The total principal and interest remaining to be paid on these bonds is $18,402,2111. Principal and interest paid for the current year and total customer net revenues were $1,005,504 and $1,076,067 respectively. In the event that the Treated Water Supply Agreement is not met, the Special Facility Revenue Bonds are payable from water customer net revenues through 2024. The total principal and interest remaining to be paid on the bonds is $18,402,211. Principal and interest paid for the current year were $1,511,752. Payments made directly by Smithfield Farmland Corporation, on behalf of The Authority, for principal and interest for the current year were $601,443.

IV. Transactions with Related Parties and Major Customers

Brunswick County is related to the Authority as one of its members (See Note 1: Reporting Entity). The Authority currently sells water to Brunswick County under a Fourth Amended and Restated Water Supply Agreement dated December 10, 2012, which continues until December 31, 2030, with provisions for ten-year extensions thereafter. Water charges of $1,818,755 for the year ended June 30, 2022 (25% of total water charges) and a customer receivable of $150,603 at June 30, 2022 are attributable to Brunswick County.

The Authority currently sells water to the Cape Fear Public Utility Authority. Water charges of $1,324,190 for the year ended June 30, 2022 (18%) and a customer receivable of $74,561 are attributable to the Cape Fear Public Utility Authority.

V. Summary Disclosure of Significant Deficiencies

The Authority has received proceeds from several federal grants. Periodic audits of these grants are required and certain costs may be questioned as not being appropriate expenditures under the grant agreements. Such audits could result in the refund of grant moneys to the grantor agencies. Management believes that any required refunds will be immaterial. No provision has been made in the accompanying financial statements for the refund of grant moneys.

VI. Significant Effects of Subsequent Events

There are no subsequent events that would have a material affect on the financial statements. Subsequent events have been analyzed through the date that the financial statements were available to be issued.

REQUIRED

SUPPLEMENTAL FINANCIAL DATA

This section contains additional information required by generally accepted accounting principals.

Schedule of the Proportionate Share of the Net Pension Liability – Local Government Employees' Retirement System

Schedule of Contributions – Local Government Employees' Retirement System

Lower Cape Fear Water and Sewer Authority
Lower Cape Fear WSA's Proportionate Share of Net Pension Liability (Asset)
Required Supplementary Information
Last Nine Fiscal Years*

Local Government Employees' Retirement System

	2022	2021	2020	2019	2018	2017	2016	2015	2014
Authority's proportion of the net pension liability (asset) (%)	0.00083%	0.00024%	0.00059%	0.00074%	0.00086%	0.00098%	0.00100%	0.0011%	0.0012%
Authority's proportion of the net pension liability (asset) ($)	$ 12,729	$ 8,576	$ 16,112	$ 17,555	$ 13,138	$ 20,799	$ 4,623	$ (6,546)	$ 14,465
Authority's covered-employee payroll	$ 165,309	$ 133,855	$ 160,576	$ 156,534	$ 153,122	$ 149,387	$ 145,429	$ 145,650	$ 138,599
Authority's proportionate share of the net pension liability (asset) as a percentage of its covered-employee payroll	7.70%	6.41%	10.03%	11.21%	8.58%	13.92%	3.18%	(4.49%)	10.44%
Plan fiduciary net position as a percentage of the total pension liability**	95.51%	88.61%	90.86%	91.63%	94.18%	91.47%	98.09%	102.64%	94.35%

* The amounts presented for each fiscal year were determined as of the prior fiscal year ending June 30.

** This will be the same percentage for all participant employers in the LGERS plan.

Lower Cape Fear Water and Sewer Authority
Lower Cape Fear WSA's Contributions
Required Supplementary Information
Last Nine Fiscal Years

Local Government Employees' Retirement System

	2022	2021	2020	2019	2018	2017	2016	2015	2014
Contractually required contribution	$ 18,668	$ 17,820	$ 12,770	$ 13,344	$ 12,554	$ 11,744	$ 10,547	$ 10,820	$ 10,820
Contributions in relation to the contractually required contribution	18,668	17,820	12,770	13,344	12,554	11,744	10,547	10,820	10,820
Contribution deficiency (excess)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Authority's covered-employee payroll	$ 159,964	$ 165,309	$ 133,855	$ 160,576	$ 156,534	$ 153,122	$ 149,387	$ 145,429	$ 145,650
Contributions as a percentage of covered-employee payroll	11.67%	10.78%	9.54%	8.31%	8.02%	7.67%	7.06%	7.44%	7.43%

