

AGENDA
Lower Cape Fear Water & Sewer Authority
1107 New Pointe Boulevard, Suite # 17, Leland, North Carolina
8:30 a.m. – Personnel Committee Meeting
December 12, 2022

MEETING CALL TO ORDER: Chairman Rivenbark

PRESENTATION: Discuss 2023 Personnel Meeting Calendar

DISCUSSION:

1. Calendar for 2023

March 2023

June 2023

September 2023

December 2023

2. 401K Contribution

Currently the Authority contributes 3% with no required match.

Consider contributing up to 6% only when matched by employee.

3. Vacation

Consider allowing an employee to redeem up to 37.5 hours of vacation time for payment if they have 40 hours vacation leave remaining.

ACTION/DIRECTION: Potentially recommendation to the Board

ADJOURNMENT



AGENDA

**Lower Cape Fear Water & Sewer Authority
1107 New Pointe Boulevard, Suite # 17, Leland, North Carolina
9:00 a.m. – Regular Monthly Board Meeting
December 12, 2022**

MEETING CALL TO ORDER: Chairman Rivenbark

INVOCATION

PLEDGE OF ALLEGIANCE

APPROVAL OF CONSENT AGENDA

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

NEW BUSINESS

- NB1**- Election of Authority's Board of Directors Officers for the term of January 1, 2023, until December 31, 2023
- NB2**-Consider Award of Professional Surveying Services
- NB3**- Resolution Awarding Water Rate Study and Shared Cost Methodology for the Lower Cape Fear Water and Sewer Authority
- NB4**- Resolution Authorizing request for the Design Build of a 10 mile 54" parallel line for the Lower Cape Fear Water and Sewer Authority
- 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
- NB6**-Approval of the Authority's 2023 Regular Scheduled Meetings Calendar

ENGINEER'S COMMENTS

ATTORNEY COMMENTS

EXECUTIVE DIRECTOR REPORT

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

EDR2—Operating Budget Status, Ending October 31, 2022

EDR3—Summary of Activities

EDR4—Proposed Budget Calendar

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, January 9th at 9:00 a.m. in the Authority's office located at 1107 New Pointe Boulevard, Suite 17, Leland, North Carolina.

AGENDA ITEM

To: CHAIRMAN RIVERBARK AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: December 12, 2022

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 November 14, 2022, Regular Board Meeting

C2- Kings Bluff Monthly Operations and Maintenance Report

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

Action Requested: Motion to approve/disapprove Consent Agenda.

Lower Cape Fear Water & Sewer Authority
Regular Board Meeting Minutes
November 14th, 2022

Chairman Rivenbark called to order the Authority meeting scheduled on November 14th, 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 Edge gave the invocation.

Roll Call by Chairman Rivenbark:

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

Present by Virtual Attendance: Al Leonard and Bill Saffo

Absent: None

Staff: Tim H. Holloman, Executive Director; Matthew Nichols, General Counsel; Tony Boahn P.E., McKim & Creed, Patrick Flanagan, COG; and Danielle Hertzog, Financial Administration Assistant

Guests Present: Glenn Walker, Brunswick County Water Resources Manager; Jess Powell P.E., McKim & Creed; Robert "Buddy" Harris, Smithfield Foods Plant Environmental Manager; James Kern, Smithfield Wastewater Supervisor; 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; Benjamin Kearns, Cape Fear Public Utility Authority Water Resources Manager Water Treatment; Ken Waldroup, Cape Fear Public Utility Authority Executive Director; 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 October 10, 2022, Regular Board Meeting

C2 - Kings Bluff Monthly Operations and Maintenance

C3 - Bladen Bluffs Monthly Operations and Maintenance Report

C4 - Bladen Bluffs Source Water Resiliency and Response Plan Presentation

Motion: Director Newton **MOVED**; seconded by Director Blanchard, approval of the Consent Agenda Items C1-C4 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			
	14	0	0	0

OLD BUSINESS**OB1- Resolution Authorizing request for Owners Representative for the Design Build of a 10 mile 54" parallel line for the Lower Cape Fear Water and Sewer Authority**

Director DeVane wanted to know how the representative will be compensated. Executive Director Holloman advised from the project funding.

Motion: Director Edge **MOVED**; seconded by Director Blanchard, approving the resolution authorizing a phased 10 Mile parallel raw water line. Upon vote, the **MOTION CARRIED UNANIMOUSLY**.

	<u>For</u>	<u>Against</u>	<u>Abstained</u>	<u>Absent</u>
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			
	14	0	0	0

NEW BUSINESS**NB1- Resolution Accepting the Lower Cape Fear Water and Sewer Authority Kings Bluff Regional Raw Water Supply Facilities FY 2022-2023 Annual Inspections Report (Tony Boahn, P.E., McKim and Creed)**

As required by the Authority's authorizing bond order and water supply agreements with its customers, McKim & Creed conducted the annual inspection of the King Bluff Raw Water Pump Station (KBRWPB) and submitted the Lower Cape Fear Water & Sewer Authority Kings Bluff Regional Raw Water Supply Facilities FY 2022-2023 Annual Inspection Report. Mr. Powell provided a PowerPoint presentation of the King's Bluff annual report with an overview of the system, including intake and pier, pump station, electrical building, generator facilities, the three-million-gallon ground tank, the booster pump station, raw water main right of way, the 48-inch raw water main, and the new 54-inch parallel raw water main. Mr. Powell commended Brunswick County on doing a magnificent job maintaining Kings Bluff due to only finding minor concerns during the inspections. Mr. Powell advised that the pier and the building need repairs due to rot on the handrails and deck boards. Mr. Powell also announced that DAK Industries is no longer the property owner at the right of way, and the area is overgrown. Brunswick County has an RFQ looking for a new contractor to maintain this right of way. Director DeVane wanted to know if there was a project in the annual inspection report that McKim & Creed feels that should be moved up. Tony Boahn advised the biggest project of concern would be the pier and walkway. Mr. Boahn declared that he knows Brunswick County is continually replacing boards to keep them serviceable.

Motion: Director DeVane **MOVED**; seconded by Director Williams, approval of the *Resolution Accepting the Lower Cape Fear Water & Sewer Authority Kings Bluff Regional Raw Water Supply Facilities FY 2022-2023 Annual Inspection Report* as presented. Upon vote, the **MOTION CARRIED UNANIMOUSLY**.

	<u>For</u>	<u>Against</u>	<u>Abstained</u>	<u>Absent</u>
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			
	14	0	0	0

NB2- Resolution Accepting the Lower Cape Fear Water and Sewer Authority Bladen Bluffs Regional Raw Water Supply Facilities FY 2022-2023 Annual Inspections Report (Tony Boahn, P.E., McKim and Creed)

The Authority's Special Facility Revenue Bond Series 2010 requires an annual inspection of the Bladen Bluffs Regional Surface Water Treatment facilities by a qualified engineer to report on readiness, identify deficiencies, and make recommendations on needed repairs and capital improvements. McKim & Creed conducted the inspection and submitted the report dated October 2022. Mr. Powell presented a PowerPoint presentation of the inspection's results and findings, including the intake and raw water pump station, treatment processes, residual basins, chemical systems, and administrative facilities. Mr. Powell concluded that the items identified in the report are minor maintenance items, and the facility is well maintained. There is no cause for concern from an operational standpoint. Director Sue is concerned about the current lease with Smithfield foods. Executive Director Holloman advised he will get with Matt Nichols to see if LCFWASA can renew the lease every ten years. A copy of the report is hereby incorporated as part of these minutes.

Motion: Director Phillips **MOVED**; seconded by Director Williams, approval of the Resolution Accepting the Lower Cape Fear Water & Sewer Authority Bladen Bluffs Regional Surface Water Treatment Facilities Fiscal Year 2022-2023 Annual Inspection Report as presented. Upon vote, the **MOTION CARRIED UNANIMOUSLY**.

	<u>For</u>	<u>Against</u>	<u>Abstained</u>	<u>Absent</u>
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			
	14	0	0	0

PRESENTATION – Overview of the Bladen Bluff Plant by Robert “Buddy” Harris

James Kerns presented the Bladen Bluffs Source Water Resiliency and Response Plan. The state provided the six possible contaminant sources upstream from Bladen Bluff. In the plan, Mr. Kerns has listed emergency contacts

within Smithfield only with emergency department numbers for Bladen County. Since Smithfield has a well system, they could shut down the water plant within five to ten minutes and never go without water. Executive Director Holloman questioned if this plan needs to be updated annually. Mr. Kerns advised no it is to be updated every five years.

Motion: Director Newton **MOVED**; seconded by Director Blanchard, approval of the amended the agenda to add C4 – Source Water Resiliency and Response Plan. Upon vote, the **MOTION CARRIED UNANIMOUSLY**.

	<u>For</u>	<u>Against</u>	<u>Abstained</u>	<u>Absent</u>
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			
	14	0	0	0

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 October 31, 2022

Executive Director Holloman reported that during October 2022, Brunswick County and CFPUA were above projections. Monthly revenue was up last month.

DIRECTOR'S COMMENTS AND/OR FUTURE AGENDA ITEMS

No comments

PUBLIC COMMENT

No comments

CLOSED SESSION

Chairman Rivenbark requested a motion to go into a closed session to discuss Attorney-Client Privilege related to the following pending lawsuit:

Cape Fear Public Utility Authority, Brunswick County, Lower Cape Fear Water & Sewer Authority, and Town of Wrightsville Beach v. The Chemours Company FC, LLC, E.I. Du Pont De Nemours and Company, and The Chemours Company; United States District Court for the Eastern District of North Carolina, Case No. 7:17-CV-00195-D and Case No. 7:17-CV-00209-D.

Motion: Director Blanchard **MOVED**; seconded by Director Williams, to go into closed session in accordance with N.C.G.S. §143-318.11(a)(3) to preserve Authority's Attorney-Client Privilege regarding the pending lawsuit. Upon vote, the **MOTION CARRIED UNANIMOUSLY**.

	<u>For</u>	<u>Against</u>	<u>Abstained</u>	<u>Absent</u>
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			
	14	0	0	0

At 9:58 a.m., the board went into closed session. At 10:18 a.m., the board returned to open session. Discussion only; no action required.

ADJOURNMENT

There being no further business, Chairman Rivenbark adjourned the meeting at 10:19 a.m.

Respectfully Submitted:

Harry Knight, Secretary

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: 11/30/2022

SUBJECT: Monthly maintenance report for November 2022

Mr. Holloman,

The Maintenance and Operations of the king's bluff facility for the month of November 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 assisted two (2) potential contractors in showing them the whole right of way for landscaping needs.

KB personnel power washed ARV's and blow-offs along right of way for paint.

KB personnel fixed faulty butterfly valve to backwash screen.

KB personnel fixed wood deck on compressor building at river.

KB personnel completed regular screen blow off at river.

KB personnel reorganized generator building supply room for better workflow.

KB personnel corrected malfunctioning parts from the prior months' inspection.

KB personnel thoroughly inspected whole right of way.

Contractors:

N-C DEQ took water samples.

Cleaning crew cleaned Kings Bluff office.

Vehicle inspection & new tires on Authority truck #1.

Mirror replacement & recall fix on Authority truck #3.

Thank you,
Greg Lazorchak



To: Tim Holloman - LCFWASA

From: James Kern – Bladen Bluffs SWTP ORC

Date: 12/5/22

Subject: November 2022 Operations

During the month of November, Bladen Bluffs SWTP operated a total of 21 days, treating 50.21 million gallons of water.

We used:

31,964 lbs. of aluminum sulfate (Alum)

8,703 lbs. of sodium hydroxide (Caustic)

1,423 lbs. of sodium hypochlorite (2,857 gallons of 6% Chlorine Bleach)

James Kern
Water Treatment Plant
Supervisor

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

Smithfield
Good food. Responsibly®

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

Bladen Bluffs SWTP Maintenance Report

Date: 12/5/2022

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
Keep losing radio signal in finished building	COMPLETE
Lost signal to three cameras at river	IN PROGRESS
Annual GAC replacement	COMPLETE
Replacing light fixture at RWPS with LED	COMPLETE
Vault intrusion electrical needs sealed	Getting quote
Replacing all faded ARC Flash/safety outdoor labels	Getting quote
Cl2 leak	Will fix next shutdown
Settle basins need cleaning	COMPLETE
Turbidity calibrations due	COMPLETE
DR6000 due for service	COMPLETE
Sump Pump issue in pipe gallery	IN PROGRESS

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: November Facility Name: Bladen Bluff

Combined Filter Effluent (CFE) Turbidity

Samples exceeding 1 NTU (count):	<u>0</u>	Number of samples required:	<u>107</u>
Samples exceeding .3 NTU (count):	<u>0</u>	Number of samples taken:	<u>108</u>
Samples exceeding .3 NTU (pct):	<u>0.0%</u>	Highest single turbidity reading NTU:	<u>0.087</u>
		Monthly average turbidity NTU:	<u>0.051</u>

Individual Filter Effluent (IFE) Turbidity

1) Was each filter <u>continuously</u> monitored for turbidity?	Yes	<u>X</u>	No	<u> </u>
2) Was each filter's monitoring results <u>recorded every 15 minutes</u> ?	Yes	<u>X</u>	No	<u> </u>
3) Was there a failure of the continuous turbidity monitoring equipment?	Yes	<u> </u>	No	<u>X</u>
4) Was any individual filter turbidity level > 1.0 NTU in two consecutive measurements ?	Yes	<u> </u>	No	<u>X</u>
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	<u> </u>	No	<u>X</u>
6) Was any individual filter turbidity level > 1.0 NTU in two consecutive measurements in each 3 consecutive months ?	Yes	<u> </u>	No	<u>X</u>
7) Was any individual filter turbidity level > 2.0 NTU in two consecutive measurements in 2 consecutive months ?	Yes	<u> </u>	No	<u>X</u>

Entry Point Residual Disinfectant Concentration (EPRD)

Disinfectant Used	<u>Chlorine</u>	Number of samples required	<u>107</u>
Minimum EPRD concentration	<u>0.7100</u>	Number of samples taken	<u>108</u>

Distribution Residual Disinfectant Concentration

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

Contact Time (CT) Ratio

Lowest CT ratio reading	<u>18.15</u>	Number of CT ratios required	<u>21</u>
Number of CT ratios below 1.0	<u>0</u>	Number of CT ratios calculated	<u>21</u>

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 November, 2022 and that records documenting compliance with this rule are maintained on the premises and available for inspection upon request.

CONSENT AGENDA (CA-4)**Lower Cape Fear Water & Sewer Authority**

CONSENT ITEM- Background: Line-Item adjustments are made to more closely align revenues and expenditures to actuals without exceeding or decreasing the approved or amended budget

LINE-ITEM ADJUSTMENTS FOR 10/31/2022

Operating Fund:	Line-Item Budget Amount prior to Adjustment	Decrease	Increase	Budget Amount as of 10/31/2022
REVENUE				
EXPENSES				
4046-01 Attorney	\$ 30,000		\$ 15,000	\$ 45,000
4070-01 Travel and Training	\$ 26,000		\$ 3,000	\$ 29,000
4080-01 Miscellaneous Expenses	\$ 15,000		\$ 8,000	\$ 23,000
4520-01 Utilities-Energy Pump Station	\$ 756,336	\$ (26,000)		\$ 730,336
Total	\$ 827,336	\$(26,000)	\$26,000	\$ 827,336

Resolution Accepting Bladen Bluffs Source Water Resiliency and Response Plan ^{Item C5}

WHEREAS, 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 the Cape Fear to supply treatment facilities that serve 550,000 customers: and,

WHEREAS, as required by G.S 130A-320, every supplier of water operating a public water system treating and furnishing water from a surface water source shall create and implement a Source Water Protection Plan and,

WHEREAS, the Bladen Bluffs Water Treatment Plant shall have a SWRRP that identifies potential contaminant sources; and,

WHEREAS, the five areas outlined in the Classifications and Water Quality Standards Applicable to Surface Waters and Wetlands of North Carolina, 15 A NCAC 02B .0200; and,

WHEREAS, Bladen Bluffs plant qualifies as a non-community water system and must certify completion and implementation of a SWRRP by December 31, 2022; and,

WHEREAS, Bladen Bluffs must review their SWRRP every five years; and,

WHEREAS, Bladen Bluffs Operator in Responsible Charge, James Kerns presented the plan and implementation protocols at the regular November 14, 2022, meeting.

NOW, THEREFORE, BE IT RESOLVED, by the Chairman and the Directors of the Lower Cape Fear Water and Sewer Authority, that the Authority adopts a resolution approving and acknowledging that Bladen Bluffs has implemented a Source Water Protection Plan.

THEREFORE, BE IT FURTHER RESOLVED, that a copy of this Resolution be recorded in the permanent minutes of this Board.

Adopted this 12th day of December 2022.

Charlie Rivenbark, Chairman

ATTEST:

Harry Knight, Secretary

**State of North Carolina
Department of Environmental Quality**

Source Water Resiliency and Response Plan (SWRRP) Certification Form

In accordance with 15A NCAC 18C .1305 (a): in compliance with G.S. 130A-320, every supplier of water operating a public water system treating and furnishing water from a surface water source shall create and implement a Source Water Protection Plan. For the purposes of this Rule, the Source Water Protection Plan required by G.S. 130A-320 shall be referred to as a Source Water Resiliency and Response Plan (SWRRP). Additionally, as per 15A NCAC 18C .1305 (i), the supplier of water shall certify that a SWRRP has been created and implemented, and that the water system's governing body has been advised of the SWRRP creation and implementation. The certification shall be submitted to the Department by the deadlines specified in Paragraphs (c), (d), (e), or (f) of this Rule.

By my signature below, I certify on behalf of the public water system named below, that:

- In accordance with all requirements of 15A NCAC 18C .1305, a SWRRP has been created and implemented, and that the water system's governing body has been advised of the SWRRP creation and implementation.

Signature: 

Name: JAMES KERN

Title: ORC

Date: 11-14-2022

System Name: Bladen Bluffs SWTP

System ID: NC5009012

Certifications can be sent by mail to Source Water Protection Program, 1634 Mail Service Center, Raleigh, NC 27699
or attachment to an email message to SWAP@ncdenr.gov

AGENDA ITEM

To: CHAIRMAN RIVENBARK AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: December 12, 2022

Re: Election of Authority's Board of Directors Officers for the Term of January 1, 2023, until December 31, 2023

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

In accordance with Article III, Section 1. of the Lower Cape Fear Water and Sewer Authority's Bylaws, new officers are to be elected for the term of January 1, 2023, to December 31, 2023. Provided is a list of current Board Officers who complies with the requirements outlined in the referenced Article and Section.

Action Requested: Motion to approve/disapprove election of proposed Board Officers for the term on January 1, 2023, to December 31, 2023

Chairmanship Rotation Schedule

Brunswick County
Columbus County
City of Wilmington
Pender County
New Hanover County
Bladen County

