



STATEMENT OF QUALIFICATIONS

Routine Engineering Services for Water Projects

SOQ 22-013, Resolution No. 138809

for Jefferson Parish



March 2022



Trigon Associates, llc
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March 31, 2022

Jefferson Parish Council
General Government Building
200 Derbigny Street, Suite 6700
Gretna, Louisiana 70053

Re: Routine Engineering Services for Water Projects - SOQ 22-013, Resolution No. 138809

Dear Council Members:

Trigon Associates, LLC (Trigon) is pleased to submit our Statement of Qualifications (SOQ) to Jefferson Parish (Parish) for the referenced work. Our submittal is in accordance with the advertised Request for Qualifications.

Trigon is a Louisiana Small Business Enterprise (SBE) and a woman-owned business specializing in providing engineering, consulting and management services. Our principals have over 125 years of combined experience with applicable municipal and public works projects, most of it from the sewer, water, drainage/stormwater and transportation areas, including significant experience with federal, state, and local grant programs. Trigon is qualified to perform and successfully complete sewer-related projects for the Parish, with a few of our key qualifications as follows:

- ▲ **Trigon's principals include two former Jefferson Parish employees, totaling over 15 years of experience with the Parish; one served in roles as the Sewerage Capital Improvements Program Manager, Assistant Director and Acting Director within the Department of Sewerage.**
- ▲ Trigon's principals and staff are experienced program managers, design managers, construction managers, and engineers from multiple capital improvement programs, particularly sewer.
- ▲ Professional engineers registered in Louisiana, Alabama, Arkansas, California, Florida, Mississippi, New York, Oklahoma, Texas, Virginia, and Washington, DC.
- ▲ Experienced with planning, engineering, design, construction inspection, construction management and certification efforts of sewer projects.

We appreciate the opportunity to submit our SOQ and look forward to further developing Trigon's relationship with the Parish through successful projects. Should you require additional information during your evaluation, please do not hesitate to contact us.

Sincerely,

Michelle Herbert
Chief Executive Officer

TEC Professional Services Questionnaire

A. Project Name and Advertisement Resolution Number:

Routine Engineering Services for Water Projects

SOQ 22-013, Resolution No. 138809

B. Firm Name & Address:

Trigon

Trigon Associates, llc
1515 Poydras Street, Suite 2200
New Orleans, LA 70112

C. Name, title and contact information of Principal, as defined in Section 2-926 of the Jefferson Parish Code of Ordinances, who is a registered, licensed architect, professional engineer, or surveyor in the State of Louisiana:

Gregory A. Kolenovsky, PE, PMP, PgMP – Vice President/Principal-in-Charge (LA Professional Civil Engineer#30266)
Trigon Associates, llc
1515 Poydras Street, Suite 2200
New Orleans, LA 70112
P: 504.585.5767 F: 504.585.5747
gkolenovsky@trigonassociates.com

D. Name and contact information of employee who is a registered and licensed architect, professional engineer, or surveyor in the State of Louisiana in the applicable discipline. A subcontractor may be substituted here only if the advertised Project requires more than one discipline.

SAME AS ITEM C.

E. Please provide the number of employees whose primary function corresponds with each category:

<u>4</u> Administrative	<u> </u> Estimators	<u> </u> Specification Writers
<u>1</u> Architects (Licensed)	<u>2</u> Geologists	<u>1</u> Structural Engineers
<u> </u> Chemical Engineers	<u> </u> Geotechnical Engineers	<u> </u> Graduate Engineers
<u>10</u> Civil Engineers	<u> </u> Interior Designers	<u>2</u> Project Managers
<u>2</u> Construction Inspectors	<u>1</u> Landscape Architects	<u> </u> Clerical
<u> </u> Ecologists	<u> </u> Land Surveyor	<u>1</u> Grant/Funding Specialist
<u> </u> Electrical Engineers	<u>1</u> Mechanical Engineers	<u> </u> Sanitary Engineers
<u>1</u> Engineer Intern	<u>2</u> Environmental Engineers	<u>6</u> Other
<u> </u> Professional Land Surveyors		<u>34</u> TOTAL

F. Is this submittal a JOINT-VENTURE? Please check: YES NO X

If marked "No" skip to Section I. If marked "Yes" complete Sections G-H.

TEC Professional Services Questionnaire

G. If submittal is by JOINT-VENTURE, list the firms participating and outline specific areas of responsibility (including administrative, technical, and financial) for each firm. Please attach additional pages if necessary.