INDIVIDUAL FUND SCHEDULES

- Enterprise Operating Fund - Schedule of Revenues, Expenditures, and Changes in Fund Balances Budget and Actual (Non-GAAP)

- Renewal and Replacement Fund - Schedule of Revenues and Expenditures - Budget and Actual (Non-GAAP)

- Right of Way Fund - Schedule of Revenues and Expenditures - Budget and Actual (Non-GAAP)

- System Development Charge Fund - Schedule of Revenues and Expenditures - Budget and Actual (Non-GAAP)

- Enterprise Capital Project Fund - Schedule of Revenues and Expenditures - Budget and Actual (Non-GAAP)

Lower Cape Fear Water and Sewer Authority, North Carolina
Enterprise Operating Fund
Schedule of Revenues, Expenditures, and Changes Fund Balance
Budget and Actual (Non - GAAP)
For the Fiscal Year Ended June 30, 2022

	2022		
	Budget	Actual	Variance Positive (Negative)
Revenues:			
Operating revenue:			
Brunswick County		1,818,755	
Invista		101,260	
Cape Fear Public Utility Authority		1,324,190	
Praxair, Inc.		2,503	
Pender County		189,434	
Bladen Bluffs income		3,151,418	
Treated water supply agreement (Smithfield)		884,655	
Other operating revenues		114,314	
Total operating revenues	$7,350,083	7,586,529	$ 236,446
Nonoperating revenues:			
Interest earnings		699	
Other non-operating revenues		2,722	
Total non-operating revenues	2,978	3,421	443
Total Revenues:	7,353,061	7,589,950	236,889
Expenditures:			
Administration:			
Salaries and benefits		314,496	
Insurance		87,417	
Office expense		92,275	
Professional services		72,114	
Other		202,767	
Total administration	1,099,314	769,069	330,245
Other operating expenditures:			
Kings Bluff O&M expenses		493,320	
Bladen Bluffs expenses		2,514,044	
Utilities-Energy Pump Station		698,525	
Capital Outlay		872,297	
Debt service - principal		1,803,043	
Debt service - interest		101,023	
Total other operating expenditures	6,645,000	6,482,252	162,748
Total expenditures	7,744,314	7,251,321	492,993

	2022		
	Budget	Actual	Variance Positive (Negative)
Revenue over expenditures	(391,253)	338,629	729,882
Other financing sources (uses):			
Insurance Claim Proceeds	-	1,411	1,411
Transfers from (to) other funds	391,253	(269,740)	(660,993)
Total other financing sources (uses):	391,253	1,411	(389,842)
Revenues and other sources over expenditures and other uses	$ -	$ 340,040	$ 340,040

Reconciliation from budgetary basis (modified accrual) to full accrual:	
Revenues over expenditures	$ 340,040
Reconciling items:	
Depreciation	(1,727,437)
Capital outlay	872,297
Principal payments on long-term debt	1,803,043
(Increase) decrease in net pension liability	(4,153)
(Increase) decrease in compensated absences	(8,498)
Increase (decrease) in deferred outflows of resources for pensions	22,784
(Increase) decrease in deferred inflows of resources for pensions	(18,186)
Items from Schedules 2 through 5	
Other expenses from capital projects	-
Other income from capital projects	15,550
Interest earned from capital projects	66
Total reconciling items	955,466
Change in net position	$ 1,295,506

Lower Cape Fear Water and Sewer Authority, North Carolina
Renewal and Replacement Fund
Schedule of Revenues and Expenditures
Budget and Actual (Non - GAAP)
For the Fiscal Year Ended June 30, 2022