Lower Cape Fear Water & Sewer Authority

CURRENT

Board Officers, January 1 - December 31, 2022

Chairman	Charlie Rivenbark City of Wilmington
Vice-Chairman	Norwood Blanchard Pender County
Secretary	Harry Knight New Hanover County
Treasurer	Patrick DeVane Bladen County
Assistant Treasurer	Phil Norris Brunswick County

~~~~~

**Lower Cape Fear Water & Sewer Authority**

**PROPOSED**

**Board Officers, January 1 - December 31, 2023**

|                            |                                    |
|----------------------------|------------------------------------|
| <b>Chairman</b>            | Norwood Blanchard<br>Pender County |
| <b>Vice-Chairman</b>       | Harry Knight<br>New Hanover County |
| <b>Secretary</b>           | Patrick DeVane<br>Bladen County    |
| <b>Treasurer</b>           | Phil Norris<br>Brunswick County    |
| <b>Assistant Treasurer</b> | Al Leonard<br>Columbus County      |



## **AGENDA ITEM**

To: CHAIRMAN RIVENBARK AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: December 12, 2022

Re: Consider Award of Professional Surveying Services

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

---

**Background:** During Board general discussions, it has been stressed that we need additional surveying and marking of the Right of Way. Acceptance one of the attached proposals would allow for that.

**Attached:** Four proposals

**Action Requested:** Motion to approve





STATEMENT OF QUALIFICATIONS  
LOWER CAPE FEAR WATER AND SEWER  
AUTHORITY

## PROFESSIONAL SURVEYING SERVICES

November 14, 2022



Submitted by: **ESP Associates, Inc.**

📍 211 Racine Drive, Suite 101, Wilmington, NC 28403

☎ 910.313.6648 | ✉ [rpinkham@cspassociates.com](mailto:rpinkham@cspassociates.com)




# TITLE PAGE

## LOWER CAPE FEAR WATER AND SEWER AUTHORITY (LCFWASA)

Professional Surveying Services

### OFFERER'S NAME & LOCATION

ESP Associates, Inc.

 211 Racine Drive, Suite 101  
Wilmington, NC 28403

### CONTACT NAME:

Richard Pinkham, PLS, CFS

Division Manager: Eastern NC Operations/  
Point-of-Contact

 910.279.1511

 [rpinkham@espassociates.com](mailto:rpinkham@espassociates.com)

### DATE OF SUBMITTAL:

November 14, 2022

4pm EST



# TABLE OF CONTENTS



*Click item to jump to page*

## COVER LETTER

### SECTION 1.

## RESUMES OF FIRM PRINCIPALS

### SECTION 2.

## POTENTIAL CONFLICTS OF INTEREST

### SECTION 3.

## FIRM QUALIFICATIONS AND EXPERIENCE

Firm Overview

Organizational Chart

Key Personnel Resumes

### SECTION 4.

## EXPERIENCE/EXAMPLES OF SIMILAR WORK

### SECTION 5.

## AVAILABILITY OF PERSONNEL

### SECTION 6.

## PROPOSED WORK PLAN

### SECTION 7.

## CLIENT REFERENCES

### SECTION 8.

## OTHER PERTINENT INFORMATION

Listen. Deliver. Improve.



November 14, 2022

Danielle Hertzog, Financial Administrative Assistant  
Lower Cape Fear Water and Sewer Authority  
1107 New Pointe Blvd., Suite 17  
Leland, NC 28451



**Re: Lower Cape Fear Water and Sewer Authority - Professional Survey Services**

Dear Ms. Hertzog and Members of the Selection Committee:

ESP Associates, Inc. (ESP), appreciates the opportunity to submit our statement of qualifications for professional surveying services for the Lower Cape Fear Water and Sewer Authority (LCFWASA). ESP is uniquely qualified, staffed, and equipped to perform all survey services as required for this contract.



**LOCATION.** ESP is a North Carolina corporation which maintains a regional office in the Wilmington area, located less than 15 minutes from LCFWASA's office. ESP will efficiently staff this contract with local personnel, eliminating out-of-town travel expenses.



**PERSONNEL.** ESP has provided surveying services in North Carolina for 36 years, and opening an Eastern NC Division Branch in Wilmington in 2000. The ESP team will provide the LCFWASA with the capacity it needs to achieve the goals of this contract. In addition to the team members outlined within this SOQ, ESP has additional resources that includes 27 North Carolina Professional Land Surveyors and 175 personnel in our surveying division company wide.



**LOCAL LEADERSHIP.** Our proposed Eastern NC division manager and point of contact for this contract, Mr. Richard Pinkham, PLS, CFS, and most of his regional office staff are local residents of the Cape Fear region. Since 2005, Mr. Pinkham has been an integral part of ESP's survey projects along coastal North Carolina, encompassing additional areas from Edisto Island, SC to Norfolk, VA. He has extensive experience performing surveys in various conditions existing within both land and sea environments. This experience has been a key factor in ESP being selected for similar contracts throughout the Carolinas.



**COMMITMENT TO INVESTMENT.** ESP equips our employees with state-of-the-art tools to maximize accuracy and efficiency. Our investment in experienced professionals and advanced equipment, in conjunction with standardized field procedures and stringent quality control, ensures a high-quality final product for our clients.

Thank you for your time and consideration of ESP. We look forward to the opportunity to serve the Lower Cape Fear Water and Sewer Authority on this contract.

Sincerely,  
**ESP ASSOCIATES, INC.**

Richard Pinkham, PLS, CFS  
Survey Manager/Point-of-Contact  
910.444.3899 | [rpinkham@espassociates.com](mailto:rpinkham@espassociates.com)





SECTION 1

**RESUMES OF  
FIRM PRINCIPALS**





## JOSEPH W. HENDRICK, PLS

*President*

Mr. Hendrick began his land surveying career in 1978 and has been with ESP since its formation in October 1986. He is the president of and a partner in the firm. He is involved with all aspects of his projects from start to a successful completion. Mr. Hendrick has earned the confidence of his clients that the project will be completed in a professional manner producing a quality product, on schedule.

### *Education*

Land Surveying Related Courses, Gaston College  
Land Surveying, Coastal Carolina Community College  
Land Surveying, Forsyth Technical College

### *Licensure/Certification*

Professional Land Surveyor: NC #L-3046



## JOSEPH R. BRUNO, JR., PLS

*Executive Vice President of Surveying*

Mr. Bruno has more than 39 years of land surveying experience and has been with ESP for 26 years, and a principal in the firm for 23 years. He has managed concurrent multiple projects for clients over the southeastern US and on a national level. Mr. Bruno is in direct charge of four surveying offices and has been instrumental in developing company policy, standard operating procedures, and mobile mapping workflows.

### *Education*

Mining Engineering, West Virginia University  
Mining/Civil Engineering, Fairmont State College  
Suburban Development, North Virginia Community College

### *Licensure/Certification*

Professional Land Surveyor: NC #L-3315



## EDWARD G. HORSTKAMP, III., PLS, CFM

*Executive Vice President of Engineering*

Mr. Horstkamp began his engineering career in 1986 and has been with ESP since 1993. With more than 27 years of engineering, project, and business management and development experience. He is responsible for the growth and supervision of 12 engineering and two land planning departments. Mr. Horstkamp's duties also include business management and development, marketing, project coordination with client and regulatory agencies, voluntary committee involvement, QA/QC, production coordination, and design.

### *Education*

BS, Civil Engineering, Virginia Polytechnic Institute and State University  
Post-Baccalaureate Studies Civil Engineering, University of North Carolina at Charlotte

### *Licensure/Certification*

Professional Engineer: NC #L-017958; SC #17200; VA #0402022370  
Certified Floodplain Manager: NC-08-0273





## SECTION 2

# POTENTIAL CONFLICTS OF INTEREST



# STATEMENT ON POTENTIAL CONFLICTS OF INTEREST

ESP Associates, Inc. has no known conflicts of interest that would impact our ability to complete all work under this agreement with the Lower Cape Fear Water and Sewer Authority.





# 3

SECTION 3  
**FIRM  
QUALIFICATIONS  
AND EXPERIENCE**



# FIRM OVERVIEW



ESP Associates, Inc. (ESP) is a multi-disciplinary firm serving various phases of project development and public safety,

and has been in business for 36 years. Through our surveying, testing and inspections, geo-environmental, civil engineering, , planning, and water resource management services, ***we are dedicated to being a partner in the Lower Cape Fear Water and Sewer Authority's success.***

ESP has been recognized as an ENR Top 500 Design Firm since 2013 and was ranked #43 in the Southeast for 2022.

Our commitment is to bring passion, innovation, and excellence and deliver it with exceptional client service. ESP's approach to service is focused on three objectives: **Listen. Deliver. Improve.**

## ESP BY THE NUMBERS

YEARS IN  
BUSINESS

36

EMPLOYEES

600+

NORTH CAROLINA  
OFFICE LOCATIONS

7

PROFESSIONAL  
LAND SURVEYORS  
(NORTH CAROLINA)

27

## CORE SERVICE DISCIPLINES

### Landscape Architecture & Planning



Land Planning  
Landscape Architecture  
Master Planning  
Feasibility & Due Diligence  
Capital Planning Strategy  
Public Engagement

### Civil Engineering



Site Civil  
Municipal Infrastructure  
Design  
Water Resources /  
Floodplain Mapping  
GIS Services

### Survey and Geospatial



Conventional and GPS  
Mobile Lidar  
3D Laser Scanning  
SUE & 3D GPR  
Pavement & Asset Inventory  
Hydrographic  
Aerial Mapping/UAS  
Stormwater & GIS Inventory

### Geo- Environmental



Geotechnical Engineering  
Dam Consulting  
Geophysics  
Environmental Consulting

### Construction Services

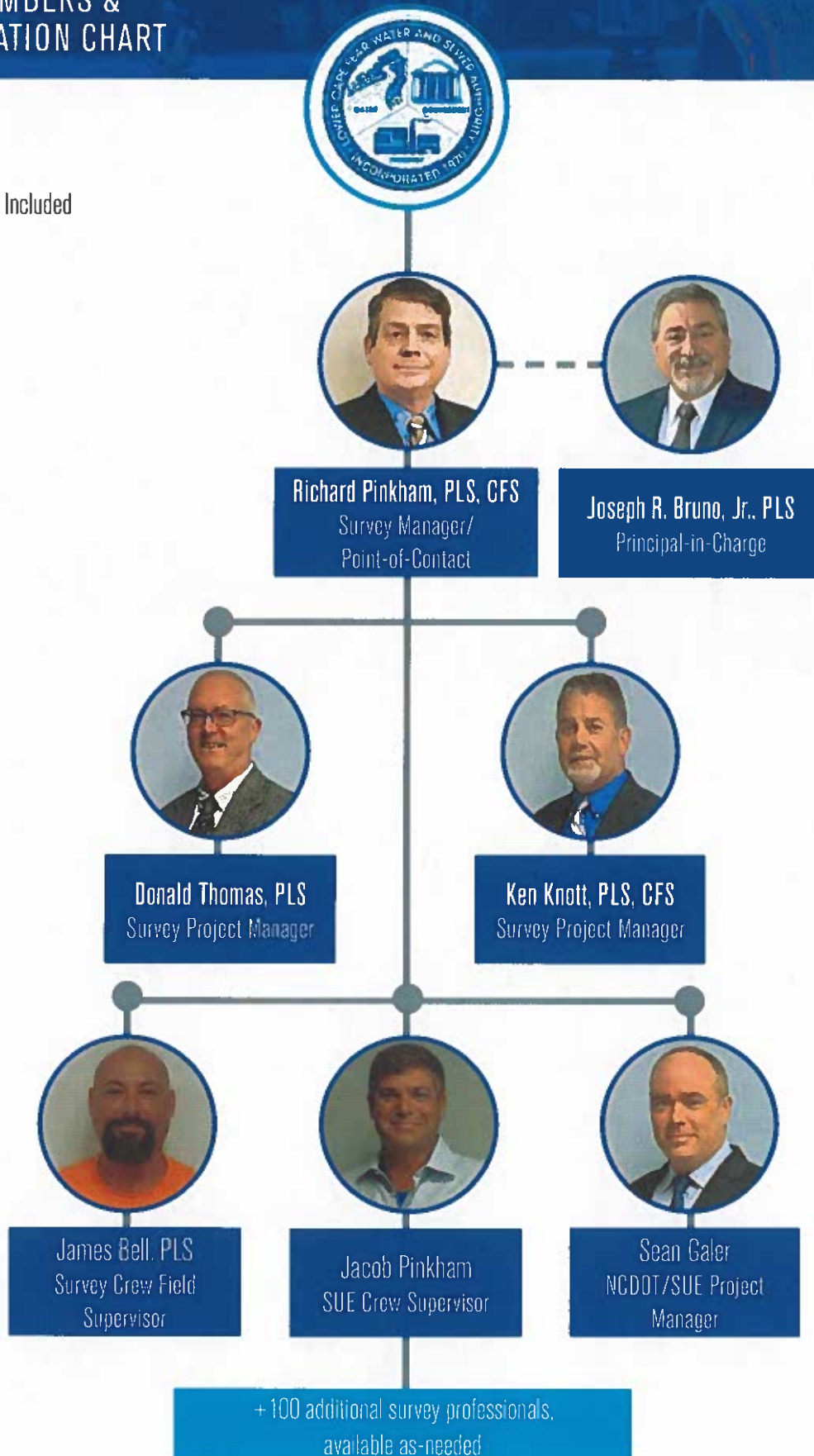


Construction Engineering  
and Inspection (CEI)  
Utility Coordination  
Materials Testing  
Special Inspections



# TEAM MEMBERS & ORGANIZATION CHART

**Bold** = Resume Included







## RICHARD PINKHAM, PLS, CFS

*Eastern NC Division Manager/  
Point-of-Contact*

### *Education*

Drafting & Design Engineering,  
Cape Fear Community College

### *Licensure/Certification*

PLS North Carolina #L-4646  
CFS North Carolina #NC-184

Mr. Pinkham has been working in the civil engineering and surveying fields for more than 27 years. He has managed a variety of projects including lidar/aerial control establishment, system monumentation establishment, existing condition surveys, boundary surveys, ALTA/ACSM surveys, subdivision and recombination surveys, utility surveys, dam and bridge surveys, hydrographic surveys, wetland and environmental containment location, vacuum excavation, topographic surveys, and project base mapping. Mr. Pinkham has managed various assignments for an array of utility providers including Progress Energy, Duke Energy, Dominion Power, Baltimore Gas and Electric (BGE), American Electric Power (AEP), Cape Fear Public Utility Authority (CFPUA) and Piedmont Natural Gas (PNG).

### *Additional Certification*

- Fayetteville State University, Energy Conservation certification
- U.S. Army Logistics School
- U.S. Army Utilities Repair School
- AutoCAD and MicroStation certifications
- Confined Space Entry

### *Key Project Experience*

- **Survey Manager, Cape Fear Public Utility Authority, Wilmington, NC.**
  - Wellhead Observations
  - Castle Hayne Car Wash
  - Kelly Road
  - Williams Property
  - Manassas Drive Wilmington
  - 310 Disney Drive
  - Hanover Reserve Outfall
  - Pump Station 4 and Pump Station 35
  - Post Street outfall
  - SUE Bonnet Lane – Whitehall Subdivision
  - Oak Landing Property Acquisition
  - Runnymede ROW Maintenance Recovery
  - Upper Reach ROW Maintenance Recovery
  - ASR Discharge Monitoring Wells Survey
  - Athens Drive Pump Station 2017
  - Jumping Run Branch Outfall
  - Senova Terrace Easement Recovery
  - Whiskey Creek
  - Grove Point
  - Brookwood Avenue Survey
  - Kitty Hawk Road Track Property Easement
  - Hampton Rd. Design and Easement Survey
  - College Road Interim One
  - Greenfield Lake Outfall Rehab
- **Survey Manager, NCDOT L&S Survey & SUE On-Call, Statewide, NC.** Survey Manager for various surveys throughout North Carolina in association with an open-ended services agreement with NCDOT. Project assignments range from route/baseline surveys, hydrographic surveys, SUE, GPR, vacuum excavation, staking/heavy construction services, confined entry location, boundary surveys, environmental/containment location, high definition scanning, existing condition location, PSD/ROW acquisition, control surveys, structure inventory, bridge location in a variety of environments throughout the State.
- **Duke Energy, NC, SC, FL, IN, OH, KY.** Managed multiple projects system wide for aerial lidar acquisition. Task assignments include aerial panels, monument establishment, ground verification and quality control, PLS-CADD, monument reporting and base station/weather station control for over six hundred lidar projects encompassing 7,500 miles. Lidar related operations also include existing condition line location, new line and tap construction, hydrographic/ bathymetric analysis and as-built operations for multiple requests within the distribution, substation, plant, nuclear and transmission departments.



WILMINGTON, NC



## DON THOMAS, PLS, CFS

*Survey Project Manager*

### *Education*

AS, Civil Engineering, Sumter Area Community College

### *Licensure/Certification*

PLS North Carolina #L-4706

PLS South Carolina #17575

CFS North Carolina #NC-268

Mr. Thomas is a licensed professional and has managed survey crews and supported civil engineering staff. Since joining ESP in 2016, he has worked on a broad range of areas including boundary and topographic surveys, ALTA/NSPS Land Title Surveys, closing/mortgage surveys, FEMA Elevation Certificates, construction staking.

### *Key Project Experience*

- **Cape Fear Public Utility Authority, Wilmington, NC.** Survey Project Manager or Crew Chief for various utility surveys in association with an open ended services agreement with CFPUA since 2008. Projects included: Wellhead Observations; Castle Hayne Car Wash; Kelly Road; Williams Property; Jumping Run Branch Outfall; Senova Terrace Easement Recovery; Blue Point Subdivision; and Gordon Acres Drive.
- **NCDOT On-Call Survey, Statewide, NC.** Survey Crew Chief for various surveys throughout North Carolina in association with an open ended services agreement with NCDOT. Project assignments range from route/baseline surveys, hydrographic surveys, SUE, GPR, vacuum excavation, staking/heavy construction services, confined entry location, boundary surveys, environmental/containment location, high definition scanning, existing condition location, PSD / ROW acquisition, control surveys, structure inventory, and bridge location.

WILMINGTON, NC



## KEN KNOTT, PLS, CFS

*Survey Project Manager*

### *Education*

Engineering Technical Curriculum, Central Virginia Community College

### *Licensure/Certification*

PLS: North Carolina #L-5353

PLS Virginia #0403002654

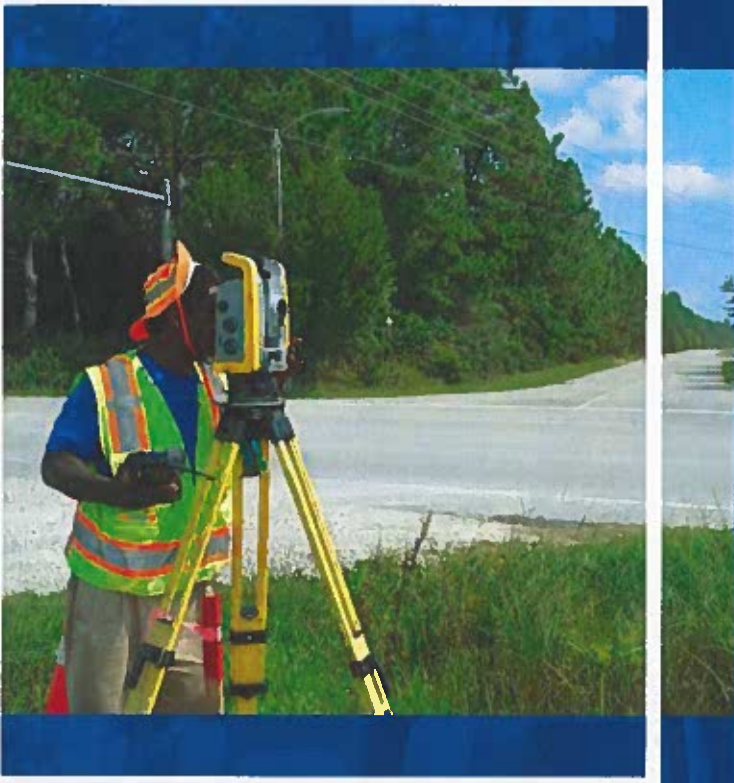
CFS North Carolina #NC-264

Mr. Knott joined ESP in 2018, bringing 32 years of survey experience to the Wilmington team. He is responsible for overseeing projects, managing and scheduling survey crews, preparing proposals for upcoming projects, office computations, processing of field work, maintaining survey equipment and monthly invoices.

### *Key Project Experience*

- **Cape Fear Public Utility Authority, Wilmington, NC.** Survey Project Manager for various utility surveys in association with an open ended services agreement with CFPUA since 2008. Projects included: Wellhead Observations; Castle Hayne Car Wash; Kelly Road; Williams Property; Blue Point Subdivision; Gordon Acres Drive; Whiskey Creek Grove Point; Athens Drive Pump Station.
- **NCDOT On-Call Survey, Statewide, NC.** Survey Project Manager for various surveys throughout North Carolina in association with an open ended services agreement with NCDOT. Project assignments range from route/baseline surveys, hydrographic surveys, SUE, GPR, vacuum excavation, staking/heavy construction services, confined entry location, boundary surveys, environmental/containment location, high definition scanning, existing condition location, PSD/ROW acquisition, control surveys, structure inventory, and bridge location.





4

# 4

SECTION 4  
**EXPERIENCE/  
EXAMPLES OF  
SIMILAR WORK**



## CFPUA AS-NEEDED SURVEYING

WILMINGTON, NC | 2009 - PRESENT

ESP has been providing professional on-call surveying / SUE services to the Cape Fear Public Utility Authority continuously since 2009. The local ESP Wilmington office is located adjacent to the Authority's primary office, which increases our ability to respond quickly and thoroughly. ESP and the CFPUA have an established relationship through a wide range of requests over the years primarily for the Right-of-Way Maintenance and Engineering Departments. Broad task assignments have increased ESP's knowledge of the CFPUA's design and construction processes and we are intimately familiar with the Authority's requirements and expectations. ESP has provided professional service assistance within many facets of CFPUA operations including: GIS, engineering support, topographic, boundary, easement recovery / dedication, environmental location, vacuum excavation, GPR / SUE, as-builts and construction support. ESP has also partnered with other local firms such as Land Management Group and W.K. Dickson to provide the best service possible to the Authority in a team environment when necessary. **Recent projects include:**

### *Client Reference*

Gary McSmith, PE  
Engineering Manager  
Planning & Design Division  
CFPUA  
910.833.4197  
gary.mcsmith@cfpu.org

- Wellhead Observations
- Castle Hayne Car Wash
- Kelly Road
- Williams Property
- 2307 Airlie Rd.
- Manassas Dr. Wilmington
- 310 Disney Dr.
- Hanover Reserve Outfall
- Pumpstations 4 and 35
- Post Street Outfall
- Monterey Heights Well Survey
- Danbury Forest Outfall
- Easement Dedications for 3027 Harvest Rd, 310 Deerfield Rd., 278 Candlewood Dr., 723 Wellington Ave.
- SUE Bonnet Lane – Whitehall Subdivision
- Oak Landing Property Acquisition
- Runnymede ROW Maintenance Recovery
- Upper Reach ROW Maintenance Recovery
- 601 Hilton St. Boundary and Encroachment Surveys
- ASR Discharge Monitoring Wells Survey
- Athens Dr. Pump Station 2017
- Northchase Water Tower
- Jumping Run Branch Outfall
- Senova Terrace Easement Recovery



# NCDOT ON-CALL SURVEYS

STATEWIDE, NC | 1991 - PRESENT

ESP is currently providing location, surveys, mobile mapping, and SUE services for the design of various highway projects and on an as-needed basis. ESP has a 31-year uninterrupted contractual relationship with NCDOT. All services are accomplished using Microstation/Geopak and ESRI Arcview. This contract is a single prime contract where NCDOT handles oversight between disciplines. ESP has completed over 1,000 DOT projects in North Carolina since our original contract in 1990.

## Client Reference

James A. Dodson, PE, PLS  