1. N/A

2.

H. Has this JOINT-VENTURE previously worked together? Please check:

YES _____ NO _____

I. List all subcontractors anticipated for this Project. Please note that all subcontractors must submit a fully completed copy of this questionnaire, applicable licenses, and any other information required by the advertisement. See Jefferson Parish Code of Ordinances, Sec. 2-928(a)(3). Please attach additional pages if necessary.

Name & Address:	Specialty:	Worked with Firm Before (Yes or No):
1. BFM Corporation, LLC 534 Williams Boulevard Kenner LA 70062 504-468-8800	Surveying	Yes
2. Eustis Engineering Services, LLC 3011 28th Street Metairie, LA 70002 (504) 834-0157	Geotechnical Engineering	Yes

J. Please specify the total number of support personnel that may assist in the completion of this Project:

N/A

TEC Professional Services Questionnaire

K. List the professional in charge, key persons, specialists, and individual consultants anticipated for this Project and provide their relevant information below. If necessary, please attach additional documentation (i.e. resume) that demonstrates the employment history and experience of the Firm's key persons that may assist in the completion of this Project. Please attach additional pages if necessary.

PROFESSIONAL IN CHARGE OF PROJECT:

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Greg Kolenovsky, PE, PMP, PgMP

Vice President

Project Assignment:

Review/QA & QC

Name of Firm with which associated:



Years' experience with this Firm:

13

Education: Degree(s)/Year/Specialization:

BS in Civil Engineering, University of Texas at Austin, 1998

Active registration: Year first registered/discipline:

2002, Civil Engineer, Louisiana (also registered in AL, AR, FL, MS, OK, TX and D.C.)

2005, Project Management Professional (PMP), Project Management Institute

2010, Program Management Professional (PgMP), Project Management Institute

Other experience and qualifications relevant to the proposed Project:



Mr. Kolenovsky has over 25 years of planning; design; and project, program and construction management experience. He has significant experience in the management of water, wastewater, drainage, and transportation projects and capital improvement programs, having served in various technical and management roles on multiple programs. Mr. Kolenovsky's experience includes system analysis, troubleshooting and computer modeling of hydrologic and water resource systems, as well as engineering and design of various water treatment, storage, and distribution projects. He has managed and executed a number of disaster recovery and hazard mitigation projects, including many related to water systems. Mr. Kolenovsky excels in project and program management and is certified as both a Project Management Professional (PMP) and Program Management Professional (PgMP) by the Project Management Institute, one of only approximately a few thousand PgMPs worldwide and one of a few in the State of Louisiana.

RELEVANT PROJECT EXPERIENCE

Water Line Replacement Program – Lakewood, Navarre and West End Neighborhoods, New Orleans, LA. Review and QA/QC for engineering, design and construction services for water line improvements in three separate design and construction projects. Also includes street repair and restoration efforts, replacement of drainage and sewer systems in accordance with City, Federal DOT and other local agency standards/requirements. \$5.5M to \$7.5M of water line construction will occur. Construction is pending for Lakewood and Navarre while design is being finalized for West End.

TEC Professional Services Questionnaire

Kolenovsky, continued.

Other experience and qualifications relevant to the proposed Project:

Delta Aire Drive Infrastructure Improvements, Plaquemines Parish, LA. Served as Project Manager for this effort to improve the infrastructure along this concrete street. Scope included improvements to the existing drainage system to increase capacity and minimize street flooding, installation of a new water line, repairs to the sewerage systems, and associated roadway reconstruction.

East 70th Street Water Main Relocation Design, Shreveport, LA. Served as Project Manager for the design of improvements to transfer all existing water pipeline laterals and private metered service lines from an existing 8-inch water main, on East 70th St from Creswell Rd to East Ridge Dr, to an existing parallel 20-inch water main that is remaining in place. The existing 8-inch water main was abandoned in place upon completion of all potable pipeline transfers. This utility relocation project was performed in strict coordination with the Louisiana Department of Transportation and Development's (DOTD) roadway project, (SP#102-02-0031).

District B Miscellaneous Water Improvements; Shreveport, LA. Provided QA/QC for detailed design in support of replacement of 4,000 linear feet of 8-inch potable water lines for the City of Shreveport (COS). Project tasks included field-confirmation of survey, coordination with existing utilities, design of new water line locations in plan and profile in accordance with COS standard specifications and details, and coordination with CAD support team.