	2022		
	Budget	Actual	Variance Positive (Negative)
Revenues:			
Interest earnings		$ 11	
Miscellaneous		15,550	
Total non-operating revenues	$ -	15,561	$ 15,561
Expenditures:			
Repairs and maintenance		-	-
Miscellaneous		-	-
Total expenditures	-	-	-
Other financing sources (uses):			
Transfers from other funds	-	121,513	-
Total other financing sources (uses):	-	121,513	121,513
Revenues and other sources over (under) expenditures and other financing uses	$ -	137,074	$137,074
Fund balance			
Fund balance - beginning		55,380	
Fund balance - ending		$192,454	

Lower Cape Fear Water and Sewer Authority, North Carolina
Right of Way Fund
Schedule of Revenues and Expenditures
Budget and Actual (Non - GAAP)
For the Fiscal Year Ended June 30, 2022

	2022		
	Budget	Actual	Variance Positive (Negative)
Revenues:			
Interest earnings		$ 55	
Total Revenues	$ -	55	$ 55
Expenditures:			
Administration expenses		-	
Total expenditures	-	-	-
Revenues over (under) expenditures	-	55	55
Other financing sources (uses):			
Fund balance appropriated	-	-	-
Total other financing sources (uses)	-	-	-
Revenues and other sources over expenditures and other uses	$ -	55	$ 55
Fund balance			
Fund balance - beginning		281,371	
Fund balance - ending		$281,426	

Lower Cape Fear Water and Sewer Authority, North Carolina
System Development Charge Fund
Schedule of Revenues and Expenditures
Budget and Actual (Non - GAAP)
For the Fiscal Year Ended June 30, 2022

	2022		
	Budget	Actual	Variance Positive (Negative)
Revenues:			
Interest earnings		$ -	
Total Revenues	$ -	-	$ -
Expenditures:			
Administration expenses		-	
Total expenditures	-	-	-
Revenues over (under) expenditures	-	-	-
Other financing sources (uses):			
Fund balance appropriated	-	-	
Total other financing sources (uses)	-	-	-
Revenues and other sources over expenditures and other uses	$ -	-	$ -
Fund balance			
Fund balance - beginning		14	
Fund balance - ending		$ 14	

Lower Cape Fear Water and Sewer Authority, North Carolina
Enterprise Capital Project Fund
Schedule of Revenues and Expenditures
Budget and Actual (Non - GAAP)
For the Fiscal Year Ended June 30, 2022

	2022		
	Budget	Actual	Variance Positive (Negative)
Revenues:			
Grant revenue		$ -	
Total Revenues	$ -	-	$ -
Expenditures:			
Repairs and Maintenance		-	
Administration expenses		-	
Total expenditures	-	-	-
Revenues over (under) expenditures	-	-	-
Other financing sources (uses):			
Transfers from (to) other funds	-	(391,253)	(391,253)
Total other financing sources (uses)	-	(391,253)	(391,253)
Revenues and other sources over expenditures and other uses	$ -	(391,253)	$ (391,253)
Fund balance			
Fund balance - beginning		680,990	
Fund balance - ending		$ 289,737	

NEW BUSINESS (NB2)	Lower Cape Fear Water & Sewer Authority

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: January 9, 2023

Re: Appointment of Calendar Year 2023 Finance Committee by Chairman

Reviewed and approved as to form: MATTHEW A. NICHOLS, AUTHORITY ATTORNEY

Background: The Chairman historically appoints a Finance Committee to work with staff in preparing the recommended budget for consideration by the full board.

Please find attached Chairman Blanchard' s appointments to the Finance Committee

Action Requested: Discussion and direct staff

FINANCE COMMITTEE

January 1, 2023 - December 31, 2023

CHAIRMAN:

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(910) 653-3970 FAX
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yamman@embarqmail.com

NEW BUSINESS (NB3)

Lower Cape Fear Water & Sewer Authority

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: January 9, 2023

Re: Appointment of Calendar Year 2023 Personnel Committee by Chairman

Reviewed and approved as to form: MATTHEW A. NICHOLS, AUTHORITY ATTORNEY

Background: The Chairman historically has appointed a Personnel Committee to review the Executive Director's annual performance and in regards to other personnel matters on a as needed basis.