Project Delivery Engineer  
NCDOT  
919.707.6800  
jdodson@ncdot.gov

## Recent projects include:

- 30052 - SUE | Bridge 352 over Outlaws Pond Spillway on SR 1004
- W5703R - SUE | NC 132 (South College Road) and Bragg Drive
- W5703R - Conventional Survey | NC 132 (South College Road) and Bragg Drive
- W5703h - SUE | US 17 at Hickman Rd (SR 1303) | Brunswick
- WWC-Rail 19 | Corridor Preservation / Restoration of Wilmington & Weldon Rail Corridor (WBS Statewide)
- 090104 - SUE2 | Bridge 104 over Middle Swamp on NC 906 (Midway Road SE) Additional
- U6233PS - Conventional Survey | US 421 (Lake Park Blvd) and Hamlet Avenue in Carolina Beach
- SS4903DP - Conventional Survey | SR 1115 (Old Ferry Connection Road and SR 1124 (Stanbury Road)
- 090104 - SUE | Bridge 104 over Middle Swamp on NC 906 (Midway Road SE)
- Br0046 - Conventional Survey | Bridge 22 over Black River Overflow on US 701 | Sampson
- Br0046 - SUE | Level B/C SUE, Bridge 22 over Black River Overflow on US 701 | Sampson
- B5981 - Conventional Survey | Bridge 16 over CXS Railroad on US 117 | Duplin
- R5021 - Conventional Survey | NC 211 from West of SR 1500 to East of NC 87. | Brunswick





## DUKE ENERGY SURVEYING IDIQ

NC, SC, IN, FL | 2009 - PRESENT

ESP is currently under an IDIQ contract to provide surveying and other support services to Duke Energy on an as needed basis. ESP is performing transmission design surveys throughout North Carolina in association with clearance upgrades and interconnects system wide. Work has been provided for multiple departments and has ranged from transmission lines, environmental, transmission services, subsurface SUE services to standard boundary, construction and hydrographic surveying. We are the primary approved system wide survey vendor with an eastern North Carolina Division office. *ESP completed over 3,500 projects under this contract with 26 task orders in 2021 alone.*

### Client Reference

Gene Garner, PLS  
Duke Energy Carolinas, LLC  
910.975.1567  
gene.garner@duke-energy.com

### Services performed under these contracts typically include:

- Courthouse Research
- Property Owner Contacts
- Control Traversing
- Bench Mark & Profile Levels
- Paneling/Control for Lidar
- Hydrographic Surveys
- Topographic Surveys
- Construction Surveys
- Utility Research
- Utility Designation
- Utility Mapping
- Alignment Staking
- Cross-Sections/DTMs
- Corridor Location
- Tie Plat Mapping/Boundary Surveys
- Property Line Ties and Computations
- R/W Strip Maps
- Vacuum Excavation
- Project Mapping
- GIS
- Engineering Design Surveys
- Final R/W Monuments
- R/W Staking & Easements Staking
- GPS & RTK Surveys
- Danger Tree Surveys
- Volumetric Surveys
- Aerial Clearance Surveys
- Nuclear Geotechnical Support (Soft Dig)
- Construction Excavation (Soft Dig)
- Piedmont Natural Gas





# 5

## SECTION 5 AVAILABILITY OF PERSONNEL

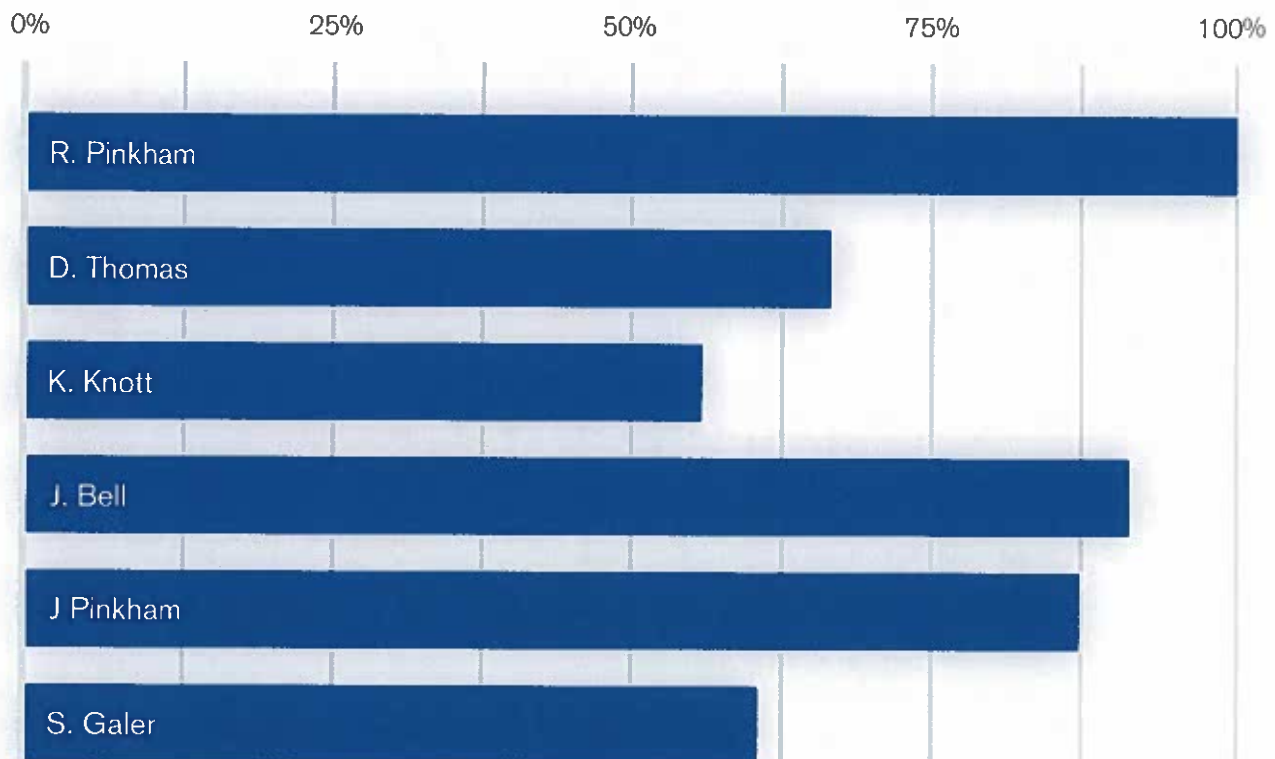


# STATEMENT ON AVAILABILITY OF STAFF

ESP has a strong record of assembling and managing teams to provide service to our clients. This service not only includes meeting project specifications and deliverables, but also adhering to stringent project milestones and schedules. To support this contract, ESP has compiled a local team capable and available to assist as needed. The ESP team will be nimble, flexible, and able to cater to LCFWASA's varied needs.

In addition to the individuals shown on the organizational chart, ESP has a pool of more than 60 additional, qualified staff in our other Carolina offices that can be assigned to this contract to supplement the committed resources.

Below is a chart showing the current availability of ESP's proposed project team, whom we anticipate performing services under this contract. ESP's staff workloads will be adjusted as needed to prioritize services for this contract.



*ESP also has 20 additional North Carolina-based survey crews that are available as-needed to fulfill the requirements of this contract.*





6

# 6

## SECTION 6 PROPOSED WORK PLAN



# SIMPLE WORK PLAN

## ESP PROJECT APPROACH

Prior to providing a formal proposal or task order estimate for our services, our proposed Survey Manager, Richard Pinkham, will verbally or physically meet with the LCFWASA to understand the goals, proposed scope of services and, expected project schedule. He will discuss potential, foreseeable impediments and provide alternatives when possible. Our experience has proven that this process promotes the achievement of goals, overall project success, and ultimately client satisfaction. As each task order is assigned by the LCFWASA, Mr. Pinkham will review the tasks to be completed and prepare an estimate of the work request for LCFWASA review and authorization. Once approved, ESP will assign the project to the most qualified ESP team members.

ESP will prepare a project plan of how the project will be executed to include the team structure, requested scope of services, schedule, and LCFWASA expectations. Mr. Pinkham will then facilitate a project kick-off meeting with the survey team to go over project details. Assignments will be thoroughly reviewed with the team to ensure a clear understanding of the work to meet task requirements. All pertinent documents, standards, checklists, etc. will be provided to the survey team prior to performing field survey and preparation of plats or documents.

At the start of the field work, our survey crew chief will receive daily assignments and project data through a mobile cloud device. As survey progresses, field collected data and other information will then be checked for accuracy and uploaded by the same means, on a daily basis. This process expedites data processing and preparation of survey documents.

Once data is processed and checked by the survey technician, information can begin to be incorporated into the drawings. Again, all pertinent documents, standards, checklists, etc. will be reviewed by the survey technician for reference prior to preparation of plats and documents. All survey drawing deliverables will typically be prepared in AutoCAD file format (.dwg) and can also be formatted in Microstation (.dgn) or ESRI (.shp) upon LCFWASA request. Data submission can also be formatted upon request in ASCII (.csv), Adobe (.pdf), sealed survey hardcopy/sealed certification letter.

All survey deliverables will then be reviewed by an ESP quality control manager and/or Mr. Pinkham prior to submittal. This review shall include, at a minimum, the following activities: compliance with project requirements, compliance with state minimum standards, technical accuracy and adequacy, compatibility with other associated project documents, and compliance with any previous review comments. All ESP surveys are tied to North Carolina state plane values (FIPS 3200) reduced in U.S. survey feet at the current NGS datum (NAD 1983 / NSRS 2011 / NAVD 1988 / Geoid 18).

## QUALITY CONTROL

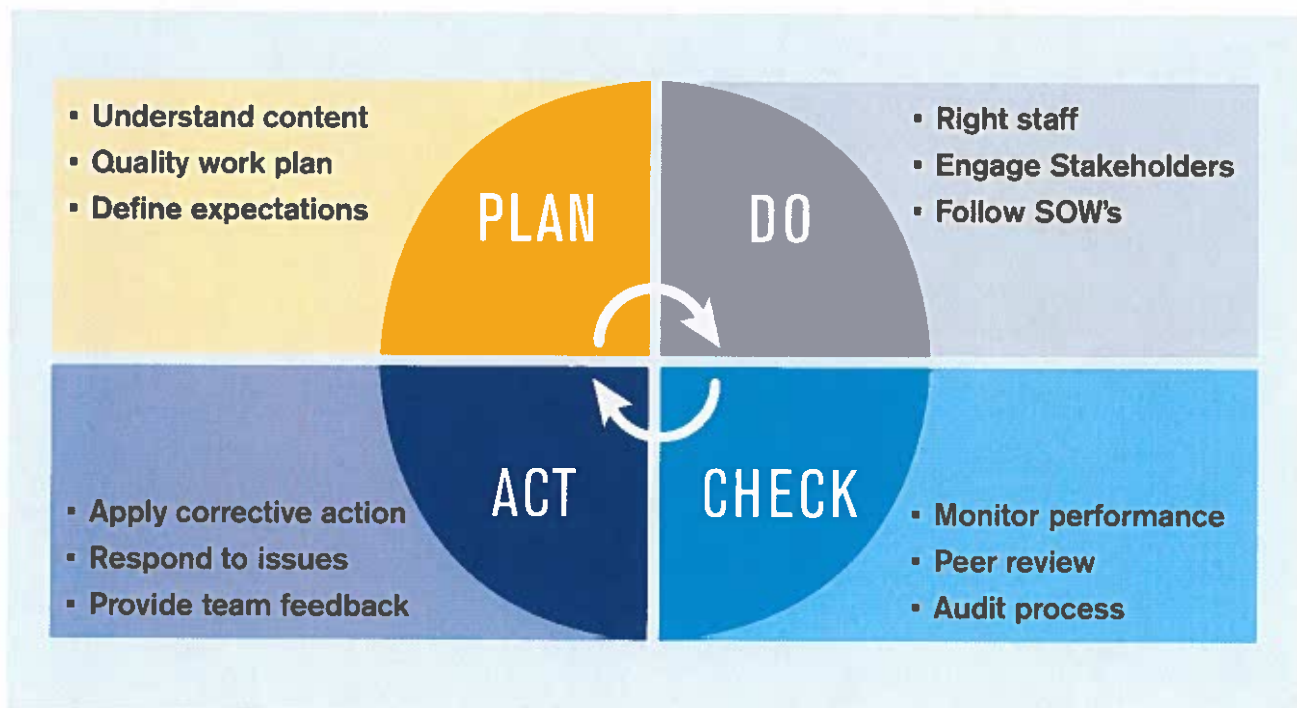
The mission of the ESP team's quality program is to provide quality services that meet or exceed the needs of the project, are in line with current and emerging practices, meet contractual and regulatory requirements, adherence to accuracy standards and are completed on time and within budget. Mr. Pinkham will be responsible for the overall QA/QC and will ensure that the quality program is followed and quality controls are adhered to.

Specifically, ESP will institute the following controls:



- All contracts are required to meet licensing, certification and health and safety program goals
- Project schedules are tailored to reflect adequate time for independent review of work products throughout the entire project
- All work will be performed under our senior review program, whereby all analysis, accuracies, calculations, technical evaluation and/or reporting are all reviewed by a senior level associate prior to publication and distribution
- Health and safety performance is monitored, and any necessary corrective actions are taken immediately
- QA/QC audits are performed to ensure project quality goals are met

## QUALITY PROCESS



## SURVEY PROJECT APPROACH

### Stakeholder Notification

Our team will coordinate with LCFWASA to provide notice to property owners of our presence and purpose on the project site. Notification of utility companies will also be performed at this time.

### Establish Horizontal and Vertical Control Network

ESP team surveyors will establish a project control network using a combination of system and conventional surveying methods. Field crews will use trigonometric and differential leveling to establish an accurate and precise vertical control network. The control points will be established at a density sufficient to insure quality horizontal and vertical location throughout the design survey phase of the project. These control points will also serve as benchmarks during the construction phase of the project.



### **Perform Courthouse Research**

Survey technicians or supervisors shall obtain current deeds, maps, plats, and easement documents of record for affected parcels in the project or in the vicinity of requested survey operations. Thorough investigations will be made along the corridor to properly represent existing property lines and/or dedicated easements. This record information will be compiled into a project database and/or CADD file for future use throughout the life of the project. Utility easements and roadway right-of-way will also be investigated and mapped. The LCFWASA will provide record drawings and GIS shape files of facilities when available.

### **Boundary Ties and Existing Boundary Mapping**

Survey crews will recover and observe the existing property lines, right-of-ways and recorded easements field evidence within the project limits. Our crews will perform sufficient fieldwork to complete parcel boundary analysis for small parcels, less than one (1) acre in area, within the project limits. Larger parcels, one (1) acre in size and larger, shall be located sufficiently to map the property lines which fall within the project survey limits.

### **Supplemental Topographic and Planimetric Field Surveys**

Survey crews can perform conventional, laser scanning, subsurface utility, hydrographic, aerial drone LiDAR, planimetric and topographic surveys to supplement LCFWASA operations. Obscured areas and features that could not be mapped with GPS will be surveyed and mapped conventionally. Digital terrain data will be collected with sufficient density to show one-foot contour interval topography. Above-ground features will be located and mapped to LCFWASA specifications and can include the following:

- Location of curb and gutter and edge of pavement or gravel roadways
- Buildings, traffic lanes, and driveways - location, type, and size
- Landscape areas, woods lines, all trees in landscaped areas greater than six (6) inches dbh, all stand-alone trees and signature trees (greater than forty (40) inches dbh)
- Gravity utilities (Storm and Sanitary)- structure location, pipe invert and size measurements, pipe material
- Signs and Fences - location, type and size
- Above-ground utility appurtenances
- Overhead utilities and power easements if present
- Confined Entry

### **Project Mapping**

Survey technicians will compile final mapping for the project at the completion of field work. Once prepared, final field checks will be performed to ensure quality and completeness, and then the data set will be delivered to the LCFWASA. Survey technicians shall prepare survey plats for use in the recovery of easements and rights-of-way necessary for LCFWASA Projects as directed. Plats shall include LCFWASA easements and survey hard copies kept on file at the ESP Wilmington division office. Surveys can also be provided on reproducible medium and/or relayed in Adobe Acrobat (.PDF) format. Preliminary plats will be provided to the LCFWASA for review prior to finalizing survey plats. Legal descriptions of right-of-ways and easements can be provided upon request.

### **Understanding of Project Approach**

Each assigned project begins with a scoping meeting between an ESP project manager(s) and a LCFWASA project manager(s). The purpose of this meeting is to discuss all of the project details (i.e. limits, tasks,



deliverables, formats, procedures, accuracies, control parameters, safety, due date, etc.) that will directly affect the cost and methods ESP will use to perform the services requested.

If entering on private property, it is essential that a diligent effort be made to contact all stakeholders and property owners affected within the project limits via mail or hand-deliver of property owner contact forms. This provides property owners, utility companies, and others with a prior notice of work to be performed and also with contact numbers for any questions regarding the impact the project may have on their property or facilities. This step may also help to identify disgruntled property owners who may interfere with the progress of the project.

The final task of each project involves the submission of a specific set of associated documents to LCFWASA that is necessary for project closeout and procedural compliance. ESP has a proven track record to meet our client's high standards. Lastly, our crews, managers, and office personnel all understand that personal and public safety is our top priority. At no time will safety be compromised for schedule or production.

## PROPOSED SCHEDULE

**Notice of Award:** December 12, 2022

**ESP Mobilizes/Ready to Begin Work:** December 14, 2022

ESP's team will add crews to accommodate the schedule goal and will aim to submit two weeks prior to the deadline.

ESP has the resources and staff necessary to meet the six (6) - month time frame for this contract.





## SECTION 7

# CLIENT REFERENCES



# CLIENT REFERENCES

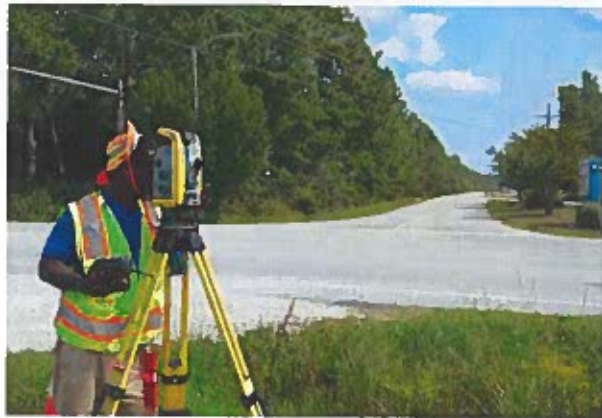
## CFPUA AS-NEEDED SURVEYING

Gary McSmith, PE  
Engineering Manager  
Planning & Design Division  
910.833.4197  
gary.mcsmith@cfpua.org



## NCDOT ON-CALL SURVEYS

James A. Dodson, PE, PLS  
919.707.6800  
jdodson@ncdot.gov

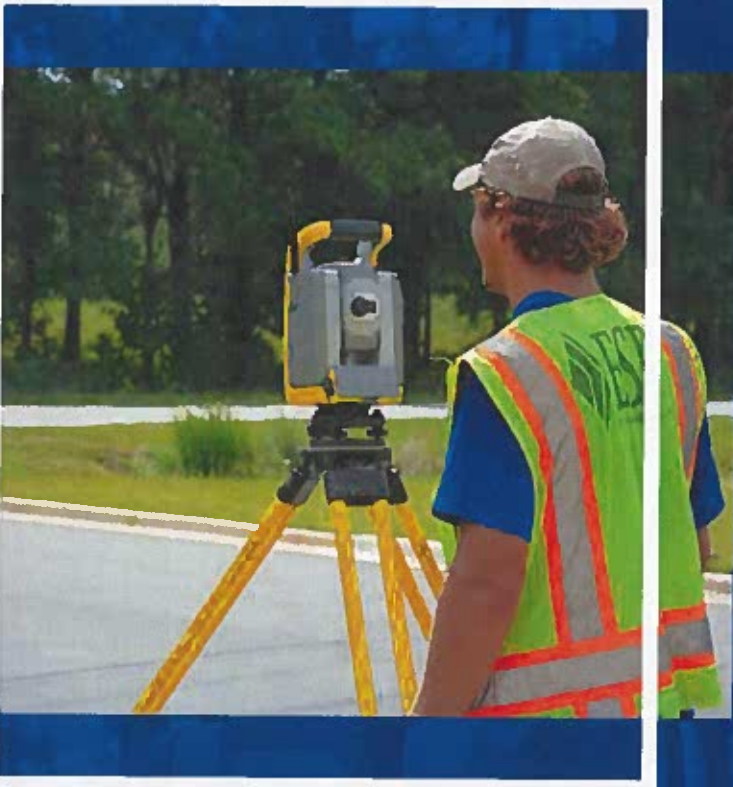


## DUKE ENERGY PROGRESS SURVEYING IDIQ

Gene Garner, PLS  
Duke Energy Carolinas, LLC  
910.975.1567  
gene.garner@duke-energy.com





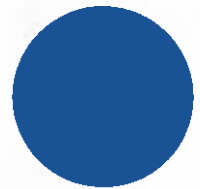


# 8

SECTION 8  
**OTHER  
PERTINENT  
INFORMATION**



# EQUIPMENT LIST



## Conventional Survey Equipment

78 Trimble S9/S8/S7/S6 Robotic Total Stations  
 4 Trimble S5 Robot  
 6 Trimble SX10 Robotic Total Stations w/Scanning  
 24 Trimble Digital Levels  
 24 Various Second Order Levels  
 3 Invar Rod Leica GPCL 3  
 1 Wild Model NA2  
 2 Leica NA2  
 14 Tablets  
 83 Trimble TSC3 Data Collectors  
 18 Trimble TSC7 Data Collectors  
 2 Trimble VX 1" Robotic Total Stations  
 1 Data Collector Tablet Trimble  
 12 Data Collector Trimble TSC7's  
 1 K&E Paragon  
 1 Zeiss TH2 (1 sec)  
 1 Topcon 310  
 1 Geodimeter 520  
 3 Trimble 5603, Autolock

## Global Positioning System (GPS)

87 Trimble R10/R8 GNSS RTK GPS  
 3 Trimble 5800  
 1 Trimble Pro XT  
 2 Trimble PRO XR & Recon Data Collector  
 4 Trimble R10-2  
 4 Trimble R12  
 8 Trimble TDL450 High Power Base Radio  
 12 Radio Telemetry Trimble TDL-450H  
 1 Trimble Pathfinder Pro XRS  
 1 Tablet Trimble Data Collector  
 6 Statewide RTN licenses with Trimble VRSNow  
 6 FPRN FDOT licenses

## GPR Equipment

7 Noggin Plus Smartcart  
 1 GPR SmartHandle  
 3 250 MHz Antennas  
 1 500 MHz Antenna  
 1 1000 MHz Antenna  
 7 GPR LMX100 Sensor Antennas  
 7 Digital Video Logger

## UAS Equipment

1 Skyfront Perimeter 8 UAV-Hybrid  
 1 MicroDrones MD4-3000 Drone (UAV)  
 1 Riegl Vux-120 LiDAR Sensor  
 1 Riegl Mini Vux-1DL LiDAR Sensor  
 1 Sony A7 Riv (62 mp)  
 1 Sony Rx1 Rii (42 mp)  
 1 DJI Phantom Pro 3  
 1 DJI Phantom 4 RTK  
 1 DJI Inspire 2 w/camera  
 1 DJI Matrice 100  
 1 SteadiDrone Quadcopter  
 1 Sony A6000 Digital Camera

## SUE Designating and Excavating Equipment

1 High-Speed 3D GPR Array  
 5 Vacuum Excavation Truck Vacmaster System 4000  
 34 Utility Designating Receivers  
 39 Utility Designating Transmitters  
 1 Impulse Radar PinPointR GPR System  
 1 Radio Detection 8100 Electromagnetic Pipe and Cable Locator  
 1 Radio Detection 8100 Electromagnetic Pipe and Cable Locator  
 1 Heath SureLock Electromagnetic Pipe and Cable Locator  
 1 Impulse Radar Raptor GPR Array  
 1 Vivax Metrotech vCam-5 Pipe Camera

## Scanning Equipment

1 Trimble MX9 Mobile Spatial Imaging System  
 2 Trimble MX8 Mobile Spatial Imaging Systems  
 1 Riegl VMX-1HA Mobile LiDAR System  
 1 Riegl VZ-400  
 1 Leica Pegasus Two Mobile LiDAR System  
 2 Leica ScanStation C10  
 1 Leica ScanStation P40  
 1 Leica ScanStation P20  
 1 Leica HDS7000  
 1 Nikon D810  
 1 IrisPRO Pave Automated Pavement Data Collection Vehicle  
 1 ESP Pavement System with Dalsa Spyder 3 Linescan Camera





### ESP Corporate Office

3475 Lakemont Boulevard  
Fort Mill, SC 29708  
803.802.2440

Mailing Address: P.O. Box 7030 Charlotte, NC 28241  
800.960.7317 | [www.espassociates.com](http://www.espassociates.com)

#### Wilmington

211 Racine Drive  
Suite 101  
Wilmington, NC 28403  
910.313.6648

#### Concord

7144 Weddington Rd. NW  
Suite 110  
Concord, NC 28027  
704.793.9855

#### Cornelius

20484 Chartwell Center Dr.  
Suite D  
Cornelius, NC 28031  
704.649.2863

#### Raleigh

2200 Gateway Centre Blvd.  
Suite 216  
Morrisville, NC 27560  
919.678.1070

#### Greensboro

7011 Albert Pick Rd.  
Suite E  
Greensboro, NC 27409  
336.334.7724

#### Charleston

2154 North Center Street  
Suite E-503  
North Charleston, SC 29406  
843.714.2040

#### Nashville

500 Wilson Pike Circle  
Suite 310  
Brentwood, TN 37027  
615.760.8300

#### Pittsburgh

One Williamsburg Place  
Suite G-5, Box 13  
Warrendale, PA 15086  
724.462.6606

#### Bradenton

518 13th Street West  
Bradenton, FL 34205  
941.345.5451

#### Indianapolis

8673 Bash Street  
Indianapolis, IN 46256  
317.537.6979

#### Albuquerque

1203 West Ella Drive  
Corrales, NM 87048  
505.314.1322

#### Birmingham

291 Cahaba Valley Parkway North,  
Suite A  
Pelham, AL 35124  
205.664.8498

### Vickrey & Associates, LLC - An ESP Company

#### San Antonio

12970 Country Parkway  
San Antonio TX 78216  
210.349.3271

#### Austin

3600 West Parmer Lane, Suite 175  
Austin, TX 78727  
512.494.8014

#### McAllen

1216 East Jasmine Avenue, Suite C  
McAllen, Texas 78501  
956.340.0045





Request for Qualifications

## PROFESSIONAL SURVEYING SERVICES

SUBMITTED TO

**LOWER CAPE FEAR WATER AND SEWER AUTHORITY**

1107 New Pointe Blvd, Suite 17 | Leland, NC 28451

SUBMITTED BY

**MCKIM & CREED**

Wilmington, NC

910.343.1048 | [mckimcreed.com](http://mckimcreed.com)



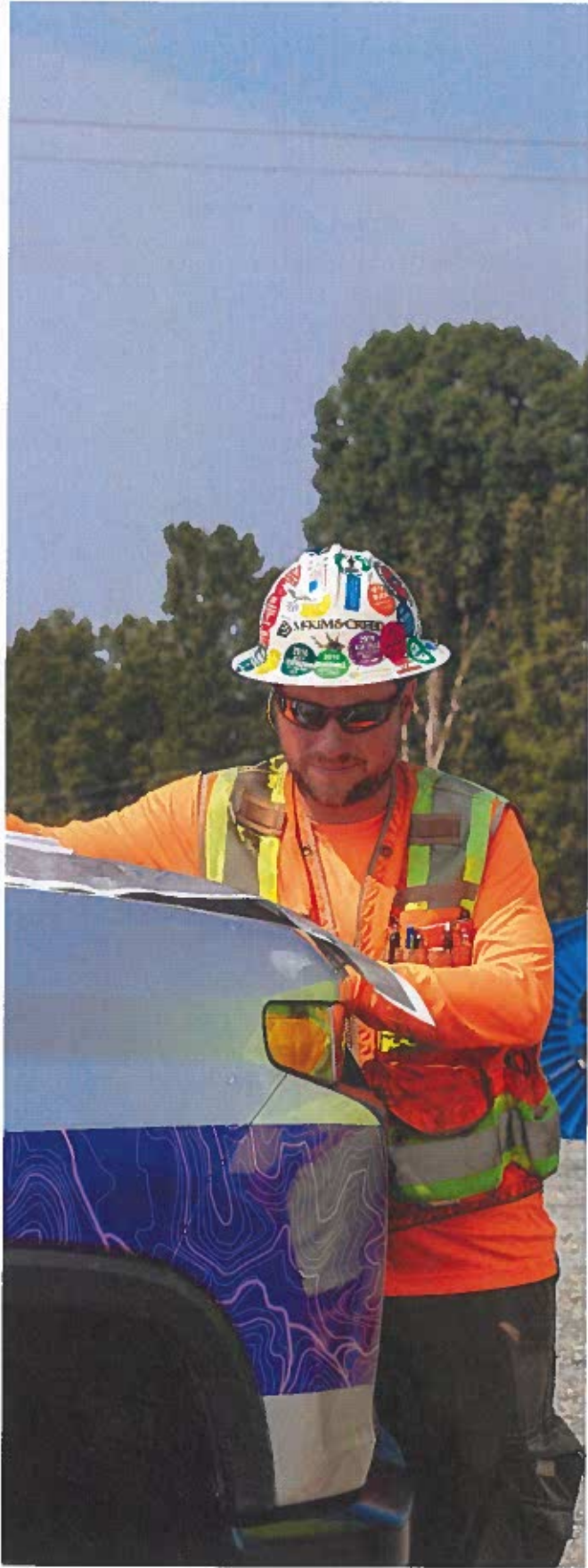


Table of

# CONTENTS

|    |                                 |    |
|----|---------------------------------|----|
| 1. | Letter of Interest              | 01 |