Water Asset Management Plan, Jefferson Parish, LA. Served as Project Engineer and provided review and QA/QC on this project, which included a comprehensive assessment of the water distribution systems on the East and West Banks of Jefferson Parish. The assessment focused on two tracks to evaluate the system: physical condition assessment and hydraulic evaluation. The structural condition was evaluated with respect to criteria such as water main age, history of breaks, water leakage, customer impact and location. A prioritized Capital Improvement Plan was developed.

Water Hammer Hazard Mitigation Project, New Orleans, LA. Served as Project Engineer and provided review and QA/QC for efforts to mitigate water hammer events/effects on the East Bank by upgrading facilities at the S&WB's East Bank Water Treatment Plant and power supply infrastructure at the S&WB's power plant. Includes improvements to pump stations, plant piping/valving/metering, new building to house VFDs, elevated storage tanks and remote bladder tank installations.

Water Quality Master Plan, New Orleans, LA. Served as Project Manager for major water treatment plants – the Carrollton Water Treatment Plant (WTP) on the East Bank of the Mississippi River as well as the Algiers WTP on the West Bank. The project generally consisted of performing an assessment of both the Carrollton WTP and the Algiers WTP to determine physical, operational and process conditions of all infrastructure at the plants. Based on the assessments, the current status was documented and a forecast of issues to be addressed was developed, including a prioritized list of short- and long-term needs required to address reliability and redundancy.

Waggaman Water Distribution System Improvements - Feasibility Study, Waggaman, LA. Provided review & QA/QC services on this project, which included the evaluation of the water distribution system and design of improvements in the Waggaman area of Jefferson Parish. This area was experiencing operational issues such as low water pressure. Efforts included collecting and reviewing existing water system information, utilizing GIS of water system, running hydraulic models, identifying water system improvements and design services.

Highway 11 Water Line Improvements, Buras, LA. Provided review & QA/QC services for the installation of 2,000' of new 8" PVC water main to replace an old cast iron water main. Pedestrian improvements funded by a federal grant were implemented following the utility work. Various public facilities (e.g., library, auditorium, school and fire station) are served by these improvements.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Regina Cassanova, PE
Principal Engineer

Project Assignment:

Project Manager

Name of Firm with which associated:**Years' experience with this Firm:**

11

Education: Degree(s)/Year/Specialization:

BS in Civil Engineering, University of New Orleans, 2003

Active registration: Year first registered/discipline:

2010, Civil Engineer, Louisiana (Also registered in FL and TX)

Other experience and qualifications relevant to the proposed Project:

Ms. Cassanova is a Professional Engineer with 21 years of experience in the design and construction of municipal water and wastewater systems and treatment facilities. Additional skills include project management of design and construction projects, and program management related capital improvements. She has also worked on numerous projects involving drainage/storm water, roads, buildings and facilities and general program management. Ms. Cassanova also has experience on numerous disaster recovery and hazard mitigation projects involving FEMA and GOHSEP and has worked on projects in the US, Australia, Haiti, Jordan, Libya and Palestine. Her experience includes the planning, engineering, design and construction of municipal water and wastewater systems and treatment facilities, drainage/flood-control, storm water and coastal restoration projects. Additional skills include project management of design and construction projects, and program management related to capital improvement programs, as well as hydrologic and hydraulic calculations and designs. Prior to joining Trigon, she served as a process engineer for two (2) internationally recognized engineering firms within a Membrane National Technology Practice Group and a Water/Wastewater Treatment Plants specialty group. Ms. Cassanova has experience with projects in the United States, Australia, Haiti, Jordan, Libya and Palestine. She is a licensed Professional Civil Engineer in Texas, Louisiana and Florida.

RELEVANT PROJECT EXPERIENCE

Highway 11 Water Line Improvements, Buras, LA. Project Manager for design, bid support and construction phase services associated with the installation of 2,000' of new 8" PVC water main to replace an old cast iron water main. Pedestrian improvements funded by a federal grant were implemented following the utility work. Various public facilities (e.g., library, auditorium, school and fire station) are served by these improvements.

TEC Professional Services Questionnaire

Cassanova, continued.

Other experience and qualifications relevant to the proposed Project:

Water Quality Master Plan, New Orleans, LA. Senior Engineer for assessment of the S&WB's Carrollton and Algiers Water Treatment Plants to determine physical condition of the infrastructure at each plant. Based on the assessment, the current status and forecast of issues to be addressed were developed, as well as a prioritized listing of short- and long-term needs required at the plants to address reliability and redundancy.