Action Requested: For information purposes only

PERSONNEL COMMITTEE

January 1, 2023- December 31, 2023

CHAIRMAN:

NORWOOD BLANCHARD
POST OFFICE BOX 1425
BURGAW, NC 28425

(910) 289-1310 CELL
(910) 259-2003 HOME
(910) 259-8281 FAX
norwood1310@gmail.com

CHARLIE RIVENBARK
CITY OF WILMINGTON COUNCILMAN
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WILMINGTON, NC 28403

(910) 200-5244 CELL

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charlie.rivenbark@wilmingtonnc.gov

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ELIZABETHTOWN, NC 28337

(910) 862-3713 HOME
(910) 991-2662 CELL
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SCOTT PHILLIPS
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910-253-2017 County Office
910-253-2004 County Fax
scott.phillips@adm.com
(910) 253-9145 HOME

WILLIAM SUE
9124 SUE CIRCLE, NE
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(910) 371-2443 HOME

MAYOR BILL SAFFO
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(910) 341-4628 FAX
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HARRY KNIGHT
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910-509-7623
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MATT NICHOLS

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matt@mattnicholslaw.com

NEW BUSINESS (NB4)	Lower Cape Fear Water & Sewer Authority

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: January 9, 2023

Re: Appointment of Calendar Year 2023 Long Range Planning Committee by Chairman

Reviewed and approved as to form: MATTHEW A. NICHOLS, AUTHORITY ATTORNEY

Background: The Chairman re-established a Long-Range Planning Committee to review the Capital Improvement Plan regarding rate setting and prioritizing projects. This committee makes recommendations to the full LCFWASA Board. Staff present for this committee will be Tony Boahn, Tim Holloman, Tim Holloman, and Matt Nichols

Please find attached Chairman Blanchard' s appointments to the Long-Range Planning Committee

Action Requested: For information purposes only

LONG RANGE PLANNING COMMITTEE
January 1, 2023 - December 31, 2023

CHAIRMAN:

NORWOOD BLANCHARD
POST OFFICE BOX 1425
BURGAW, NC 28425

(910) 289-1310 CELLL/WORK
(910) 259-2003 HOME
(910) 259-8281 FAX
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PATRICK DEVANE
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pdevane50@gmail.com

JOHN NICHOLS
John.Nichols@brunswickcountync.gov
Brunswick County Utilities

Brunswick County Utilties Director
910-253-2653 WORK

KEN WALDROUP
kenneth.Waldroup@cfpu.org
Cape Fear Public Utiltiy Authority

Executive Director
910-332-6669 Work
919-369-3240 Cell

KENNY KEEL
kkeel@pendercountync.gov
Pender County Utilities

Pender County Utilities Director
910-259-0212 WORK

Executive Director's Report (EDR1-3)	Lower Cape Fear Water & Sewer Authority

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: January 9, 2023

Re: Executive Director's Report

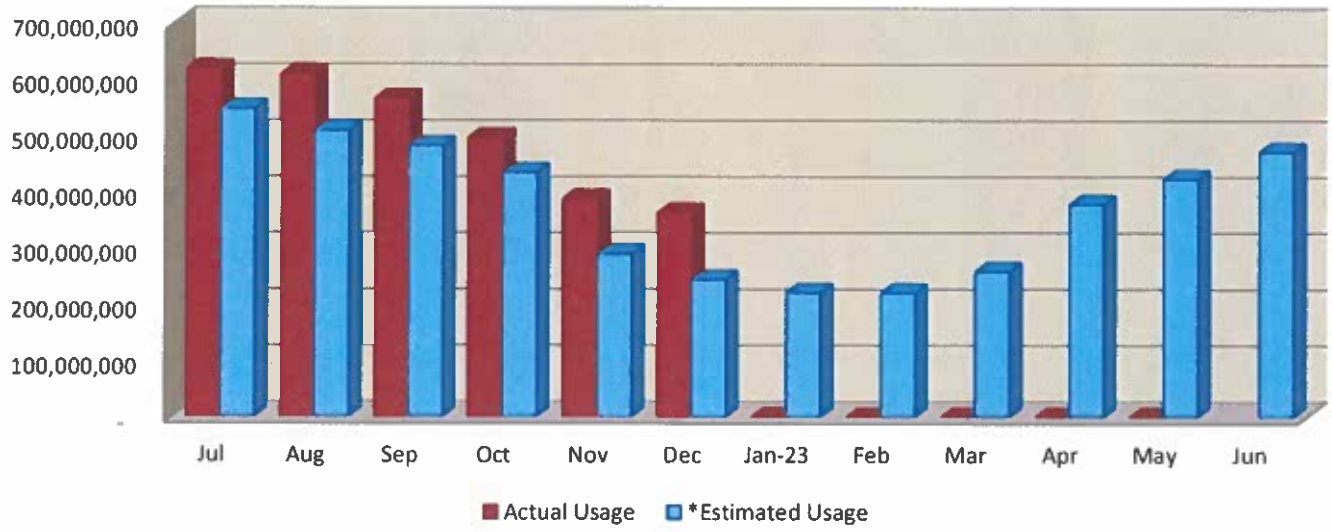
EDR1 - Comments on Customers' Water Usage and Raw Water Revenue for Fiscal Year to Date Ending December 31, 2022