| 2. | Firm Overview                   | 02 |
| 3. | Project Team                    | 03 |
| 4. | Project Experience / References | 07 |
| 6. | Project Approach                | 09 |



November 14, 2022

Danielle Hertzog  
Finance Administrative Assistant,  
Lower Cape Fear Water and Sewer Authority  
1107 New Pointe Blvd, Suite 17,  
Leland, NC 28451



**RE: RFQ for Professional Survey Services | 10 Mile Easement**

Dear Ms. Hertzog and Members of the Selection Committee:

McKim & Creed recognizes the critical nature of Lower Cape Fear Water and Sewer Authority (LCFWSA) municipal projects and the surveying services that are required. The success of this project depends on reliable, timely service from consultants. With a proven track record on government contracts and various municipal clients, the LCFWSA can rely on the accurate, efficient, and professional service necessary to achieve project success. We invite you to contact our references, who can best attest to the quality of our work and the professionalism of our staff.

Having recently completed the initial 14-miles segment of this project, McKim & Creed understands the challenges encountered and what is required to bring this project to completion. Our team has recently performed a desktop study of the affected parcels along the route. Existing deed and easement research have been completed and platted. This benefits LCFSWA by requiring minimal office time to begin this project and get "boots on the ground." Additionally, this aids our team in completing this project as sooner.

LCFWSA can rely on McKim & Creed to provide the survey expertise and resources necessary to project schedules. Our highly-qualified staff is available and committed to provide the highest level of professional service on surveying projects. As a registered North Carolina firm, McKim & Creed is licensed to provide surveying and engineering services in accordance with the proposed scope of work. Our workload, while ample, can readily accommodate the LCFWSA's needs in terms of personnel and equipment.

We appreciate the opportunity to submit our qualifications for this project and look forward to a positive and professional relationship with the Lower Cape Fear Water and Sewer Authority.

Sincerely,

McKim & Creed, Inc.

**David Jones, PLS**  
Senior Vice President  
djones@mckimcreed.com

**Tony Boahn, PE**  
Vice President  
tboahn@mckimcreed.com

► McKim & Creed does not have a conflict of interest





## Firm Overview

McKim & Creed, Inc. is a committed team of talented professionals who improve the quality of life for businesses and communities by providing world-class engineering and geomatics solutions. As an employee-owned company that has been in operation since 1978, we provide these services through excellent work, dedicated service and a passionate desire to solve problems and impact lives.

McKim & Creed's depth of local resources offers the flexibility to provide experienced staff at your disposal to keep your project on track. Our solid background and experience have resulted in the method and controls being in place to balance staff requirements while maintaining quality, schedule and budget for our clients. McKim & Creed is committed to meeting budget and schedule requirements.

Our team has the experience, personnel and resources to perform all necessary surveying tasks within established project schedules. Our team of surveyors brings many years of diverse experience working with municipalities and local government agencies and we offer a solid reputation with professionals who are committed to providing efficient project management and the quality control necessary to coordinate efforts during all phases of surveying services.

Our firm's relationship with Lower Cape Fear Sewer and Water Authority, as well as other area municipalities and NCDOT, has been ongoing for several years. These relationships are built upon trust obtained by:

- ▶ Past performance of our surveying and mapping team
- ▶ Proven ability to provide high-quality geomatics services
- ▶ Providing cutting-edge technology and cost-effective data collection
- ▶ Being proactive and responsive to our clients' needs

### BENEFITS TO LCFSWA

- ✓ Comprehensive local project management and surveying team
- ✓ Knowledge of LCFSWA systems and procedures
- ✓ Initiate knowledge of existing project challenges and the experience to address them
- ✓ Experience with local roadways, communities, environments and infrastructure
- ✓ Diverse professional team for maximized response to LCFSWA needs

McKim & Creed has extensive experience performing easement/right-of-way plats. Knowing about a property's easements and what rights they afford to whom is very important. Our professionals understand that the only way to find out for sure what existing easements there are is to conduct a thorough review of the land records for the area.

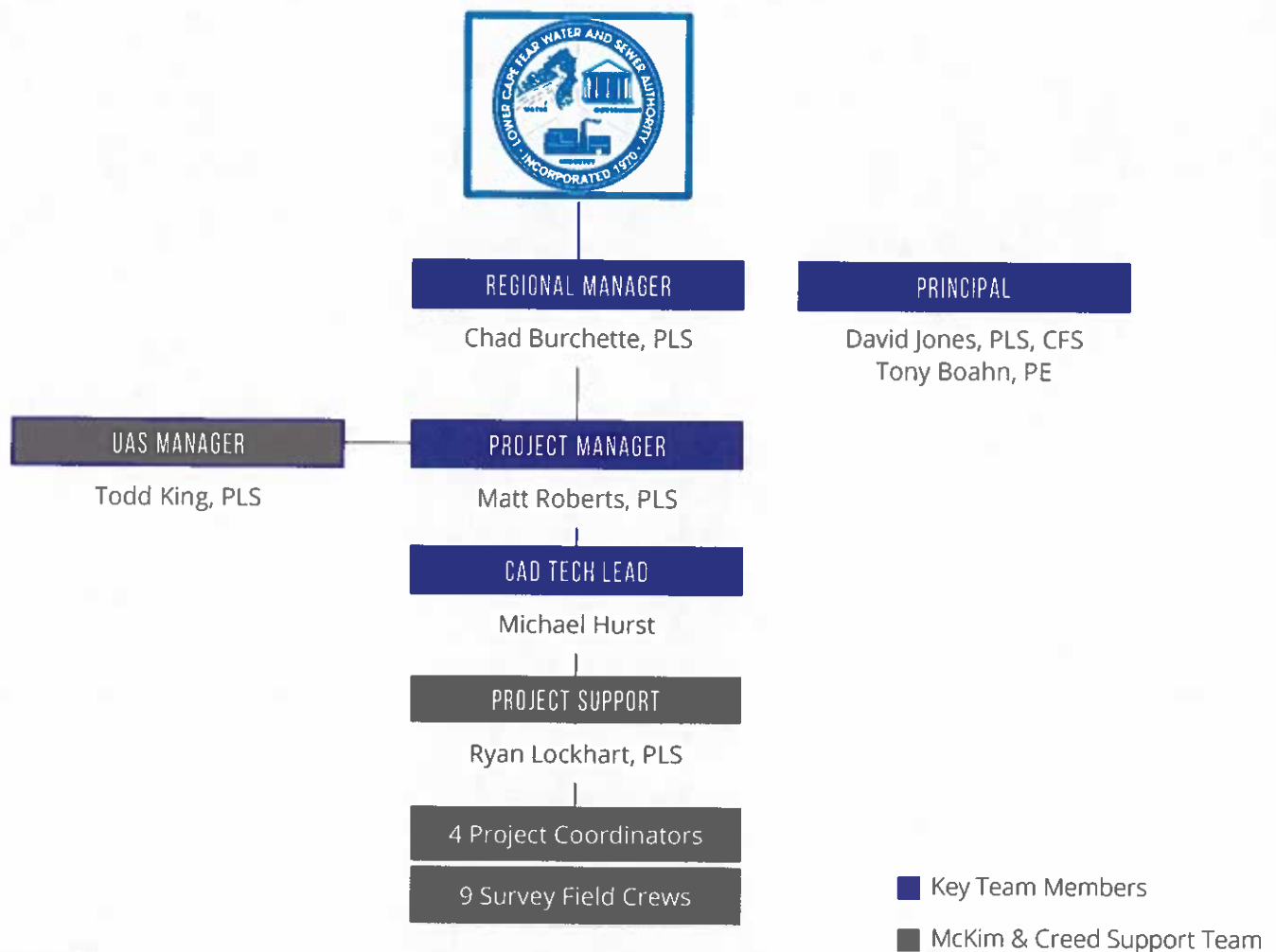
Sound boundary decisions can only be made with a historical understanding of how that strip or parcel of land was surveyed and how title was transferred. McKim & Creed takes a research-based approach to all boundary and roadway alignment services. Our experience includes completion of some unique boundary surveys which have included:

- ▶ Surveying and setting monuments for 14 miles of the AICWW Right of Way in Core Creek, NC and individually mapping 150 encroachments as exhibits for the Government
- ▶ Eagle Island Disposal Area boundary reestablishment using 1949 photography to put back the original centerline of Alligator Creek which is the deeded property line
- ▶ Large boundary surveys at Fort Bragg and Cherry Point.



## Project Team

Our team is made up of highly qualified professionals and technicians with many years of diverse experience in the surveying field. One of the greatest lessons learned while working together is that routinely planned and open communication is key and makes the difference between project success and project failure. Our team has a system to approaching projects that allows for unique and diverse solutions, but also routine and expected communication, check-points and effective collaboration. Together, we utilize a combined team experience to creatively address problems and develop a workable, effective solution.



**OUR PROJECT MANAGEMENT TEAM IS STRONGER THAN EVER.** This team works extremely well together sharing expertise, personnel and equipment needed to meet critical deadline with quality deliverables. Each Manager has Senior Technicians, CAD Technicians and abundant field crews that are crossed-trained and uniquely qualified to handle a very large workload. Our constant commitment to teaching, training and mentoring our team members has been the key to success and we are always looking to grow this incredible team.





## Tony Boahn, PE

### PRINCIPAL

#### QUALIFICATIONS

- ✓ Brunswick County Comprehensive Wastewater Master Plan
- ✓ Wastewater & Water Treatment Plants
- ✓ NPDES Permitting
- ✓ Wastewater & Water Pumping Systems
- ✓ Wastewater Collection & Transmission
- ✓ Water Distribution Systems

#### EDUCATION

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

A.A.S., Civil Engineering,  
Sandhills Community  
College

#### LICENSURE

Professional Engineer, NC

#### AFFILIATIONS

American Water Works  
Association

Society of American  
Military Engineers (SAME)

National Society of  
Professional Engineers

Tony Boahn has been responsible for all aspects of project management, design, and construction administration of water and wastewater projects. He has worked on a wide variety of projects including infrastructure master plans, pump stations, sewer force mains, gravity sewer systems, water distribution systems, and water and wastewater treatment plants. Mr. Boahn is experienced in projects involving state and federal funding programs including Community Development Block Grant (CDBG), Economic Development Agency (EDA), United States Development Agency (USDA), Disaster Relief Initiative (DRI), State Revolving Fund (SRF), and State Revolving Loan (SRL). He is well versed in permitting, bid and award procedures, and construction administration of water and wastewater utility projects throughout North Carolina.

#### ► Project Experience

**US 421 Raw Water Main Relocation Design, Lower Cape Fear Water & Sewer Authority (LCFWSA), Wilmington, NC:** Mr. Boahn served as project manager to provide design, bid, permit, and construction phase services for the relocation of approximately 700 linear feet of new 48-inch ductile iron raw water main at US 421 and Fishing Creek. The new main will connect to the existing 48-inch PCCP raw water main on the west side of US 421 and then run parallel to the NCDOT US Highway 421 right of way for approximately 550 feet south. This 550 linear foot segment of new raw water main will require a new utility easement. The new raw water main will then cross under US 421 for approximately 150 linear feet. Based on recent consultations with NCDOT, open cut of the pipeline will be allowed under the US 421 pavement sections. This 150 linear foot segment of new raw water main will be constructed under a Standard NCDOT Encroachment Agreement.

**LCFWSA 60-inch Parallel Raw Water Main EA and PER; Lower Cape Fear Water & Sewer Authority (LCFWSA) | Wilmington, NC:** Mr. Boahn served as project manager for the preparation of a USDA Rural Development Preliminary Engineering Report and Environmental Assessment for approximately 14 miles of 60-inch diameter raw water main to the existing 45mgd water distribution system that is insufficient for meeting the area's increased water demands.

**Kings Bluff Pump Station Expansion; Lower Cape Fear Water & Sewer Authority (LCFWSA) | Bladen County, NC:** Mr. Boahn served as project manager. Detailed design, bid and award, construction administration, and construction observation services were provided to guide this project from conceptual design to final construction completion. This project involved expansion of the 45 mgd water pumping station to 60 mgd consisting of the replacement of three vertical turbine pumps with new 1,600 HP medium voltage vertical turbine pumps, SCADA Improvements, electrical modifications, Variable Frequency Drives (VFD's), and a new electrical building required to house the necessary equipment.

**CFPUA 54-inch Parallel Raw Water Main Design Services; Cape Fear Public Utility Authority (CFPUA) | Wilmington, NC:** Mr. Boahn served as project manager to help CFPUA manage raw water resources by designing and constructing a 14-mile, 54-inch transmission main that will expand capacity, provide redundancy and reliability, and support regional growth.





## David Jones, PLS, CFS

### PRINCIPAL

### QUALIFICATIONS

- ✓ Boundary Surveys
- ✓ Topographic Surveys
- ✓ Hydrographic Surveys
- ✓ Control Surveys
- ✓ Wetland Surveys
- ✓ GPS Surveys
- ✓ Construction Staking

### LICENSURE

Professional Land  
Surveyor, NC, KY, AL, ND

Certified Floodplain  
Surveyor, NC

U.S. Coast Guard Captain's  
License

### AFFILIATIONS

North Carolina Society of  
Surveyors (NCSS)

National Society of  
Professional Surveyors  
(NSPS)

ACEC - COPS Executive  
Committee Member

David Jones serves as Senior Vice President to McKim & Creed's Geoamtics group. Throughout his 38 years of experience, he has performed and managed numerous survey projects ranging from one acre sites to thousands of acres all along the eastern seaboard from Vermont to Florida and in the Caribbean. As part of his duties, Mr. Jones is responsible for quality assurance and quality control and making sure that McKim & Creed is responsive and meets our commitments to our clients.

### ► Project Experience

**CFPUA 54-inch Parallel Raw Water Main Design Services; Cape Fear Public Utility Authority (CFPUA) | Wilmington, NC:** Mr. Jones provided surveying services. The current capacity of the Kings Bluff facility is limited to approximately 48 mgd by the existing 14-mile, 48-inch transmission main. However, projections indicate that customer demand will exceed this capacity within the next three to eight years. This regional solution to managing raw water resources involved design and building a 14-mile, 54-inch transmission main that will expand capacity, provide redundancy and reliability, and support regional growth.

**Kings Bluff Pump Station Expansion; Lower Cape Fear Water & Sewer Authority (LCFWSA) | Bladen County, NC:** Mr. Jones was project surveyor. Detailed design, bid and award, construction administration, and construction observation were provided to guide this project from conceptual design to final construction completion. Project involved expansion of the 45 mgd water pumping station to 60 mgd consisting of the replacement of three vertical turbine pumps with new 1,600 HP medium voltage vertical turbine pumps, SCADA Improvements, electrical modifications, variable frequency drives, and a new electrical building required to house the necessary equipment.

**Barnard's Creek Lift Station 76 Upgrade, Cape Fear Public Utility Authority (CFPUA) | Wilmington, NC:** Mr. Jones provided surveying services to upgrade CFPUA's Barnard's Creek Pump Station to approximately 2.25 mgd of capacity. The proposed upgrades to Barnard's Creek Pump Station included a new wetwell, valve vault, electrical building, entrance structure with wastewater grinders, electrical and SCADA upgrades, connection to the existing 30-inch Barnard's Creek Outfall sewer, a new 42-inch influent sewer, a new 24-inch sewer stub out to facilitate connections by future development, and a new segment of 20-inch force main to connect to the existing Barnard's Creek force main, which ultimately discharges to Southside WWTP.

**Barnard's Creek and Mott's Creek Pump Station Improvements, Cape Fear Public Utility Authority (CFPUA) | Wilmington, NC:** Mr. Jones served as survey manager for Barnard's Creek and Mott's Creek Pump Station improvements. These improvements will increase Barnard's Creek's capacity to 1.43 mgd, while at the Mott's Creek Pump Station, planned improvements are proposed to increase its capacity to 1.56 mgd. Quality level B SUE and survey services were performed along River Road from Barnard's Creek Pump Station to Southside WWTP in support of the Barnard's Creek force main design.

**Southside Wastewater Treatment Plant Expansion, Cape Fear Public Utility Authority (CFPUA) | Wilmington, NC:** Mr. Jones served as project surveyor providing services in the expansion of Cape Fear Public Utility Authority's Southside Wastewater Treatment Plant. Surveying and subsurface utility engineering were performed to establish controls, locate property lines and existing easements and establish a grid for the site.





### **Chad Burchette, PLS | Regional Survey Manager**

Chad Burchette has over 20 years experience performing boundary and topographic surveys. Mr. Burchette's strong scheduling and organizational skills have earned him the reputation for consistently completing high-quality, well-managed projects that exceed his clients' expectations.

#### **EDUCATION**

- ▶ A.A., Land Surveying Technology, Guilford Technical Community College

#### **LICENSURE**

- ▶ Certified Survey Technician Level I
- ▶ Professional Land Surveyor, NC
- ▶ OSHA 10-hour Safety Training
- ▶ Certified Survey Technician Level III Construction

#### **SELECT PROJECT EXPERIENCE**

- ▶ Kings Bluff Pump Station Expansion; Lower Cape Fear Water & Sewer Authority (LCFWSA) | Bladen County, NC
- ▶ LCFWSA 60-inch Parallel Raw Water Main EA and PER; Lower Cape Fear Water & Sewer Authority (LCFWSA) | Wilmington, NC
- ▶ US 421 Raw Water Main Relocation Design; Lower Cape Fear Water & Sewer Authority (LCFWSA) | Wilmington, NC



### **Matt Roberts, PLS | Project Manager**

Matt Roberts has over 14 years of experience overseeing complex projects and coordinating the efforts of multiple field crews. With a strong background in innovative geospatial technology applications, he provides multidisciplinary approaches to diverse project challenges. His strong scheduling and organizational skills have earned him the reputation for consistently completing high-quality, well-managed projects that exceed his clients' expectations. Mr. Roberts' survey experience includes: GPS data collection and post processing for large stormwater systems; wetlands mapping; GIS as-built inventories; roadway and route surveys; large multi-tract ALTA surveys; topographic and utility surveys; construction stakeout; boundary surveys, etc

#### **EDUCATION**

- ▶ B.S., Geography: Geographical Information Systems, UNC Charlotte
- ▶ A.A., Business Administration, Cleveland Community College
- ▶ Attended, Geomatic Engineering, NC A&T State University

#### **LICENSURE**

- ▶ Professional Land Surveyor, NC, SC

#### **SELECT PROJECT EXPERIENCE**

- ▶ Northern Regional Pump Stations and Force Mains, Phase A; Cape Fear Public Utility Authority (CFPUA) | New Hanover County, NC
- ▶ US 421 Raw Water Main Relocation Design; Lower Cape Fear Water & Sewer Authority (LCFWSA) | Wilmington, NC
- ▶ Davidson Water Transmission Main Phase III-Extension to NC 115; Charlotte Water | Davidson, NC
- ▶ Dairy Branch Tributary Sewer Improvements; Charlotte Water | Charlotte, NC



### **Michael Hurst, CST Level III | CAD Technician**

Mr. Hurst has been with McKim & Creed for 23 years, the first five years as a survey crew party chief and the past 18 years as a CAD technician. Since becoming a CAD technician Mr. Hurst has become proficient in Terramodel, AutoCAD 2009, MicroStation V8, C&G, TDS, and SMI. He is capable of using Microstation with Geopak and In-Roads COGO packages.

#### **EDUCATION**

- ▶ A.A.S., Surveying Technology, Coastal Carolina Community College
- ▶ A.A.S., Marine Construction Engineering Technology, Cape Fear Community College
- ▶ A.A.S., Marine Laboratory Technology, Cape Fear Community College

#### **LICENSURE**

- ▶ Certified Survey Technician Level II Office, NC
- ▶ Certified Survey Technician Level III Office
- ▶ Certified Survey Technician Level III Boundary

#### **SELECT PROJECT EXPERIENCE**

- ▶ Easement and Raw Water Main Survey; Lower Cape Fear Water & Sewer Authority (LCFWSA) | Wilmington, NC
- ▶ Kings Bluff Pump Station Expansion; Lower Cape Fear Water & Sewer Authority (LCFWSA) | Bladen County, NC
- ▶ LCFWSA 60-inch Parallel Raw Water Main EA and PER; Lower Cape Fear Water & Sewer Authority (LCFWSA) | Wilmington, NC
- ▶ US 421 Raw Water Main Relocation Design; Lower Cape Fear Water & Sewer Authority (LCFWSA) | Wilmington, NC