Water Line Replacement Program, New Orleans, LA. Project Manager for design services on this FEMA-reimbursed recovery program for the Sewerage and Water Board of New Orleans. Trigon is the prime engineer of water line replacements in the four (4) neighborhoods of Lakeview, Lakewood, Navarre and West End, which includes over 70,000 feet of new water line. Water lines being replaced are determined based upon pipe evaluation criteria agreed upon between FEMA and S&WB. The resulting replacements have to be closely coordinated with the City's FEMA-reimbursed roadway/sidewalk recovery work, as well as other ongoing recovery and capital improvement projects.

Water Hammer Hazard Mitigation Project, New Orleans, LA. Project Manager/Senior Engineer for efforts to mitigate water hammer events/effects on the East Bank by upgrading facilities at the S&WB's East Bank Water Treatment Plant and power supply infrastructure at the S&WB's power plant. Includes improvements to pump stations, plant piping/valving/metering, new building to house VFDs, elevated storage tanks and remote bladder tank installations.

East 70th Street (Creswell Road to E. Ridge Drive) Water Main Relocation, Shreveport, LA. Design of improvements to transfer all existing water connection and private metered service lines from an existing 3,500 LF 8-inch water main on East 70th Street to an existing parallel 20-inch water main. The existing 8-inch main was abandoned in place. Also included replacement of approximately 2,000 LF of 20-inch water main by excavation and trenchless installation. The utility relocation design was performed in coordination with a LA DOTD roadway project to widen E. 70th Street (SP102-02-0031).

Louis Morel Lane Infrastructure Improvements, Buras, LA. Included assessment design, bid support and construction phase services for rehabilitating a portion and reconstructing a portion of a 1,300' residential asphalt street. Also included re-designing/improving drainage capacity along the street by installing new catch basins and culverts and re-shaping/relocating a drainage ditch along the street. A new outlet for the storm water was installed to discharge to a large drainage canal at the back of the street. Project also included significant water system improvements, with over 1,200 LF of new water mains, valves and hydrants.

Delta Aire Drive Infrastructure Improvements, Plaquemines Parish, LA. Served as project engineer for this effort to improve the infrastructure along this concrete street. Scope included improvements to the existing drainage system to increase capacity and minimize street flooding, installation of a new water line, repairs to the sewerage systems, and associated roadway reconstruction.

Water Line Replacement Program – 6 Areas throughout City, New Orleans, LA. Trigon's project manager for engineering, design and construction services in a sub-consultant role for water line improvements in six separate design and construction projects. Also includes street repair and restoration efforts, as well as the replacement of drainage and sewer systems in accordance with City, Federal DOT and other local agency requirements. \$6M to \$10M of water line construction will occur. Design and construction has been completed for one area; Design has been completed for four (4) other areas and design is ongoing in the remaining area. Construction is anticipated in 2017 and 2018.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Archana Sharma, PE, ENV SP, LEED AP
Project Manager/Sr. Environmental Engineer

Project Assignment:

Senior Engineer

Name of Firm with which associated:

Trigon

Years' experience with this Firm:

2.5

Education: Degree(s)/Year/Specialization:

MS, 2007, Environmental Engineer, University of Houston
B. Tech, 2005, Chemical Engineering, Sri Venkateswara College of Engineering, Anna University, India

Active registration: Year first registered/discipline:

2010, Professional Engineer, Texas License No. 107725, 09-30-2022
Envision Sustainability Professional
Leadership in Energy and Environmental Design (LEED) Accredited Professional

Other experience and qualifications relevant to the proposed Project:

Ms. Sharma has over 14 years of experience as an Environmental Engineer and Project Manager, specializing in water and wastewater infrastructure projects. She holds a Bachelor's degree in Chemical Engineering from Anna University in India, as well as a Masters degree in Environmental Engineering from the University of Houston. Archana is a licensed Professional Engineer in the State of Texas and a Leadership in Energy and Environmental Design Accredited Professional (LEED AP). Her project experience includes design and construction phase services for collection/distribution systems, pumping stations, water treatment plants and wastewater treatment plants, including process design, mechanical design and general civil engineering. She also has experience in the design of processes/facilities for reclaimed water from wastewater treatment plant effluent. She is well versed with regulatory requirements and has experience in developing permit applications and related documents and coordinating with the agencies for project permitting needs.