EDR2 - Operating Budget Status, Ending November 30, 2022.

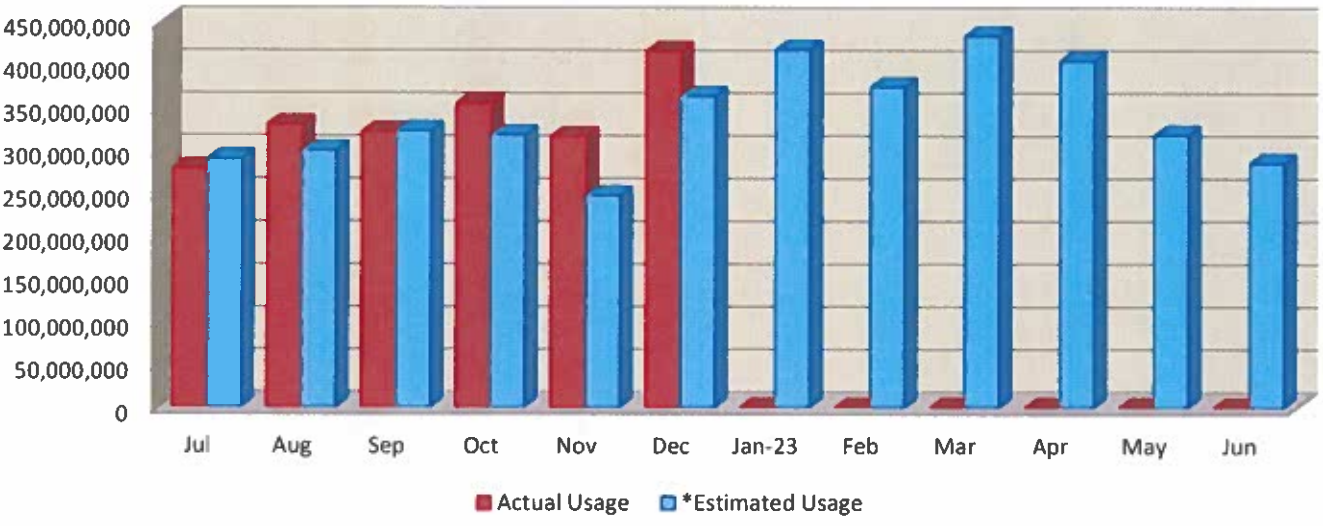
EDR3 - Summary of Activities.