## Relevant Experience

### KINGS BLUFF 48-INCH RAW WATER MAIN EASEMENT SURVEY | LELAND, NC

The Lower Cape Fear Water and Sewer Authority tasked McKim & Creed's Geomatics group to provide property research along a 10 mile route of an existing water line. The route runs through remote areas crossing or paralleling approximately 14 property owners. The intent is to acquire additional easement area along the existing waterline route where needed. We researched all of the property owner deeds and plotted the property lines and identified the location of the existing waterline easements on the property to determine where additional easements would be needed. Copies of the existing deeds and easements were delivered along with a Civil 3D file.

#### PROJECT REFERENCE

Lower Cape Fear Water & Sewer Authority  
Tim Holloman  
Executive Director  
ThollomanLcfwasa@atmc.net  
(910) 838-1919

#### DATE COMPLETED

November 2020



### 54-INCH PARALLEL RAW WATER MAIN DESIGN SERVICES | WILMINGTON, NC

The Kings Bluff Raw Water Supply system, operated by the Lower Cape Fear Water and Sewer Authority's (LCFWSA), is the primary supplier of raw water to the Lower Cape Fear region. This includes tens of thousands of water customers for the Cape Fear Public Utility Authority (CFPUA), Brunswick County, Pender County and private industries.

As the consulting engineer on the project, McKim & Creed established the basis of design that included water demand needs, design capacity, transmission main size, hydraulics, materials of construction, valving and interconnection concepts, specialty trenchless crossings, permit needs, cost considerations, impacts on the existing pump station and pump operations, etc.

McKim & Creed's design services involved surveying, geotechnical analysis of soil conditions and hydrology, wetlands delineation, subsurface utility engineering, additional property/easement identification, detailed design, permitting, opinion of probable construction costs, contract documentation, contractor prequalification and project management/coordination.

#### PROJECT REFERENCE

CFPUA  
Craig Wilson, PE, PMP, DBIA  
Engineering Manager  
craig.wilson@cfpua.org  
910.332.6474

#### DATE COMPLETED

October 2022





### US 421 PUMP STATION & FORCE MAIN | BURGAW, NC

McKim & Creed is working with Pender County to provide the design and permitting of approximately 14,000 LF of 12-inch water main, five miles of 16-inch force main, and a 0.75 MGD regional pump station with room to expand up to 1.5 MGD. The project will support the future development along the US-421 corridor, a major thoroughfare connecting Pender County to the City of Wilmington and the Cape Fear region. This project consists of early coordination and discussions with the NCDOT, Pender County, and property owners and developers for coordination of the water and force main utilities within the US-421 partially controlled access corridor, in addition to coordinating the site and capacity needs for the regional pump station.

### PROJECT REFERENCE

Pender County  
Kenny Keel  
Public Utilities Director  
(910) 259-0212  
kkeel@pendercountync.gov

### DATE COMPLETED

October 2022



### CFPWA MARQUIS HILLS ER AND EID | WILMINGTON, NC

McKim & Creed provided surveying and SUE services for the completion of the Engineering Report (ER) and Environmental Information Document (EID) for the Marquis Hills Sanitary Sewer Extension project for funding through the Clean Water State Revolving Fund (CWSRF).

The ER/EID was completed in accordance with NCDENR Infrastructure Finance Section (IFS) guidelines to assist New Hanover County and CFPWA with funding and technical approvals for the proposed project. The ER/EID documents provided analysis for multiple alternatives to provide sewer to the Marquis Hills area, which experienced a significantly high-rate of failure for private septic systems. The recommended project included approximately 46,000 LF of gravity sewer main and provided sewer service to approximately 690 parcels in the Marquis Hills area.

### PROJECT REFERENCE

Cape Fear Public Utility  
Authority  
Frank Styers  
(910) 332-6670  
frank.styers@cfpua.org

### DATE COMPLETED

November 2020





## Project Approach

Meeting schedules and budgets on any project comes from a complete understanding of the scope, schedule, deliverables, and client expectations. Having a single point of contact and an effective communication channel is key in this process.

Upon notification of a task order, we recommend a brief kick-off meeting be held between our project manager, the LCF Water & Sewer Authority project manager/engineer, and any other stakeholders determined by the agency. The goal of this meeting is to review the project scope, accuracy specifications, project schedule, and potential issues affecting the project and discuss potential approaches to collecting the required survey data.

As your consultant, we see it as our mission to thoroughly understand the scope and recommend the most effective and efficient tools to use to meet your needs. McKim & Creed owns GNSS(GPS) receivers, robotic total stations and drones including drone and hydrographic technology to give us complete flexibility to approach the project efficiently. Additionally, our project manager will perform an on-site inspection to incorporate site-dependent conditions to help manage costs fully.

Our methods of planning and performing field operations are unique to each assignment and are based on each site's topographic features, vegetation density, and soil/rock composition. We review all traffic conditions and consider their impact on safety issues and performance schedules.

Based on the outcome of the kick-off meeting, we will coordinate and determine participation to best address the needs of the LCF Water & Sewer Authority. Our project manager will prepare and submit a detailed cost proposal for all required services.

This proposal includes a complete description of the work to be provided; a complete cost projection with lump sum fees by itemized task, material costs, and any subcontractor costs; and a project/production schedule that outlines the major tasks to be accomplished.

Upon receipt of the fully executed task order, we will immediately begin work by obtaining right-of-way (if necessary), scheduling and deploying field crews, technicians, and any other personnel needed to complete the project. Task-specific roles are assigned so that each team member is responsible for accomplishing certain duties. The entire team receives a copy of the task assignments so that each member is aware of the responsibilities of the individual team members. When tasks are assigned, schedules and man-hour budgets are distributed. Team conferences are held on a regular basis to provide for a smooth workflow for the duration of each project.

### PROJECT COMMUNICATION

As your consultant, our primary goal is to achieve all project goals—scope, schedule, quality, and budget. Our project manager has access to real-time project status through our centralized accounting system, BST. This allows him to monitor project timesheets, budget, and expenses on an as-needed basis, giving him the information necessary to direct and manage the project team.



Invoices are issued monthly and will include a project status report along with all required supporting documentation for the prime firm and any sub-consultant firms used. During the course of the project, all required requests for permits, accounting, fees and reimbursable items will be processed through McKim & Creed. It is our commitment to keeping an open dialog with LCF Water and Sewer Authority staff throughout the project to ensure we are fully meeting or exceeding your needs.

Our project manager will continually monitor progress, prepare a progress report, and identify and address any issues that may arise during the course of the project. If an issue arises that we cannot resolve internally, he will the LCF Water & Sewer Authority project manager to keep them informed on project issues and work to resolve any outstanding issues.

## PROJECT SCHEDULE

The estimated project duration is sixty-five (65) business days.

- **WEEK 1:** Onsite project meeting and establish project approach based on client needs and field conditions.
- **WEEK 2-WEEK 3:** Establish a control network on North Carolina State Plane coordinates and NAVD 88 elevations to be provided to LCF Water & Sewer Authority for future use.
- **WEEK 4-WEEK 8:** Locate and adequate amount of boundary monumentation to accurately stake the proposed easement.
- **WEEK 9-WEEK 11:** Place stakes every 200-ft along the easement where accessible and deliver a CAD file to LCF Water & Sewer Authority.

## AVAILABILITY OF PERSONNEL

The workloads of our key personnel were carefully considered when assembling the team. Our team has the availability to meet all tasks identified under this contract. This is a team of seasoned professionals who have proven time after time their commitment and ability to get the job done in a responsive and cost-effective manner. As with any contract, it will be critical to provide the LCFSWA with sufficient qualified staff to support the project; we can assure the LCFSWA that this is what we will provide throughout the duration of this contract.

## REFERENCES

CFPUA  
Craig Wilson, PE, PMP, DBIA  
Engineering Manager  
craig.wilson@cfpua.org  
910.332.6474

Lower Cape Fear Water & Sewer Authority  
Tim Holloman  
Executive Director  
ThollomanLcfwasa@atmc.net  
(910) 838-1919

Pender County  
Kenny Keel  
Public Utilities Director  
(910) 259-0212  
kkeel@pendercountync.gov





NOVEMBER 14, 2022

REQUEST FOR QUALIFICATIONS

# PROFESSIONAL SURVEYING SERVICES LOWER CAPE FEAR WATER AND SEWER AUTHORITY

LELAND, NORTH CAROLINA



## TABLE OF CONTENTS

|                                        |      |
|----------------------------------------|------|
| COVER LETTER                           | 1    |
| FIRM PROFILE                           | 2    |
| CONFLICT OF INTEREST STATEMENT         | 4    |
| REFERENCES                             | 4    |
| PROPOSED WORKPLAN                      | 4    |
| UNDERSTANDING + APPROACH               | 5    |
| PROJECT MANAGEMENT + QUALITY CONTROL   | 6    |
| QUALITY CONTROL PROCEDURES + PROCESSES | 6    |
| ORGANIZATIONAL CHART                   | 7    |
| SURVEY TEAM LEADERSHIP                 | 7    |
| KEY TEAM MEMBERS                       | 8    |
| STATEMENT OF AVAILABILITY              | 8    |
| RELEVANT PROJECT EXPERIENCE            | 9-12 |
| MUNICIPAL EXPERIENCE                   | 12   |



## COVER LETTER

November 14, 2022

**Attn: Danielle Hertzog**

Finance Administrative Assistant  
Lower Cape Fear Water and Sewer Authority  
1100 New Pointe Blvd, Suite 17  
Leland, NC 28451

**Re: RFQ: Professional Surveying Services, Lower Cape Fear Water and Sewer Authority**

Dear Ms. Hertzog + Selection Committee,

**SEPI [a Division of TranSystems] (SEPI)**, is pleased to submit our qualifications to Lower Cape Fear Water and Sewer Authority Surveying Services contract. SEPI is an award-winning, comprehensive land development and infrastructure planning, design and construction consultancy serving both the public and private sectors across the Southeastern United States.

SEPI merged with TranSystems in September 2022 and the partnership creates a platform for additional and unique services for our clients including bridge, aviation and rail planning, design and construction oversight.

**PROVEN HISTORY**

SEPI has extensive experience providing surveying and SUE services. Through a collaborative team approach, SEPI has developed excellent working relationships within federal, state, and local communities.

**ON-CALL EXPERIENCE**

SEPI is recognized as a trusted and leading provider of surveying services for high profile projects across North Carolina. Our on-call contract list is substantial and represents many repeat awards based on superior performance from clients such as UNC School System, NC Department of Transportation (NCDOT), Guilford County Schools (GCS), and Wake County Public Schools (WCPSS).

**QUALIFIED SURVEY/SUE PROFESSIONALS**

Our Survey + SUE professionals bring a broad range of survey expertise on diverse types of surveying assignments for public and private sector clients.

**SURVEY EXPERTISE**

Our senior survey management personnel have decades of experience applying historical survey methods along with the latest technological advancements. Our survey specialists use GPS/GNSS, robotic technology, and high definition laser scanning to achieve the most cost effective and accurate products. We are adept at providing our clients deliverables in AutoCAD and MicroStation formats.

**SUE EXPERTISE**

Our depth of SUE expertise is well-suited for the variety of task orders anticipated under this contract. We are familiar with the four quality levels noted in the CI/ASCE 38-02 guidelines (also referred to as Standard 38-02) and are confident in our ability to offer successful subsurface utility locating services in a timely manner.



*Our experienced crews use multiple survey SUE/tools to collect greater detail faster than conventional location methods.*

**KNOWLEDGE OF BEST PRACTICES**

Our experience enables us to proactively handle issues often encountered so that Lower Cape Fear Water and Sewer Authority (LCFWASA) receives quality project oversight and delivery from Notice-to-Proceed to project closeout.

**CAPACITY + DEPTH OF RESOURCES**

SEPI has the available capacity and expertise to complete these projects accurately and on schedule. We have the capability to provide additional resources to meet future needs and the ability to respond quickly to these demands given the proximity of our staff. We will utilize our experience with other successful projects similar in scope to complete your projects on time and on budget.

**SUMMATION**

SEPI offers LCFWASA a strong team with survey/SUE experience, technical expertise, innovative solutions, and proven projects. We ask for your strong consideration of our qualifications. Should you have any questions regarding this submittal, please do not hesitate to contact me by phone at 919.573.9915 or via email at rramkumar@sepiinc.com.

Sincerely,

Rajit Ramkumar PE, LEED AP  
Vice President | Transportation



## FIRM PROFILE

SEPI (a Division of TranSystems) is an award-winning, comprehensive land development and infrastructure planning, design and construction consultancy serving both the public and private sectors across the Southeastern United States.

SEPI merged with TranSystems in September 2022 and the partnership creates a platform for additional and unique services for our clients including bridge, aviation and rail planning, design and construction oversight.

### PRIMARY POINT OF CONTACT & PROJECT MANAGER



**MICHAEL TACKETT**

101 Autumn Hall Dr, Ste 210  
Wilmington, NC 28403

**OFFICE:** 910.523.5715

**EMAIL:** [mtackett@sepiinc.com](mailto:mtackett@sepiinc.com)

### SERVICES WE PROVIDE

- Site / Civil Engineering
- Bridge / Tunnel Design, Rehabilitation, Inspection
- Landscape Architecture
- NEPA / Environmental
- Land Surveying
- Subsurface Utility Exploration
- Roadway Design
- Construction Engineering + Inspection
- Asset Management + Maintenance
- Endangered Aquatic Surveys
- Geomatics
- Geospatial / GIS
- Subsurface Utility Engineering (SUE)
- Traffic Engineering
- Urban Planning
- Water Resources / Hydraulic Design
- Unmanned Aircraft Systems
- Construction Program Management
- Rail / Transit Planning + Engineering
- Architecture
- Multi-use Trail Planning + Design
- Right-of-Way Acquisition

## CULTURE. CAPACITY. COMBINED PORTFOLIO

### DEPTH OF RESOURCES

### EXPERIENCED

### RESPONSIVE

Successfully leveraging SEPI's 20 years and TranSystems' 56 years of pure planning, design and construction services within the transportation and infrastructure industry creates more resources for our clients. By combining our teams we are now 50 offices strong with over 1,500 employees.





**DELIVERING  
ACCURATE DATA  
USING THE LATEST  
TECHNOLOGY**



## GEOMATICS (SURVEY +SUE)



### CAPABILITIES

Our survey and subsurface utility engineering (SUE) specialists use GPS/GNSS, robotic technology, 3D high definition laser scanning, and non-destructive geophysical investigating techniques to provide comprehensive and high-accuracy data.

We are adept at providing our clients deliverables in AutoCAD and MicroStation formats.

### SURVEY

- Property/boundary surveys including ALTA/NSPS land title surveys
- Highway/railroad surveys
- Right-of-way/easement acquisition mapping
- Topographic surveys
- Monitoring Survey
- As-built surveys
- Subdivision surveying/platting
- Surveys of facilities requiring HAZWOPER certified technicians
- High definition 3D laser scanning
- Construction layout for infrastructure and facilities
- GPS/GNSS control surveys

### SUE

- Quality Level D - Level A designating
- Ground penetrating radar
- Vacuum excavation
- Location and mapping

SPECIALTIES



## CONFLICT OF INTEREST STATEMENT

The SEPI Team has no known conflict of interest with the LCFWASA for this contract. We are poised to deliver the requested services upon Notice-to-Proceed and maintain project schedules with the availability and depth of resources of our firm.

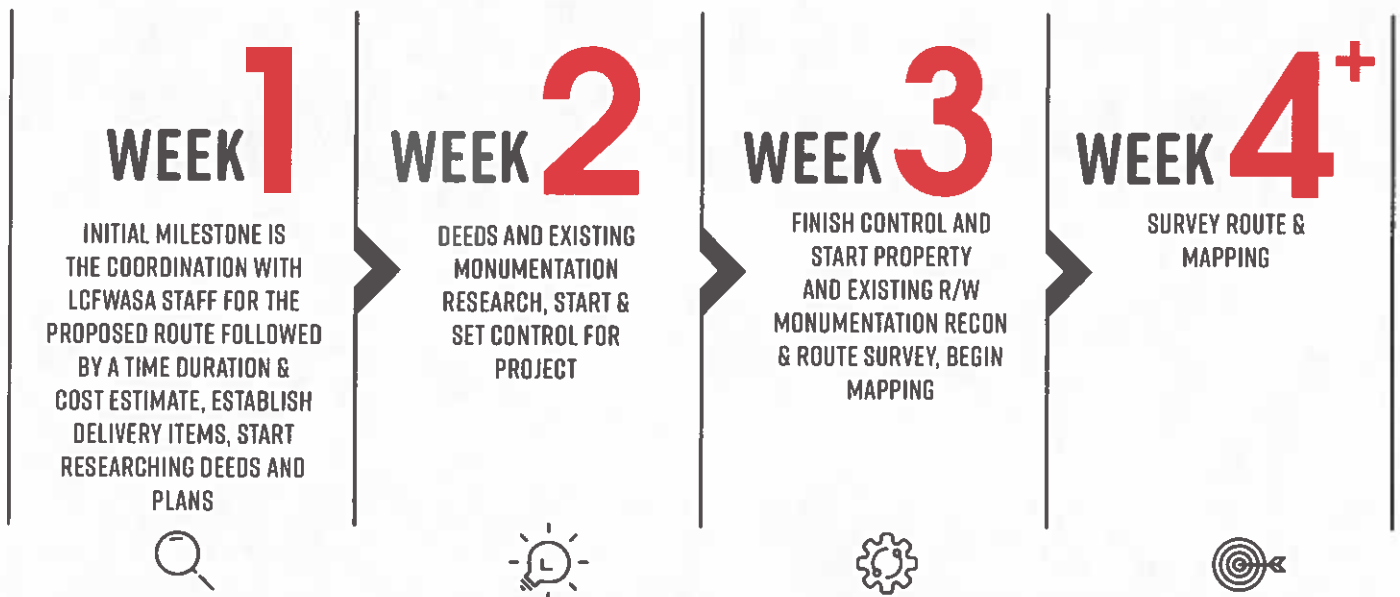
## REFERENCES

CFPUA >> ART KENAN | 910.332.6436 | ART.KENAN@CFPUA.ORG

NEW HANOVER COUNTY >> TARA DUCKWORTH | 910.798.7620 | TDUCKWORTH@NHCGOV.COM

CITY OF WILMINGTON >> CHAD EICHELBERGER | 910.765.0619 | CHAD.EICHELBERGER@WILMINGTONNC.GOV

## PROPOSED WORKPLAN



**Depth of experience:** Our survey specialists use GPS/GNSS, robotic technology, and 3D high definition laser scanning to achieve the most cost effective and accurate products. Our SUE staff provides Quality Level D- Level A services, including utilization of our vacuum truck.



## UNDERSTANDING + APPROACH

### UNDERSTANDING

At SEPI, we take great pride in being responsive to our client's needs. We know this can be especially critical with varying types of survey projects that need immediate attention.

SEPI has the capability and expertise to perform the requested services from our Raleigh office, with support from our Asheville, Charlotte, and Wilmington offices – therefore, we can respond quickly and, using our collective experience, provide high quality services in a timely manner.

SEPI survey and SUE professionals have in-depth experience in the following types of surveys: boundary, topographic, aerial, network control, GPS, construction layout, route and bridge surveys, right-of-way surveys, wetlands, hazardous waste sites, railroad surveys, and utility surveys.

Each survey project has its own variables that need to be addressed. When discussed in detail, a complete scope of work will be developed. Once the scope is defined, a detailed work schedule will be confirmed, appropriate personnel assigned, a date of deliverables determined, and the fee will be developed.

### METHODOLOGY + APPROACH

Once an assignment is identified, SEPI will meet with LCFWASA Staff representatives for a project review/scoping meeting. Once a clear and concise scope has been determined, a fee estimate and schedule will be submitted for review and approval.