RELEVANT PROJECT EXPERIENCE

Water Main Replacement Program for Multiple Neighborhoods in the Midtown Area of Houston, TX. Serving as Project Manager for Trigon's design and engineering support services for the replacement of existing water lines, and the installation of new waterlines, in several neighborhoods throughout the City of Houston. Services also included attending kick-off and project update meetings for each of the neighborhoods.

TEC Professional Services Questionnaire

Sharma, continued.

Other experience and qualifications relevant to the proposed Project:

Source Water Protection Plan (SWPP); Houston, TX. As a major subconsultant, Trigon supported efforts to finalize a Source Water Protection Plan (SWPP) and Wellhead Compliance Study for the City of Houston. Ms. Sharma served as Project Manager for Trigon's tasks on this project, which included determining and summarizing all applicable state (Texas) and federal (EPA) source water protection regulations; more detailed review and summary of regulations specific to surface water and groundwater source/wellhead protection; and inventory and summarize information from maps of the City's existing GIS data on surface water and ground water sources and wellhead maps to determine the basis for understanding where the community's source water and potential contaminants originate and establish source water protection strategies for these areas.

Banner Lift Station Replacement Design and Sanitary Sewer and Water Line Design; Houston, TX. This project was developed due to TxDOT road widening project that required lift station relocation and improvements and relocation of sanitary sewer and water lines. Ms. Sharma served as Lead Engineer and Engineer of Record for design of water and sanitary sewer lines, and lift station improvements. Served as the task manager and point of contact for interdisciplinary coordination among engineering support staff, vendors, sub-consultants and with the client.

Hurricane Harvey Disaster Recovery for Wastewater Treatment Plants; City of Houston, TX. Ms. Sharma served as Project Manager for Trigon providing professional engineering services as a subconsultant related to Hurricane Harvey Disaster Recovery of multiple WWTPs, including the 69th Street WWTP, Sims North WWTP, Kingwood Central WWTP, and Clinton Park WWTP, with a range from the largest City WWTP to average and small WWTPs. Responsibilities to date have included participating in multiple site visits at the WWTPs to evaluate pre-Hurricane Harvey conditions and assess damage due to Hurricane Harvey.

Disaster Mitigation for Wastewater Facilities Induced by Hurricane Harvey, Package 1 – Kingwood Area; Houston, TX. Project Manager for Trigon's efforts on this \$200M hazard mitigation project to assess consolidation of wastewater facilities to mitigate future flood hazards and support funding from the Federal Emergency Management Agency (FEMA). The project was necessitated due to the extensive flooding from Hurricane Harvey that had a devastating impact on the City of Houston (City) wastewater infrastructure. The scope of work includes design of infrastructure needed to reconfigure the wastewater collection and treatment system to consolidate the Kingwood Wastewater service area as an offsite mitigation solution to prevent future flood hazards. The project deliverable was the Preliminary Engineering Report (PER) that documented mitigation solution to support FEMA hazard mitigation proposal.

Lift Station Renewal and Replacement, City of Houston; Houston, TX. Ms. Sharma served as the project engineer for evaluating options for Rehabilitation / Conversion / Replacement for lift stations. She performed overall condition assessment and hydraulic capacity evaluation of the lift station and associated sanitary sewers and forcemains to develop recommendations. She prepared Life cycle cost analysis for the alternatives to determine the most cost-effective recommendation.

Disinfection CT Study, City of Sugar Land; Sugar Land, TX. Ms. Sharma served as the staff Engineer responsible to prepare the CT study report and submission to TCEQ.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Lisbeth Nagrath, PE
Senior Engineer

Project Assignment:

Senior Project Engineer

Name of Firm with which associated:



Years' experience with this Firm:

6.5

Education: Degree(s)/Year/Specialization:

MS in Civil Engineering, University of New Orleans, 2007
 BID in Interior Design, Louisiana State University, 2000
 BA in Art History, University of Texas at Austin, 1997

Active registration: Year first registered/discipline:

2011, Civil Engineer, Louisiana

Other experience and qualifications relevant to the proposed Project:



Ms. Nagrath is a licensed Civil Engineer with over 20 years of professional experience that includes a range of planning, engineering and design, particularly related to civil and environmental engineering. She has worked on a variety of municipal infrastructure and facilities, including water distribution systems, wastewater collection systems, drainage systems, pump/booster stations and water/wastewater treatment plants. Additionally, Ms. Nagrath is experienced with environmental assessments, permitting and regulatory compliance matters, particularly in southeast Louisiana. Her experience includes multiple projects involving the Sewerage and Water Board of New Orleans (S&WB) and the City of New Orleans.