Action Requested: For information purposes

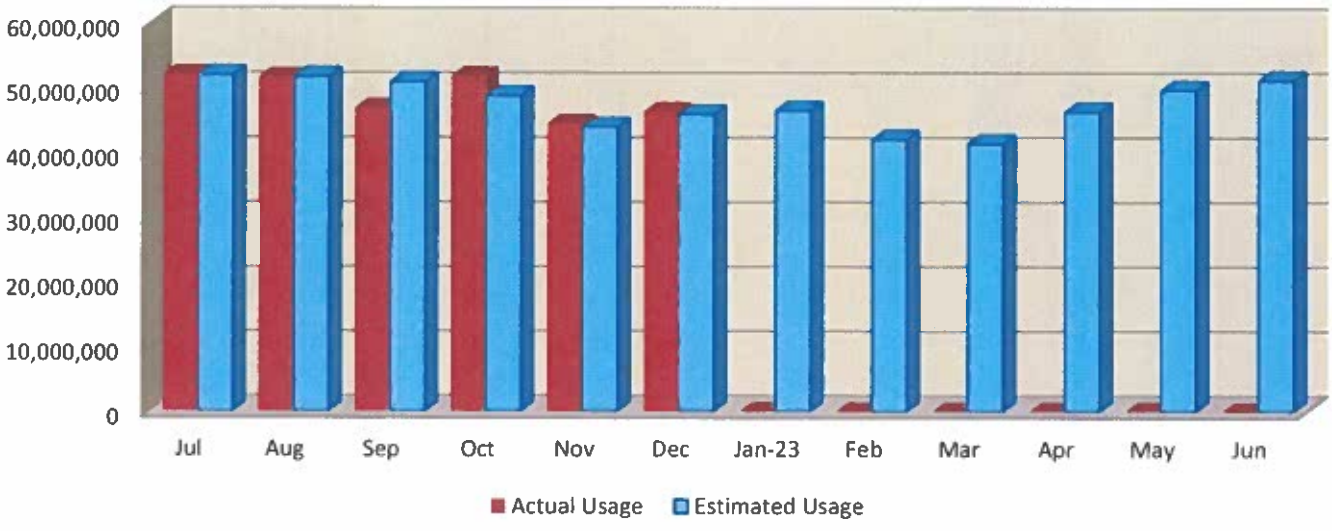
Brunswick County Water Usage FY 22-23



CFPUA Water Usage FY 22-23



Pender County Water Usage FY 22-23



OPERATING FUND BUDGET PERFORMANCE

Jul-1 through Nov 30

	Approved Annual Budget	Approved Adjusted Budget	Jul 1- Nov 30 Kings Bluff	Jul 1- Nov 30 Bladen Bluffs	Jul 1- Nov 30 OF BUDGET	Budget As of 11/30/2022
Income						
3000-01 · OPERATING REVENUE						
3001-01 · 01 Bruns County Public Utility	1,566,597	1,566,597	824,812		824,812	53%
3002-01 · 01 CFPUA	1,428,403	2,857,111	1,892,819		1,892,819	66%
3003-01 · 01 Pender County	199,518	543,293	416,780		416,780	77%
3004-01 · 01 HWY 421 - Stepan	79,618	141,566	109,114		109,114	77%
3005-01 · 01 Praxair, Inc	2,095	61,179	60,183		60,183	98%
3006-01 · 01 Bladen Bluffs Revenue	3,654,318	3,654,318		1,423,504	1,423,504	39%
Bladen Admin Reimb	102,190	102,190		46,363	46,363	45%
3007-01 · Sales Tax Refund Revenue	100,000	100,000		0	0	0%
Total 3000-01 · OPERATING REVENUE	7,132,739	9,026,254	3,303,707	1,469,868	4,773,575	53%
3100-00 · OF NONOPERATING REVENUE						
3120-00 · Revenue-Other						
Interest & Investment Revenue	500	500	59		59	12%
FEMA Reimbursement	0	0	0		0	0%
Refunds / Insurance Proceeds/ Other	0	0	1	1,251	1,252	0%
3156-00 · Rental Income	0	0	5,323		5,323	
3900-01 R&R Fund Appropriated	0	0	0		0	0%
2900-00 Fund Balance	0	0	0		0	0%
Total 3100-00 · OF NONOPERATING REVENUE	500	500	5,384	1,251	6,635	1327%
Total Income	**7,133,239**	**9,026,754**	**3,309,091**	**1,471,119**	**4,780,210**	67%
Expense						
4000-01 · ADMINISTRATION EXPENDITURES						
4001-01 · Salary - gross	187,024	187,024	37,900	23,378	61,278	33%
4010-01 · Per Diem= mileage+per diem pay	62,500	62,500	10,686	7,813	18,499	30%
4012-01 · Vehicle Allowance	5,200	5,200	1,150	650	1,800	35%
4070-02 · Phone Allowance	520	520	115	65	180	35%
4015-01 · Payroll Taxes	19,542	19,542	3,691	2,443	6,134	31%
4029-01 · Retirement Employer's Part	22,462	22,462	4,391	2,808	7,199	32%
4035-01 · 401K Employer PD Contribution	5,311	5,311	1,106	664	1,770	33%
4036-01 · Payroll Processing Exp	2,900	2,900	759		759	26%
4038-01 · Insurance Group	38,074	38,074	7,875	4,759	12,634	33%
4039-01 · Insurance, Property	94,301	94,301	38,999	11,788	50,787	54%
4046-00 Professional Services General	15,000	15,000	0	0	0	0%
4046-01 · Attorney	30,000	45,000	12,443		12,443	41%
4046-02 · Auditor	9,000	9,000	5,400	2,800	8,200	91%