Survey tasks will vary depending on the project, but most may include the following general tasks/steps in executing the work.

### PROPERTY RESEARCH, OWNER IDENTIFICATION, + NOTIFICATION

Property research is performed using Internet resources or visiting the New Hanover County Register of Deeds and GIS offices.

### HORIZONTAL + VERTICAL CONTROL SURVEYS

We will establish high order accuracy horizontal and vertical control reference monuments to serve as the basis for originating or checking subordinate surveys for projects such as: boundary surveys, route surveys, topographic surveys, construction projects, transmission route surveys, and site development projects. The horizontal and vertical control can be established by the use of GPS utilizing the NC VRS system or conventional surveying methodology.

### GPS SURVEYS

SEPI uses dual frequency GPS receivers for performing static GPS surveys and Real-Time-Kinematic (RTK) GPWS surveys. Our technology is state-of-the art with the capability to obtain sub-centimeter and centimeter level positions.

We have access to the Virtual Reference Station or RTK Network System, sponsored by the North Carolina Geodetic Survey, which enables us to provide NAD 83/2011 adjustment coordinates in real time.

### TOPOGRAPHIC SURVEYS

SEPI has extensive experience conducting topographic surveys from small sites of just one-acre to larger sites of 200-acres or more.

We can also provide the topographic surveys in the necessary Datums: horizontal (NAD 83 and NAD 83/2011) and vertical (NAVD 88, NGVD 29).

### AS-BUILT SURVEY

Our experience performing as-built surveys is varied and covers projects such as utilities and other infrastructure for roadway improvement; school site renovations; university projects; and private site development projects. We understand the importance of collecting available records and plans to help facilitate the field survey. As-built survey mapping will be customized to suit the LCFWASA requirements and CAD standards.

### BOUNDARY SURVEY

Our surveyors perform boundary surveys daily to support our public and private sector clients. We are well acquainted with boundary marking conventions, evaluation of boundary evidence, interpretation of legal descriptions and similar documents, and appropriate mapping methods to clearly represent the survey results. Boundary survey mapping, recombination mapping, and subdivision mapping follow the requirements of local jurisdictions and State mapping laws.

### CAD

CAD submittals can be provided in MicroStation or AutoCAD (.dwg files) and will meet the AEC CAD Standards (.dgn files) and Geopak or InRoads surface modeling format (.dtm files) as required. Units of measurement will be English. Upon completion of each assigned project, the final CAD files will be assembled and copied to USB drive for future reference and storage.

### SUE

SEPI provides Subsurface Utility Engineering/Designating (SUE) services in compliance with levels A, B, C, and D as noted in the CI/ASCE 38-02 guidelines also referred to as



Standard 38-02. SEPI applies SUE capabilities for existing underground utility verification including condition and precise location through non-destructive geophysical investigating techniques.

### 3D LASER SCANNING

One innovative tool SEPI can bring to the table is high definition 3D laser scanning. SEPI has the ability to scan substations, buildings, historical sites, transmission lines, roads, pipe networks, structures, quarries, bridges, intersections, and other facilities with survey accuracy.

These scans are used to produce as-builts/record drawings, volume calculations, and topographic mapping as well as identify settlements, deformations, and inconsistencies in construction.

High definition 3D laser scanning eliminates return site visits to capture missed data and the need for traffic control and also creates a safe environment for the surveyor. The equipment can also be operated remotely using WiFi.

This technology can collect as many as one million data points per second and produces very accurate point clouds. Together with the actual photographs taken by the scanner, the data is processed and can be utilized in AutoCAD and/or MicroStation. The data is geo-referenced with real x,y,z coordinates providing a three dimensional position of every point in the cloud.



*High definition 3D laser scanning: SEPI's use of 3D laser scanning eliminates the need for return site visits to capture missed data, creates a safe environment, and is a cost effective and highly accurate option we have used for NC State and can be use for LCFWASA projects.*

## PROJECT MANAGEMENT + QUALITY CONTROL

### PROJECT SCOPING MEETING

SEPI Project Management will meet with the assigned staff over the proposed contract to discuss measures of the expected scope and deliverables prior to start of any project.

From this meeting, SEPI's Project Manager will determine an appropriate scope, schedule, and fee for each task. If subcontractors are needed in a particular project, a scope and fee will be jointly developed for the specific task(s).

## QUALITY CONTROL PROCEDURES + PROCESSES

### FIELD PROCEDURES

Field procedures will be defined to the degree necessary to achieve or exceed a Class A or Class AA survey as specified in the Standards of Practice for the State of North Carolina.

If the Authority has a request for a higher degree of accuracy, SEPI will determine what procedures and equipment will be required to meet the request. Field data will be reviewed daily as to accuracy by the assigned Senior Professional Land Surveyor or Project Manager.

### SUBCONSULTANT PROJECT MANAGEMENT + QUALITY CONTROL

When subcontractors are utilized for specific tasks, all data generated by the subcontractor will be supplied to SEPI for verification and a quality control review by the assigned Senior Professional Land Surveyor for that specific task.

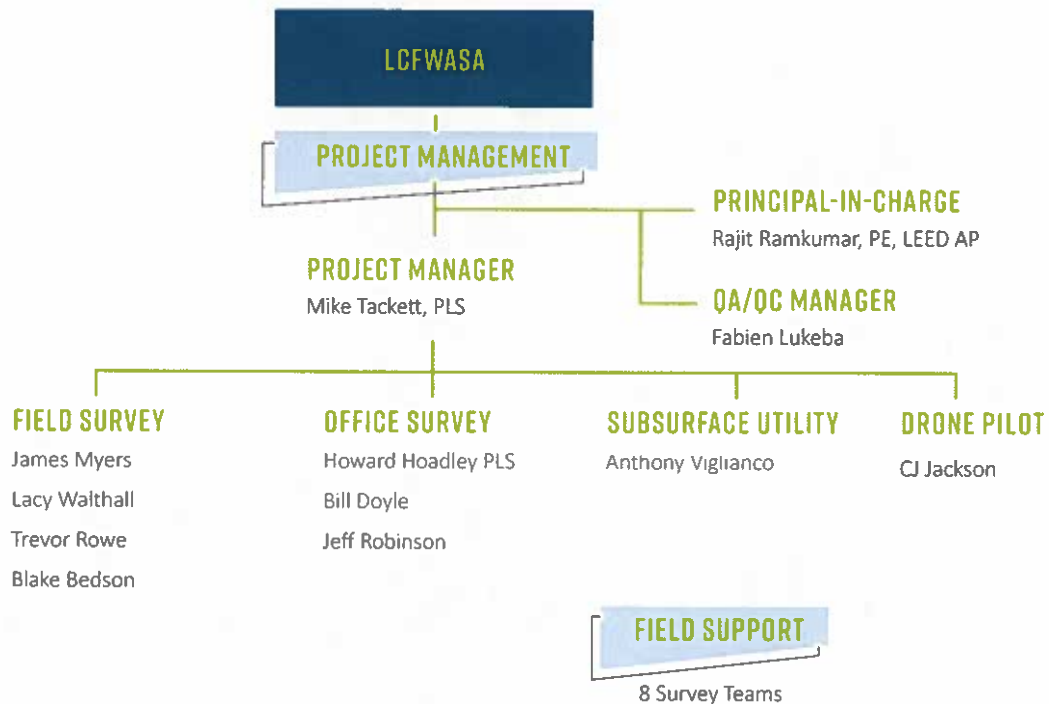
### MEETING SCHEDULES + BUDGETS

Each project's schedule/budget are reviewed weekly by the Project Manager. If necessary, resources are adjusted to help ensure a project stays on schedule. If delays are caused by weather, scope changes, or factors out of SEPI's control, they will be discussed with LCFWASA's Project Manager immediately.



# ORGANIZATIONAL CHART

The SEPI Team provides a staff of highly qualified professionals with sufficient available capacity required to provide timely and responsive service to LCFWASA. In the event that our Team encounters personnel changes or any other changes of significance, the LCFWASA will be notified immediately.



## SURVEY TEAM LEADERSHIP



**RAJIT RAMKUMAR,  
PE, LEED AP**

**PRINCIPAL-IN-CHARGE**  
Rajit Ramkumar, PE,  
LEED AP will serve as  
our Principal-In-Charge

for the contract. Rajit, located in our Raleigh office, has over 18 years of experience in transportation engineering, project development, project administration, and project management.

Rajit serves as SEPI's Transportation Division Manager for all pre-construction teams in Raleigh, Wilmington, Charlotte, and Asheville offices. He is aware of LCFWASA's expectations and will assign the right resources needed for successful project delivery.



**MIKE TACKETT, PLS**

**PROJECT MANAGER**  
Mike has over  
32 years of  
experience in the  
land surveying and

engineering fields. Mike manages the Wilmington survey department where his responsibilities include coordination and oversight of field crews, easement surveys, boundary surveys, construction staking calculations, deed research, producing maps for permitting and recording, and client relations.



**FABIEN LUKEBA**

**PLS SURVEYING**  
Fabien has over 24  
years of surveying  
and management  
experience, managing  
geomatics and

construction projects for numerous municipalities, the State of North Carolina, Federal, and private sector clients. For the past 21 years he has directly collaborated with the NCDOT on various types of projects. Fabien's experience includes MicroStation/Geopak, High Definition Surveying, 3D Laser Scanning, Land Development, Construction Engineering, Transportation Engineering, and Highways.



## KEY TEAM MEMBERS



### ANTHONY VIGLIANCO

#### SUE GROUP MANAGER

Anthony has over six years of experience in subsurface utility engineering. He is experienced in project management including submitting proposals, training and oversight of crews, project

coordination, and quality control. Anthony's experience includes field sketches, records research, surveying/coordinating survey of utilities, traffic control, Quality Level A and B field assignments, and vehicle/equipment maintenance. He is also experienced in the use of a variety of electromagnetic detection equipment including Heath, Metrotech, Pipehorn and Radio Detection as well as Vacmasters air/vacuum excavation equipment



### CJ JACKSON

#### DRONE

CJ has more than twelve years of experience working with both private and government entities. He has utilized UAVs in construction and maintenance, emergency response, and marketing. He has

worked alongside construction crews and emergency responders during hurricane response efforts on multiple occasions.



### HOWARD HOADLEY, PLS

#### OFFICE SURVEY

Howard is a Professional Land Surveyor with more than 36 years of progressive surveying experience. He is also a Certified Flood Plain

Surveyor as recognized by FEMA. He oversees projects and anticipates problems to head off any schedule changes or scope interruptions before they surface.



### JAMES MYERS

#### FIELD SURVEY

James has over eleven years of experience in the surveying field. He has experience operating equipment to support HD Laser

Scan, hydrographic, topographic, and boundary surveys. James has performed right-of-way, stake-out, and as-built surveys for several pipeline projects. He is also familiar with GIS data acquisition.

## STATEMENT OF AVAILABILITY

The SEPI Team has complete availability to provide the services outlined in this RFQ. After Notice-to-Proceed, our team has no known scheduling conflicts that would interrupt the scope of work. Our Team is licensed, fully insured to meet your requirements, and is ready to serve the LCFWASA.



## RELEVANT PROJECT EXPERIENCE

### CAPE FEAR PUBLIC UTILITY AUTHORITY | EASEMENT + RIGHT-OF-WAY ON-CALL



SEPI was selected for CFPUA's on-call contract to provide easement and right-of-way location services which included locating and recovering right-of-way monuments and identifying right-of-way boundaries as well as providing maps of surveys. This on-call

- Green Meadows Subdivision Easements
- Dorothy Johnson Easement
- New Holland Drive Easement
- Avenel Subdivision Easement
- Brunswick County Raw Waterline Easement
- Smith Creek Estates
- Delaney & 17th Street
- Silva Terra Drive
- Doctors Branch
- Pine Valley Drive
- Apple Road

#### REFERENCE:

ART KENAN | P: 910.332.6436 | E: ART.KENAN@CFPUA.ORG

### CAPE FEAR PUBLIC UTILITY AUTHORITY | EMERGENCY SURVEYING ON-CALL



SEPI provided professional survey services for the location, survey, and mapping of CFPUA's sewer system associated with emergency repair projects. Maps and drawings were provided to CFPUA for use during the repair.

- Saint Rosea Sewer Survey
- Oleander Dr Property Line Location
- 7800 Masonboro Sound Rd Sewer Line Locations
- 43rd St Sewer Survey
- Wilmington Airport Sewer Survey

#### REFERENCE:

ART KENAN | P: 910.332.6436 | E: ART.KENAN@CFPUA.ORG

### NCDOT | LOCATION AND SURVEYS UNIT LIMITED SERVICES AGREEMENT



SEPI has successfully delivered numerous survey projects under the 2013-2014, 2015-2016, 2017-2018, and 2019-2020 contracts. We have been issued assignments statewide in most all of the NCDOT divisions and earned high marks for technical quality and adherence to schedules. Typical services provided include boundary surveying and mapping for property acquisition; topographic, route, and wetlands surveying and mapping; as-built surveying; and easement acquisition or dedication surveying.

#### REFERENCE:

JAMES DODSON | P: 919.707.6800 | E: JDODSON@NCDOT.GOV



## RELEVANT PROJECT EXPERIENCE (CONT.)

### TOWN OF CAROLINA BEACH | ON-CALL SURVEYING SERVICES



SEPI provided survey services for identifying and correcting issues with sanitary sewer, water, and stormwater infrastructure. These services included problem analysis and solution recommendations for the Town. In many cases, SEPI provided technical support for the Town's staff during emergency response situations to aid in the correction of issues which required an expedited response/solution.

**REFERENCE:**

**GIL DUBIOS | P: 910.458.2999 | E: GIL.DUBOIS@CAROLINABEACH.ORG**

### TOWN OF WRIGHTSVILLE BEACH | SURVEY DATA COLLECTION FOR WATERLINE IMPROVEMENTS AND UPGRADES



SEPI was responsible for all survey data collection, existing condition mapping, engineering design, and permitting for the following streets:

- |                     |                     |
|---------------------|---------------------|
| ○ Waynick Boulevard | ○ Henderson Street  |
| ○ Sunset Avenue     | ○ Greensboro Street |
| ○ Lumina Avenue     | ○ Seagull Street    |
| ○ Nathan Street     | ○ Shearwater Street |
| ○ Oxford Street     | ○ Meier Street      |

**REFERENCE:**

**TIMOTHY OWENS | P: 910.239.1770 | E: TOWENS@TOWB.ORG**

### CITY OF WILMINGTON | GREENVILLE LOOP MULTI-USE PATH



SEPI serves as prime consultant to the City of Wilmington, for the design project of a multi-use path (MUP) for Bicycle and Pedestrian traffic. The proposed project length is for 9500 linear feet addition to the existing MUP along Greenville Loop Road and is intended to close this gap between Old Military Road and Pine Grove Drive.

SEPI has performed design surveys for the MUP, and the project is currently in the design phase. The Design Survey involved 95 properties along the route of the MUP and consisted of the collection of all pertinent planimetric and topographic data and was augmented with data provided by the City from an aerial survey that was conducted by others.

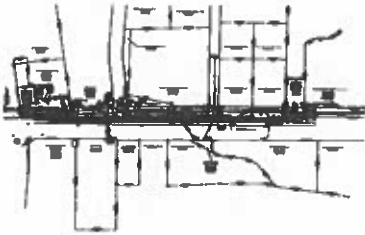
**REFERENCE:**

**CHAD EICHELBERGER | P: 910-765-0619 | E: CHAD.EICHELBERGER@WILMINGTONNC.GOV**



## RELEVANT PROJECT EXPERIENCE (CONT.)

### NEW HANOVER COUNTY | MARKET STREET MULTI-USE PATH



SEPI performed design surveys for the proposed 1400 linear foot addition to the existing Multi-Use Path (MUP) along Market Street and is currently in the design phase of the project. The Design Survey involved 12 properties along the route of the MUP and consisted of the collection of all pertinent planimetric and topographic data. Data collected will include type, size and inverts of existing storm and sanitary sewer drainage systems; centerline and top of bank of existing ditches; other pertinent structures within the survey limits; tree lines; existing visible utilities; pavement edges and crown points; right-of-way lines within the survey limits of each of the seven locations.

REFERENCE:

TARA DUCKWORTH | P: 910.798.7620 | E: TDUCKWORTH@NHCGOV.COM

### NEW HANOVER COUNTY | MIDDLE SOUND LOOP ROAD MULTI-USE PATH



SEPI performed design surveys for the MUP and currently is in the design phase of the project. The Design Survey involved 34 properties along the route of the MUP and consisted of the collection of all pertinent planimetric and topographic data. Data collected will include type, size and inverts of existing storm and sanitary sewer drainage systems; centerline and top of bank of existing ditches; other pertinent structures within the survey limits; tree lines; existing visible utilities; pavement edges and crown points; right-of-way lines within the survey limits of each of the seven locations. SEPI serves as prime consultant to New Hanover County Parks and Gardens Department, for the EB-6027 design project of a multi-use path (MUP) for Bicycle and Pedestrian traffic.

REFERENCE:

TARA DUCKWORTH | P: 910.798.7620 | E: TDUCKWORTH@NHCGOV.COM

### TOWN OF LELAND | ON-CALL ENGINEERING, PLANNING, AND SURVEY SERVICES



SEPI is providing On-Call Surveying Services for The Town of Leland, duties include boundary surveys, title research and preparation for new deeds, mapping, preparing legal descriptions for easements and rights-of-ways, and modeling studies. Projects have included Pump Station #10 Improvements, Northgate Drive Realignment, Relocation of Lift Station #14.

REFERENCE:

LYNN VETTER | P: 910.332.4652 | E: LVETTER@TOWNOFLELAND.COM



## RELEVANT PROJECT EXPERIENCE (CONT.)

### NEW HANOVER COUNTY | NORTH COLLEGE ROAD MULTI-USE PATH

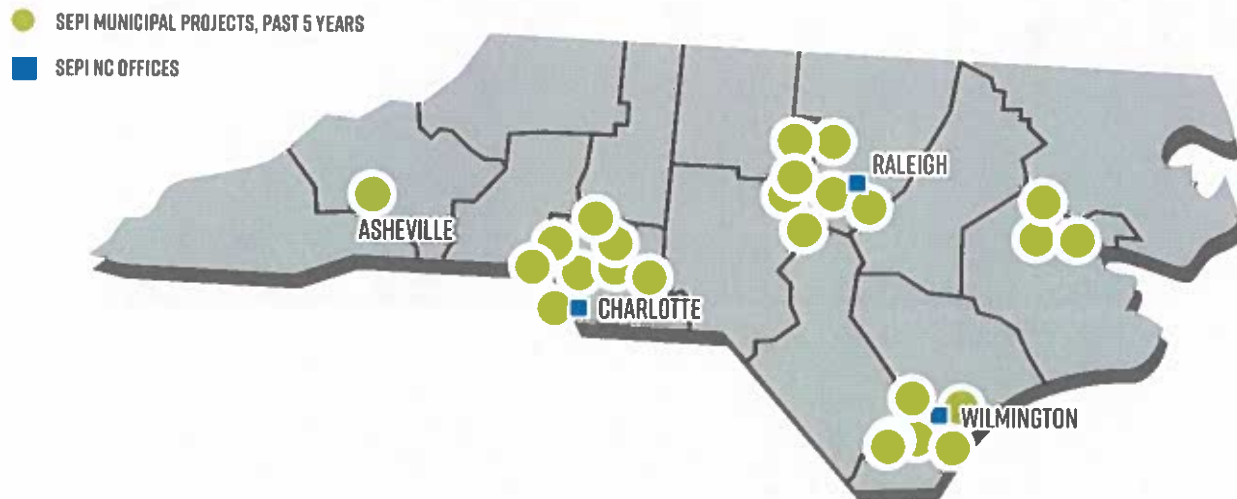
SEPI serves as prime consultant to New Hanover County Parks and Gardens Department, for the North College Road design project of a multi-use path (MUP) for Bicycle and Pedestrian traffic. The proposed project length is for 11,009 linear foot of MUP. The project will create a MUP along North College Road to from Gordon Road to North Chase Parkway. SEPI has performed design surveys for the MUP and currently is in the design phase of the project. The Design Survey involved 60 properties along the route of the MUP and consisted of the collection of all pertinent planimetric and topographic data. Data collected will include type, size and inverts of existing storm and sanitary sewer drainage systems; centerline and top of bank of existing ditches; other pertinent structures within the survey limits; tree lines; existing visible utilities; pavement edges and crown points; right-of-way lines within the survey limits of each of the seven locations. Project control was established using GNSS methods.

#### REFERENCE:

TARA DUCKWORTH | P: 910.798.7620 | E: TDUCKWORTH@NHCGOV.COM

## MUNICIPAL EXPERIENCE

SEPI has experience working with municipality clients having completed successful projects for clients across North Carolina in multiple disciplines. Statewide, we have been awarded 80+ contracts for more than 20 repeat government clients, and we are proud of our repeat client rate of over 80% for clients company wide.



#### MUNICIPAL CLIENT LIST

City of Asheville  
City of Charlotte  
City of Clinton  
City of Durham  
City of Fayetteville

City of Greenville  
City of Jacksonville  
City of Raleigh  
City of Wilmington  
Town of Elon

Town of Cary  
Town of Clayton  
Town of Carolina Beach  
Town of Davidson  
Town of Fuquay-Varin

Town of Garner  
Town of Leland  
Town of Louisburg  
Town of Matthews  
Town of Wrightsville Beach





SEPIINC.COM





# STEWART

## LOWER CAPE FEAR WATER AND SEWER AUTHORITY

PROFESSIONAL SURVEYING SERVICES

November 14, 2022

**Stewart**

2018 Eastwood Road, Suite 207, Wilmington NC 28403

**o:** 910/796/0145

**f:** 919/380/8752

[stewartinc.com](http://stewartinc.com)





# STEWART

November 14, 2022

Lower Cape Fear Water and Sewer Authority  
 Danielle Hertzog, Finance Administrative Assistant  
 1107 New Pointe Blvd, Suite 17  
 Leland, NC 28451  