4046-03 · Engineer	253,041	253,041	16,523	0	16,523	7%
4049-01 Information Technology	14,000	14,000	924	0	924	7%
4055-01 · Office Maint/Repair	23,902	23,902	4,770		4,770	20%
4058-01 Office Utilities	5,000	5,000	722		722	14%
4059-01 Office Expense	14,000	14,000	5,655		5,655	40%
4062-01 Office Equipment	10,000	10,000	2,779		2,779	28%
4064-01 Printing & Advertising	6,500	6,500	1,309		1,309	20%
4065-01 Telephone and Internet	3,500	3,500	931		931	27%
4070-01 · Travel & Training	26,000	29,000	9,239		9,239	36%
4080-01 · Miscellaneous Expenses	15,000	23,000	7,708		7,708	51%
Total 4000-01 · ADMINISTRATION EXPENDITURES	862,777	888,777	177,075	57,167	234,242	27%
4500-01 · OPERATING EXPENDITURES						
4501-00 · Sales Tax Expense - Other	100,000	100,000		35,600	35,600	36%
4510-01 · Bladen Bluffs Expenses	2,335,094	2,335,094		1,212,628	1,212,628	52%
4520-01 · Utilities-Energy Pump Station	756,336	730,336	228,935		228,935	31%
4530-01 · Kings Bluff O&M Expenses	510,822	510,822	180,109		180,109	35%
4535-01 Kings Bluff Hurricane Other FEMA	0	0	0		0	0%
4543-01 · Series 2012 Bond Principal (ST)	0	0	0		0	0%
4544-01 · Series 2012 Bond Interest (ST)	0	0	0		0	0%
4545-01 · Series 2010 Bond Principal (BB)	850,000	850,000		0	0	0%
4546-01 · Series 2010 Bond Interest (BB)	297,500	297,500		102,605	102,605	34%
7400-01 · Operating Capital Expense	911,875	2,805,390		1,893,515	1,893,515	67%
4998-05- Transfer to R&R- KB R&R Expense	250,000	250,000		0	0	0%
2041-01- 421 Relocation NHC Loan Principal	258,835	258,835		258,835	258,835	100%
Total 4500-01 · OPERATING EXPENDITURES	6,270,462	8,137,977	409,044	3,503,183	3,912,227	48%
Total Expense	**7,133,239**	**9,026,754**	**586,119**	**3,560,350**	**4,146,468**	58%

Executive Director Highlighted Activities:

- Met with Directors' individual/group
- Work with the Attorney to draft and send a letter to the sand mining operation on HWY 421 in response to the Board's direction
- Work with CFPUA, Attorney, and the project team regarding securing an owner's representative for the parallel line project.
- Signed authorization to move forward with Survey and posting of last 10-mile section of ROW
- Reviewed Owners Advisor submissions with a joint committee
- Contacted Duke and worked with them and Brunswick County over the holiday period for the storm curtailment during the cold snap.
- Set up the second Marine Tour with CFPUA
- Started coordinating Directors' meeting for the upcoming months