 via email to: admin@lcfwasa.gov

## RE: Request for Qualifications | Professional Surveying Services

Ms. Hertzog,

**Stewart Engineering, Inc. d/b/a Stewart** is pleased to express our interest in providing surveying services for locating adequate boundary monumentation to stake the existing easements, establishing control throughout the +/- 45,000 linear foot corridor, locating public rights-of-way adjacent to properties, and staking the existing easements every 200 feet where accessible.

We have assembled a highly regarded team of professionals for this assignment that have experience working together and that have significant experience with surveying for similar projects. I will serve as Principal-in-Charge, and Sean Leggett, PLS will be the Project Manager and day-to-day contact for this project. Sean has 26 years of surveying experience, and has lived and worked in the area for more than 20 years. He has provided surveying services for municipal clients in coastal North Carolina on a variety of project types. Stewart has an office location in Wilmington and we have significant experience in the region.

### Certification of Appropriate Licenses

Stewart is licensed with the State of North Carolina Board of Examiners for Engineers and Surveyors, and is authorized to practice engineering and land surveying under the provisions of Chapter 89C and 55B of the General Statutes of North Carolina.

License No: C-1051

### Certification of Sufficient Resources

Stewart's Geomatics Practice has 53 employees throughout the Carolinas. Our project managers can mobilize field crews in Wilmington at a moment's notice. From Allegro Data Collectors to MetroTech Radio Frequency EM Locators, Stewart maintains state of the art equipment and software to provide our clients with consistent high-quality service.

### Commitment of Availability

Each of our proposed team members has an assigned workload of projects in various stages of design and development, which is updated on a weekly basis to ensure consistency and continuity. We have selected a team that has the expertise and availability necessary to ensure a high level of customer service and quality work is achieved and that anticipated project schedules can be met.

### Conflict of Interest Statement

Upon review of the requirements for performing the services necessary for this project, no member of the Stewart team has found any personal or financial conflicts of interest on the part of any officers or employees.

We are excited for the opportunity to provide planning services for this project and look forward to your favorable consideration. Please do not hesitate to call me at 919.866.4738 or email me at csilvanic@stewartinc.com with any questions or comments.

Sincerely,

**Craig Silvanic**  
 VP | Practice Leader, Geomatics

### STEWART'S CONTACT PERSON Sean Leggett, PLS

2018 Eastwood Road, Suite 207  
 Wilmington, NC 28403  
 919.866.4706 • sleggett@stewartinc.com



**STEWART FIRM PRINCIPALS****CEO / FOUNDER****EDUCATION**

Master of Science in Civil Engineering (Structures),  
North Carolina State University

Bachelor of Science in Civil Engineering, North Carolina State University

**REGISTRATION**

Professional Engineer (PE):  
North Carolina #19474

**WILLY STEWART PE**

Willy is the founder and CEO of Stewart, an interdisciplinary, award-winning and ENR Top 500 design, planning, and engineering firm headquartered in Raleigh, N.C. He is responsible for overseeing the company's strategic growth and operations, and serves as the primary leader for major corporate decisions and vision. He has over 38 years of experience as a Professional Engineer and has been involved in many capacities in the design and quality assurance of hundreds of buildings including commercial, educational, government, industrial, medical, and sports facilities. Willy realized his entrepreneurial vision of opening his own firm when he created Stewart in 1994. The company started as a structural engineering firm, and quickly expanded its practice areas to include landscape architecture, civil engineering, transportation, geomatics, geotechnical & construction services, and community planning.

**IN THE NEWS**

- **Triangle Business Journal**  
2021 CEO of the Year and C-Suite Awards
- **CBS 17**  
Hispanic Engineer shapes cityscapes, skylines in NC and beyond
- **Business North Carolina**  
Cover story: Willy Stewart engineers an admirable success story | "The Weekly Roundup" Podcast | The changing look of N.C. executive power (2021) | Leaders of the Pack (2022) | Business NC's Power List 2021
- **Author**  
"Fire Yourself"

**VP | Practice Leader, Geomatics****PROFESSIONAL AFFILIATIONS**

American Public Works Association | Society of Military Engineers | Common Ground Alliance | National Utility Locating Contractors Association | Board Member, NC 811 VP of Legislative Committee

**PRESENTATIONS**

*Using All the Tools in Your Toolbox: Survey, SUE, and Geospatial*  
SC Society of Surveyors Annual Convention, 2022

**CRAIG SILVANIC**

As the Practice Leader of Geomatics, Craig is responsible for managing the manpower allocation, scheduling, and training of personnel. He has more than 24 years of project management, business development, and crew management experience in the utility locating and SUE industry, including more than 12 with Stewart. He has direct field experience with a variety of geophysical technologies, and has used his experience to solve complex utility mapping problems. Craig is also adept at customizing project approaches and client deliverables. He has managed large contracts with a variety of private and public clients, including state universities, schools, departments of transportation, municipalities, and industries. Craig is also a Trainer for Rail Safety Programs within Stewart and is certified to teach Norfolk Southern and CSX.

**RELEVANT EXPERIENCE**

- **City of Durham New Water Main | Durham, NC**  
Principal-in-Charge
- **Camp Burton Water & Sewer Utilities | Greensboro, NC**  
Principal-in-Charge
- **Charlotte Water, LSC to CBD | Charlotte, NC**  
Principal-in-Charge
- **Camp Burton Water & Sewer Utilities | Greensboro, NC**  
Principal-in-Charge
- **Westside Wastewater Treatment Plant | High Point, NC**  
Principal-in-Charge





## FIRM OVERVIEW

### STRONGER BY DESIGN



**STEWART**

Stewart is located throughout the Carolinas, comprising nearly 200 employees with eight office locations. With a unique interdisciplinary collaborative approach that results in stronger and more creative design solutions, Stewart serves domestic and international clientele, offering a full range of services to meet the needs of our clients, including:

- Civil Engineering
- **Geomatics**
- Geotechnical & Construction Services
- Landscape Architecture
- Structural Engineering
- Transportation & Planning

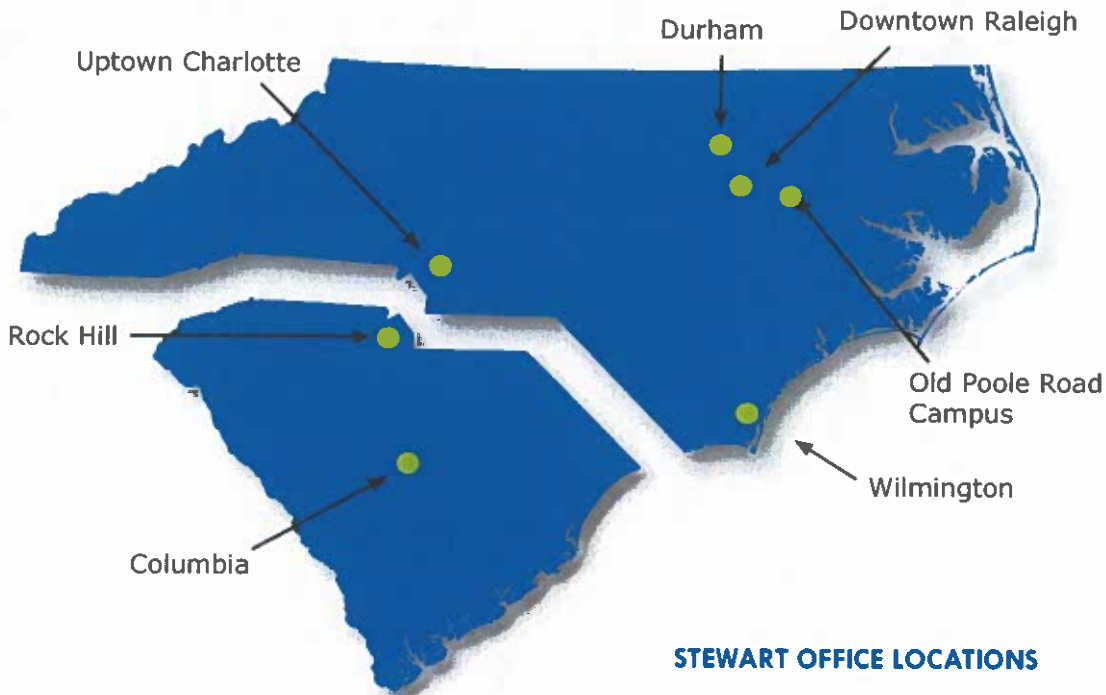
Founded in 1994 by Willy E. Stewart, PE, the firm is owned by a select group of professionals who are personally involved in our clients' success.

Stewart has developed a rich culture of servant leadership, summarized by the acronym, THREAD: Trust, Humility, Respect, Excellence, Accountability, and Discipline. These core values are at the heart of how we work with each other, our clients, our partners, and our community. THREAD has evolved into a curriculum that is taught to employees through our THREAD Institute.

Stewart is a certified Historically Underutilized Business (HUB) with the State of North Carolina. The company has been recognized multiple times as a Best Place to Work in the Triangle and Charlotte markets by American City Business Journals. *Engineering News-Record* has nationally recognized Stewart as a Top 500 Design Firm since 2019.

## STEWART

### STRENGTHENING COMMUNITIES THROUGHOUT THE CAROLINAS



**STEWART OFFICE LOCATIONS**

#### MISSION STATEMENT

Strengthening communities by serving, leading, and working in a creative and interdisciplinary way.

#### AWARDS

2022 Excellence in Structural Engineering  
Structural Engineers Association of North Carolina (SEA of NC)  
Central Piedmont Community College Parr Center

2022 NCASLA Merit Award for Research  
Wilmington Tree Root and Sidewalk Study

2022 Fred Fletcher Outstanding Greenway Volunteer

2021 AIA Charlotte Design Award for New Construction Merit  
Eastway Recreation Center

2021 ABC Carolinas Chapter Excellence in Construction Eagle Award  
American Legion Memorial Stadium (Historical Restoration/Renovation)

2021 Project of the Year - ASCE North Carolina  
Riverfront Park

2021 Healthiest Employer Award  
Springbuk

2021 Downtown Raleigh Alliance Imprint Award  
The Fairweather

2021 Healthiest Employer Award  
Charlotte Business Journal

2020 Gold Well Workplace Award  
Wellness Council of America

2020 Best Places to Work  
Charlotte Business Journal





## GEOMATICS OVERVIEW

STRONGER BY DESIGN



STEWART



### LAND AND TOPOGRAPHIC SURVEYING

Stewart's Geomatics Practice encompasses the full complement of Surveying services, Subsurface Utility Engineering (SUE), and Geospatial Services, including GIS, unmanned aerial systems and photogrammetry. We use the latest in high-speed 3D laser scanning technology and modeling techniques to produce detailed images of complex environments and geometries in only a few minutes. UAS/drones are also implemented by our mapping professionals to capture photography, videography, and point cloud/LiDAR data to effectively and efficiently complete a wide variety of project types. Services provided include:

- ALTA/NSPS
- Route
- Existing Conditions
- **Boundary**
- High-Definition Surveys
- As-Built
- Photogrammetric Control
- Geodetic - GPS
- Topographic
- Environmental
- GIS
- Bathymetric/Hydrographic
- Construction
- SUE
- Ground Penetrating Radar
- Void Detection
- Non-Conductive Pipe Locating
- Vacuum Excavation Test Holes & Trenches
- LiDAR
- Videography
- Unmanned Aerial Systems/Vehicles
- BIM Modeling
- Orthophotography
- Asset Inventory/Management



Stewart's Geomatics team members have the training and equipment they need to perform their jobs safely, no matter where the project takes them.

### TEACHING IN OUR INDUSTRY

We would also like to illustrate just how involved Stewart is in both serving and leading the geomatics industry and profession.

Since 2019, Stewart's Geomatics leadership has taught continuing education classes for:

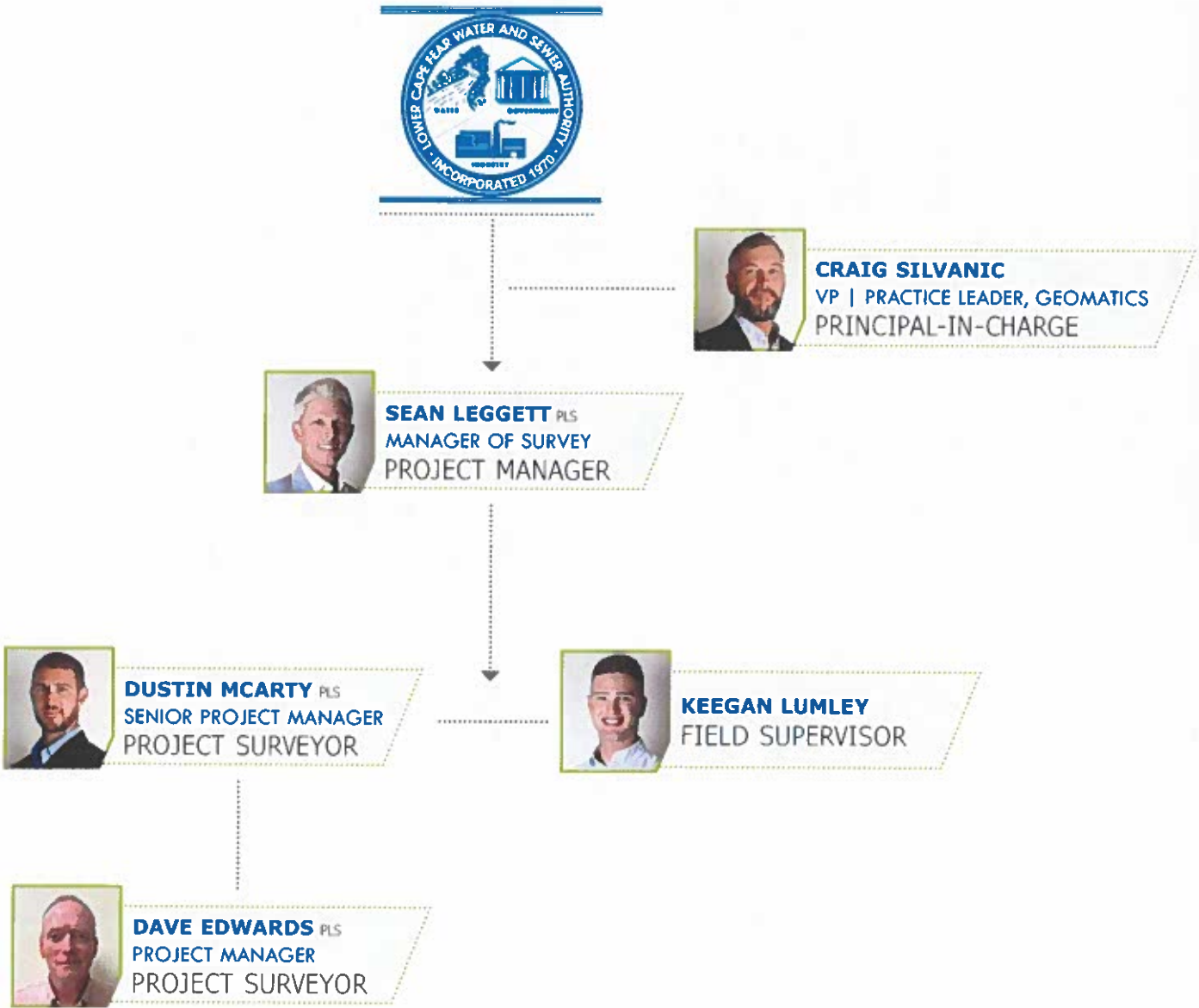
- North Carolina Society of Surveyors (NCSs)
- South Carolina Society of Professional Land Surveyors (SCSPLS)
- American Water Works Association-NC Section (AWWA-NC)
- International Right-Of-Way Association (IRWA)
- North Carolina Floodplain Managers Association (NCFPMA)
- South Carolina Association of Hazard Mitigation (SCAHM)
- North Carolina ArcGIS Users Group (NCAUG)
- North Carolina Section of American Society of Photogrammetry and Remote Sensing (NC-ASPRS)

The topics included:

- Survey Project Management
- Survey Quality Control
- Geodetic Surveying Principles
- Drones & Autonomous Vehicles Effects on the Design Community
- Using GIS for Successful Stakeholder Involvement and Project Management
- Stormwater Management Asset Inventory Tips
- Key Considerations When Requesting UAS Mapping Services



TEAM ORGANIZATIONAL CHART







## SEAN LEGGETT PLS

### PROJECT MANAGER

Sean serves as the Manager of Survey in our Wilmington office with more than 28 years of professional experience. Prior to joining Stewart in May 2019, he worked for WK Dickson, gaining experience in **boundary and physical surveys**, topographic, **construction staking**, utility surveys, and as-built surveys including extensive experience in **easement acquisition and mapping**. Sean also has considerable experience in implementing processes and procedures for field crews and office personnel to ensure quality control standards are met.

#### RELEVANT EXPERIENCE

##### Figure 8 Island Professional Surveying Services | Wilmington, NC

Project Manager | The project involved a sanitary sewer installation on Figure 8 Island in Wilmington. Stewart provided easement staking/monumentation, final plats and legal descriptions, and additional topographic surveys.

##### Coastal Plantation Existing Sewer Survey | Pender County, NC

Project Manager | Stewart's Geomatics team was tasked with locating existing sewer manholes within the community in order to create easement acquisition maps.

##### CFPUA New Hanover County Regional Pump Station | Wilmington, NC

Project Manager | As project manager, Sean's role in this project was client relations and oversight of the survey team throughout the duration of the project. The team verified the property boundary, completed existing conditions and topographic surveys, performed SUE investigation to include Quality Level B services, and prepared a plat recording depicting the new lot.

##### Greenville Loop Trail | Wilmington, NC

Project Manager | The Greenville Loop Trail is a 4.3-mile multi-use path that will run the entire length of Greenville Loop Road, connecting neighborhoods to Bradley Creek Elementary School as well as the commercial areas on either end of Greenville Loop. Upon completion, the trail will create safe connections for bicycling and walking between existing and planned trails and provide a healthy, safe option to get exercise. Stewart began a feasibility study for the project to determine the best path alignment in December 2019. To support this study, Stewart is also providing surveying and subsurface utility engineering services.

##### CFPUA, Downtown Wilmington AIA Sewer | Wilmington, NC\*

Project Manager | Sean led field survey tasks for the inventory and assessment of sewer infrastructure in basins 9, 11, and 12 in Downtown Wilmington. Field personnel conducted a Level 2 MACP and PACP Inspection using NASSCO protocol to gather and code detailed information to fully document all defects, determine condition of the manholes and pipes, and provide the specific information needed to recommend corrective action. Following data collection and analysis, we provided CFPUA with a prioritized, digital, ArcGIS-compatible asset management database.

##### CFPUA, Area 36 Pipe Rehabilitation | Wilmington, NC\*

Project Manager | Sean provided surveying services for the cleaning and assessment of 15,320 LF and rehabilitation of 8,490 LF of sewer mains. This project allowed critical repair to be completed on Kerr Avenue without disruption to the road or traffic.

##### CFPUA, Greenfield Lake Outfall Rehabilitation | Wilmington, NC\*

Project Manager | Sean provided surveying management for the installation of 615 LF of 24-inch gravity sewer, approximately 14 point repairs, replacement of 55 sewer services, 10,205 LF of cured-in-place relining, replacement of 5 manholes, and rehabilitation of 52 manholes. Surveying services included location of manholes, verification of line size and condition of manhole interior, invert elevation, and horizontal and vertical coordinates.

#### EDUCATION

Bachelor of Business Administration,  
Management Information Systems  
University of North Carolina  
at Wilmington

#### REGISTRATION

Professional Land Surveyor  
(PLS):  
North Carolina #L-5085

\*denotes work performed  
with a previous firm





## KEEGAN LUMLEY

### FIELD SUPERVISOR | GEOMATICS

Keegan's six years of experience includes military civil engineering (AutoCAD, GIS, and surveying) and civilian surveying. Keegan holds the foundational knowledge in order to perform the tasks deemed necessary by a wide variety of clients as described in project scope of services. He has a broad range of experience using SurveyLink, Trimble Business Center, OPUS solutions for data processing, Trimble scanner (SX10) robotic total stations (S7, S5, S3) and GPS units (R10, R8, R7) as well as Leica total stations (TS12, TS16). On a daily basis, Keegan provides leadership and oversight to field crews and ensures the capture of accurate data.

#### EDUCATION

Associate's Degree in  
Construction Technology  
Community College of the  
Air Force

Engineering Craftsman  
United States Air Force

#### RELEVANT EXPERIENCE

##### CFPUA, 5th Avenue Sewer & Water Rehabilitation | Wilmington, NC

Project Manager | The team provided survey services along a portion of 5th Avenue in support of water and sewer line improvements. Stewart's scope included a design survey, elevations of accessible storm and sanitary structures, and SUE to include Quality Level B.

##### Figure 8 Island Professional Services | Wilmington, NC

Field Supervisor | Stewart provided easement staking/monumentation, final plats and legal descriptions, and additional surveys in Wilmington, NC.

##### Wisteria Phase 2 Easement Plats | Wilmington, NC

Field Supervisor | Stewart provided design survey and easement staking and platting services on Figure 8 Island in Wilmington, NC.

##### Fayetteville Public Works Commission, Annexation Areas (20, 22, 24) | Fayetteville, NC

Field Supervisor | These multiple projects consisted of improving existing homes that were on septic tank usage, to sewer lines through the city. The work consisted of field surveying services, data processing, construction staking, as-built surveying. Keegan led the effort in being the lead party chief for Area 24 that had multiple crews running on different areas of the project. He assisted in extra field work requested by the clients in an accurate and timely manner to ensure client satisfaction.

##### Greenville Loop Trail | Wilmington, NC

Project Manager | The Greenville Loop Trail is a 4.3-mile multi-use path that will run the entire length of Greenville Loop Road, connecting neighborhoods to Bradley Creek Elementary School as well as the commercial areas on either end of Greenville Loop. Upon completion, the trail will create safe connections for bicycling and walking between existing and planned trails and provide a healthy, safe option to get exercise. Stewart began a feasibility study for the project to determine the best path alignment in December 2019. To support this study, Stewart is also providing surveying and subsurface utility engineering services.

##### Fayetteville Public Works Commission, Devonwood Waterline Relocation | Fayetteville, NC

Field Supervisor | Keegan led and supervised all field survey operations associated with this project. He was responsible for all QA/QC of all field survey data to ensure accuracy and thorough reporting. His clear communication with the PWC, and property owners contributed to keeping the project on schedule and prevented a negative public response.



**DUSTIN MCCARTY** PLS CST**PROJECT SURVEYOR**

With over 15 years of Land Surveying experience, Dustin has exceptional knowledge of principles, practices and procedures of ALTA/NSPS, topographic, boundary surveys and more. He is adept in planning, scheduling and coordinating field crews and entrusted with key projects and programs of business for positive outcomes. He works well with people at all levels, internal/external clients, executive management and key decision makers on all deliverables. Dustin joined Stewart in 2007 and has worked his way up from Field Technician to Senior Project Manager in our Geomatics Department.

#### EDUCATION

Coursework  
West Virginia University

#### REGISTRATION

Professional Land Surveyor (PLS):  
#L-5213

#### RELEVANT EXPERIENCE

- **Wake Forest Waterline Replacement** | Wake Forest, NC  
Project Manager
- **North Carolina Railroad Company Corridor Monumentation** | Morrisville, NC  
Project Surveyor
- **UNC Rail STGL Boundary Survey** | Chapel Hill, NC  
Project Surveyor
- **University Point Staking** | Elon, NC  
Project Surveyor
- **State Street Water and Sewer Improvements** | Raleigh, NC  
Project Surveyor
- **South Downtown Sewer Improvements** | Greenville, SC  
Project Surveyor

**DAVE EDWARDS** PLS**PROJECT SURVEYOR**

Dave has 45 years of experience completing diverse work experience within various disciplines of land surveying and mapping. Property surveying experience includes extensive work in the field and office with ALTA/ACSM surveys, commercial and residential subdivisions, hydroelectric facilities, and railroad properties. Topographic surveying history includes route surveys for sanitary sewer lines, municipal waterlines, storm drainage facilities, river cross sections for flood, hydraulic, and hydrologic studies. Strong ability to work with co-workers to arrive at creative and timely solutions to project assignments.

#### EDUCATION

Bachelors in Geography  
UNC Wilmington

#### REGISTRATION

Professional Land Surveyor (PLS):  
NC #12345

#### RELEVANT EXPERIENCE

- **CIP Major Sewer and Pipe Spray** | Wilmington, NC  
Project Surveyor
- **Fayetteville PWC Area 24** | Fayetteville, NC  
Project Surveyor
- **Caisons Creek ALTA Boundary Survey** | South Brunswick, NC  
Project Surveyor
- **US 301 DPW Sewer Route** | Durham, NC  
Project Surveyor
- **Greenville Loop Trail** | Wilmington, NC  
Project Surveyor
- **5th Avenue Sewer and Water Rehabilitation** | Wilmington, NC  
Project Surveyor
- **Dorchester County Water and Sewer Department** |  
Dorchester County, SC  
Project Surveyor



## WISTERIA PHASE II EASEMENT PLATS

### EASEMENT PLATS



#### LOCATION

Wilmington, NC

#### OWNER

City of Wilmington  
102 N. Third Street  
Wilmington, NC  
910.341.7800

#### CLIENT

Kimley Horn

#### DATES

Start: March 2021  
Completion: July 2021

#### PROJECT LENGTH

~4,000 LF

#### DISCIPLINES

Survey

#### TEAM

Sean Leggett, PLS  
Project Manager  
Keegan Lumley  
Field Supervisor

### PROJECT OVERVIEW

The City of Wilmington was seeking improvements to alleviate flooding, provide greater access for the city to perform long-term maintenance and help clean up the water quality of stormwater runoff entering Hewletts Creek.

### STEWART RESPONSIBILITIES

Stewart was responsible for property owner research, survey of property corners and rights-of-way to the extent necessary for easement acquisition. We prepared proposed permanent drainage easement and temporary construction easement plats, created supporting legal descriptions and field stake easement corners upon owner approval of easement plats.

Sean provided the City of Wilmington with scheduling and deliverable updates in order to ensure project milestones are upheld and met in a timely manner.



## FIGURE 8 PROFESSIONAL SERVICES

### COASTAL SURVEYING



STEWART

**LOCATION**

Wilmington, NC

**OWNER**

Figure Eight Island Utility Company, Inc.

David Kellam

15 Bridge Road

Wilmington, NC 28411

910.686.0625

david@figure8homeowners.com

**CLIENT**

WK Dickson

**DATES**

Start: Summer 2018

Completion: Summer 2018

**DISCIPLINES**

Surveying

**TEAM**

Sean Leggett, PLS

Project Manager

Keegan Lumley

Field Supervisor

**PROJECT OVERVIEW**

The project involved a sanitary sewer installation on Figure 8 Island in Wilmington.

**STEWART RESPONSIBILITIES**

Stewart provided easement staking/monumentation, final plats and legal descriptions, and additional topographic surveys.



## GREENVILLE LOOP TRAIL

### GREENWAY/TRAIL



#### LOCATION

Wilmington, NC

#### CLIENT/OWNER

City of Wilmington  
Anthony Geathers, Construction  
Project Manager  
102 North Third Street  
Wilmington, NC 28402  
910.341.5889  
anthony.geathers@wilmingtonnc.gov

#### DATES

Start: 2020  
Construction Start: Late 2021  
Completion: TBD

#### PROJECT LENGTH

4.3 miles

#### DISCIPLINES

Landscape Architecture  
Surveying  
SUE

#### TEAM

Sean Leggett, PLS  
Project Manager  
Keegan Lumley  
Field Supervisor

### PROJECT OVERVIEW

The Greenville Loop Trail is a 4.3-mile multi-use path that will run the entire length of Greenville Loop Road, connecting neighborhoods to Bradley Creek Elementary School as well as the commercial areas on either end of Greenville Loop. Upon completion, the trail will create safe connections for bicycling and walking between existing and planned trails and provide a healthy, safe option to get exercise.

### STEWART RESPONSIBILITIES

Stewart began a feasibility study for the project to determine the best path alignment in December 2019. To support this study, Stewart is also providing surveying and subsurface utility engineering services.



### PROJECT CHALLENGES & SOLUTIONS

The City advanced the phase 1 portion of the survey to keep the project on track as the overall preliminary design process was impacted by responses to the CoVid pandemic. This allows us to now in phase 2 to begin final design on that surveyed portion while the balance of the survey is completed, saving two months on the project schedule.



## NORTH CAROLINA RAILROAD COMPANY (NCRR)

### SURVEYING/CORRIDOR MONUMENTATION



**LOCATION**  
Raleigh, NC

**CLIENT/OWNER**  
Kristian Forslin, GISP, PLS  
GIS and Survey Manager  
North Carolina Railroad Company  
919.954.7601  
kristianforslin@ncrr.com

**DATES**  
Start: May 2019  
Completion: 2021

**PROJECT LENGTH**  
55 miles

**DISCIPLINES**  
Surveying

**TEAM**  
Dustin McCarty, PLS  
Project Surveyor

### PROJECT OVERVIEW

The NCRR Corridor stretches from the coast to the mountains and this project involved corridor monumentation surveys at Union Station in Raleigh. Previous work for this client involved a longer stretch of the corridor, totaling 55 miles.

### STEWART RESPONSIBILITIES

Stewart's geomatics team completed corridor monumentation surveys at Union Station. Stewart was contracted to place boundary monuments at 0.5 mile intervals all along the corridor starting in Morrisville and ending around Pine Level, extending roughly 45 miles long. Each monument was 10" in diameter and placed 4 feet deep. This project took almost 2 years to complete and concluded with almost 200 monuments.

The project involved installing monumentation and integration into the National Spatial Reference System via the National Geodetic Survey Blue-Booking process, field observations and data processing, a WINDESC database for the project, and the creation of a survey report that was submitted to NGS for acceptance.



## NEW HANOVER COUNTY PUMP STATION

### PUBLIC UTILITIES



#### LOCATION

Southern New Hanover County, NC

#### OWNER

CFPUA

Craig Wilson

235 Government Center Drive

Wilmington, NC 28403

910-332-6550

#### CLIENT

Black & Veatch

#### DATES

Start: March 2021

Completion: July 2021

#### SURVEY COST

\$60K

#### PROJECT LENGTH

2.25 MILES

#### DISCIPLINES

Topographic Survey

Easement Acquisition Survey

#### TEAM

Sean Leggett, PLS

Project Manager

Keegan Lumley

Field Supervisor

#### PROJECT OVERVIEW

Cape Fear Public Utility Association sought out a firm to provide Topographic and Easement Acquisition Surveys to support the development of a new regional sewer pump station and force main in Southern New Hanover County.

#### STEWART RESPONSIBILITIES

Stewart performed all necessary Geomatic, Easement Acquisition and Level B SUE tasks to support the client's design team. The team utilized BMPs and QC measures to ensure complete and consistent deliverables.

#### PROJECT CHALLENGES & SOLUTIONS

A challenge of this project was heavy intersection highway traffic. Stewart mitigated this by performing work during off peak hours. This project team will maintain the same flexibility in working with LCFWASA.



## AREA 24 - FAYETTEVILLE PUBLIC WORKS COMMISSION

### PUBLIC UTILITIES



#### LOCATION

Fayetteville, NC

#### OWNER

Fayetteville PWC  
955 Old Wilmington Road  
Fayetteville, NC  
910.483.1382

#### CLIENT

Black and Veatch

#### DATES

Start: 2019  
Completion: Ongoing

#### PROJECT LENGTH

~20,000 LF

#### TEAM

Sean Leggett, PLS  
Project Manager  
Keegan Lumley  
Field Supervisor  
Dave Edwards  
Project Surveyor

#### PROJECT OVERVIEW

The project consisted of sewer installation of approximately 20,000 feet of sewer mains and 257 sewer services in Fayetteville.

#### STEWART RESPONSIBILITIES

Stewart conducted property owner research, survey of property corners and rights-of-way to the extent necessary for easement acquisition. Additionally, the project team was tasked with preparing proposed permanent drainage easement and temporary construction easement plats and the creation of supporting legal descriptions. The final step in the process is to field stake easement corners upon owner approval of easement plats.



## STEWART'S SURVEYING QUALIFICATIONS FOR LCFWASA

Our team possesses the experience and expertise to provide any surveys needed by Lower Cape Fear Water and Sewer Authority. The brief description that follows outlines our proposed Project Approach.

### PROJECT SCOPE DEVELOPMENT

Our team, upon request by LCFWASA staff and in collaboration with other project team consultants, will determine the limits and details needed for the proposed project ensuring a cost effective survey and mapping solution for the design and construction for each project based on the project type, location, and time of year.

### RESEARCH

Using any and all documents provided by the Agency and as found in the City and County records, the project route will be researched to acquire relevant deeds and maps of the subject and adjoining properties. Working with Agency staff, Stewart will ensure that all adjoining property owners are notified of the survey. All plans and records will be researched and utility easements of record will be identified.

### CONTROL SURVEY

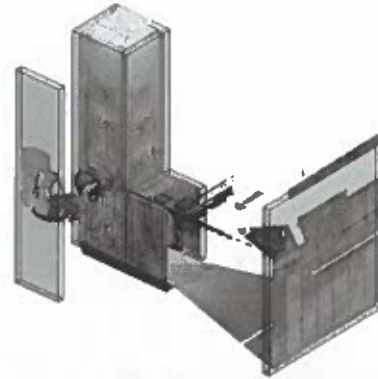
At least two control points will be set and tied to the North Carolina Grid System by use of GPS survey grade receivers. These points will be located on or near the site. Grid coordinates of a designated control corner on the project will be shown on all mapping and plans to allow for future retracement and to ease the inclusion of the survey results into the Agency's GIS geodatabase, if desired. When appropriate, control points for aerial photography will be observed with GPS to facilitate mapping using photogrammetric methods.

### FIELD SURVEY

All survey services will be performed based on the Standards of Practice for Land Surveying in North Carolina. The surveys will be under the direct supervision of a North Carolina

Professional Land Surveyor. The survey will be horizontally tied to the North Carolina State Plane Coordinate System under the North American Datum of 1983 (NAD83)(2011). Vertically, the project will be tied to the North American Vertical Datum of 1988 (NAVD88). The project's units will be the U.S. Survey Foot.

Stewart provides scanning and 3D modeling as needed. We are currently using scanning to perform as-builts on sanitary sewer inventory projects. We have licensed UAS operators for mapping and photography.



*This 3D scan of a manhole is from a surveying inventory project we completed for the City of Durham. We are adept at a wide range of services for our municipal and university clients.*

### MAPPING

Unless otherwise specified, the drawing layering system will be provided based upon a system established by the National CAD Standards (NCS).

### MAPPING PROGRAMS AND SOFTWARE

Stewart uses AutoCAD Civil 3D and Microstation to draft survey maps. Drawings layers are based on National CAD Standards (NCS), NCDOT Location & Surveys Workspace, or client-specified layer template. Other programs for GIS and aerial photography maps include Agisoft Metashape, Cardinal Systems VR Suite, Geocue LP360, ArcPro, Faro Scene, and Autodesk Recap.



*Stewart has held a long-term contract with the City of Charlotte to provide on-call surveying services. The team is capable of quick turnaround times for our municipal clients.*



**SCHEDULES & BUDGETS**

Stewart can start on typical projects within 15 days from notice to proceed. Stewart will complete the preliminary version of the survey for review and approval in a timely manner determined by the size and scope of the project.

**KNOWLEDGE OF LOCAL CONDITIONS**

Stewart opened our Wilmington office, in 2019, in order to continue to strengthen our coastal communities and impact residents lives in a big way. Our local team members have lived and worked in the area for decades.

**ABILITY TO WORK EFFECTIVELY WITH CITY STAFF, OTHER AGENCIES, AND RELATED PARTIES**

Stewart has already completed many successful projects for the County and other Public Utility Agencies across the state. With a long history of providing services to state agencies, municipalities, community colleges and universities throughout North Carolina, our commitment is a high quality, timely service yielding long lasting relationships with our clients.



*Stewart team members are experienced and knowledgeable with codes and regulations in our coastal communities, including Leland.*

| <b>STEWART</b>                            | <b>December 2022</b> |    |    | <b>January 2023</b> |   |    |    |    | <b>February 2023</b> |    |    |    | <b>March 2023</b> |    |    |    | <b>April 2023</b> |    |    |    |
|-------------------------------------------|----------------------|----|----|---------------------|---|----|----|----|----------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|
|                                           | 12                   | 19 | 26 | 2                   | 9 | 16 | 23 | 30 | 6                    | 13 | 20 | 27 | 6                 | 13 | 20 | 27 | 3                 | 10 | 17 | 24 |
| RESEARCH                                  |                      |    |    |                     |   |    |    |    |                      |    |    |    |                   |    |    |    |                   |    |    |    |
| SET CONTROL/RECOVER PROPERTY CORNERS      |                      |    |    |                     |   |    |    |    |                      |    |    |    |                   |    |    |    |                   |    |    |    |
| CALCULATIONS - RECONCILE PROPERTY CORNERS |                      |    |    |                     |   |    |    |    |                      |    |    |    |                   |    |    |    |                   |    |    |    |
| PRELIMINARY MAPPING                       |                      |    |    |                     |   |    |    |    |                      |    |    |    |                   |    |    |    |                   |    |    |    |
| SEND MAPPING FOR REVIEW                   |                      |    |    |                     |   |    |    |    |                      |    |    |    |                   |    |    |    |                   |    |    |    |
| REVISE MAPS BASED ON COMMENTS             |                      |    |    |                     |   |    |    |    |                      |    |    |    |                   |    |    |    |                   |    |    |    |
| STAKE RIGHT OF WAY/ EASEMENTS             |                      |    |    |                     |   |    |    |    |                      |    |    |    |                   |    |    |    |                   |    |    |    |
| DELIVER FINAL MAPPING                     |                      |    |    |                     |   |    |    |    |                      |    |    |    |                   |    |    |    |                   |    |    |    |



## REFERENCES

**01**

Cape Fear Public Utility Authority  
**Craig Wilson**  
 235 Government Center Drive  
 Wilmington, NC 28403  
 910-332-6550

Sean Leggett has worked with CFPWA on over a dozen projects throughout his career.

**02**

WK Dickson  
**Marc Hortsman, PE, PH, CFM**  
 Project Manager  
 720 Corporate Center Drive  
 Raleigh, NC 27607  
 919.256.5642  
 mhortsman@wkdickson.com

Marc has extensive experience working with our Geomatics group on water and sewer projects across the state. Projects include S. Shore Drive in Surf City and Oak Island 801 Building Drainage Improvements.

**03**

WSP USA Inc.  
**Mark N. Breen, PE, M.ASCE**  
 Senior Water Resources Engineer  
 1001 Morehead Square Drive, Suite 610  
 Charlotte, NC 28203  
 980.365.2324  
 mark.breen@wsp.com

Stewart recently completed the Upper Taggart Creek Outfall Replacement Project with WSP in Charlotte.

## WHAT DIFFERENTIATES STEWART?

EXPERIENCE + PARTNERSHIP + OUR CORE VALUES = SUCCESS

**01**

### EXPERIENCE

Stewart has provided professional services on thousands of projects of all sizes and scales across the Southeast for over 27 years. Our experienced engineers, surveyors and landscape architects have the knowledge to complete projects in a variety of services for Brunswick County.

**02**

### A TRUSTED PARTNER IN BRUNSWICK COUNTY

We have worked in Brunswick County on the Cape Fear Regional Jetport, and the Southport Wastewater Treatment Plant. Our successful partnership on projects like these has shown that we work well with County staff to help you realize your goals for Brunswick County. Stewart's Geomatics practice currently holds an On-Call contract with the Town of Leland.

**03**

### INTEREST IN AGENCY PROJECTS

Stewart understands the importance of accurate and clear easement locations along this raw water main. We are interested in projects like these because we know these projects impact residents' lives in big, meaningful ways.

**04**

### WE LISTEN TO YOU

Every great project begins with a solid understanding of how we can use our experience and skills to solve an issue or make an improvement. From the start of any task, our team dives in with a kickoff meeting with our client to gain a clear picture of the desired outcome, so we can make sure we deliver the exact services needed.



The background of the page is a solid dark blue. Overlaid on this are several thin, white, hand-drawn style lines. These lines form a series of overlapping circles and intersecting straight lines, creating a complex, abstract geometric pattern that resembles a stylized 'S' or a series of nested shapes. The lines vary in thickness and orientation, giving the design a dynamic and layered appearance.

**STRONGER BY DESIGN**  
**[stewartinc.com](http://stewartinc.com)**