RELEVANT PROJECT EXPERIENCE

Water Line Replacement Program – Lakeview Neighborhood, Groups 1 and 2; New Orleans, LA. Engineering, design and construction services for water line improvements in two separate design and construction projects. Also includes street repair and restoration efforts, replacement of drainage and sewer systems in accordance with City, Federal DOT and other local agency standards/requirements. Approximately \$6M of water line construction will occur. Construction is complete in Group 1 and is pending for Group 2.

Water Line Replacement Program – 6 Areas throughout City; New Orleans, LA. Engineering, design and construction services in a sub-consultant role for water line improvements in six separate design and construction projects. Also includes street repair and restoration efforts, replacement of drainage and sewer systems in accordance with City, Federal DOT and other local agency requirements. \$6M to \$10M of water line construction will occur. Design and construction has been completed for one area; Design has been completed for four (4) other areas and design is ongoing in the remaining area. Construction is anticipated in 2017 and 2018.

TEC Professional Services Questionnaire

Nagrath, continued.

Other experience and qualifications relevant to the proposed Project:

Water Line Replacement Program –Lakewood, Navarre, and West End Neighborhood, Sewerage and Water Board of New Orleans, LA. Project engineer for water line improvements in three separate design and construction projects. Also includes street repair and restoration efforts, replacement of drainage and sewer systems in accordance with City, Federal DOT and other local agency standards/requirements. \$5.5M to \$7.5M of water line construction will occur. Construction is pending for Lakewood and Navarre while design is being finalized for West End.

Delta Aire Drive Infrastructure Improvements; Plaquemines Parish, LA. Served as Project Engineer for this effort to improve the infrastructure along this concrete street. Scope included improvements to the existing drainage system to increase capacity and minimize street flooding, installation of a new water line, repairs to the sewerage systems, and associated roadway reconstruction.

Water Quality Master Plan; New Orleans, LA. Project Engineer for assessment of the S&WB's Carrollton and Algiers Water Treatment Plants in order to determine the physical condition of the infrastructure at each plant. Based on the assessment, the current status and forecast of issues to be addressed was developed, as well as a prioritized listing of short- and long-term needs required at the plants to address reliability and redundancy.

Water Hammer Hazard Mitigation Project; New Orleans, LA. Project Engineer for efforts to mitigate water hammer events/effects on the East Bank by upgrading facilities at the S&WB's East Bank Water Treatment Plant and power supply infrastructure at the S&WB's power plant. Included improvements to pump stations, plant piping/valving/metering, new building to house VFDs, elevated storage tanks and remote bladder tank installations.

District B Miscellaneous Water Improvements; Shreveport, LA. Project Manager for detailed design in support of replacement of 4,000 linear feet of 8-inch potable water line for the City of Shreveport (COS). Responsibilities included field-confirmation of survey, coordination with existing utilities, design of new water line locations in plan and profile in accordance with COS standard specifications and details, and coordination with CAD support team.

Retrofit Power Plant Hazard Mitigation Grant Program (HMGP) Project; New Orleans, LA. Project Engineer for Trigon's efforts on this project, which included upgrades to allow the S&WB to produce power independently from the local energy provider and maintain reliable operations of the Carrollton Water Treatment Plant and other facilities such as sewer and drainage pump stations located throughout the City, therefore mitigating disruptions to the power system and the potable water supply service to the City. Project involved repairs and upgrades to critical facilities such as generators, fuel storage tanks, boilers, turbines and electrical instrumentation and controls. Trigon's involvement included design, engineering services, construction management and inspection for several of the nine contract packages, including the design-build project for S&WB power distribution feeders, hardening of fuel tank and delivery system, power plant generator retrofit, steam turbine generator load bank testing, and local electrical feeder installation. Ms. Nagrath served as Project Manager for the fuel tank and delivery system hardening project.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Erin Lyons-Villatoro, PE
Project Engineer

Project Assignment:

Project Engineer

Name of Firm with which associated:



Years' experience with this Firm:

4.5

Education: Degree(s)/Year/Specialization:

MS in Civil Engineering, Arizona State University, 2005
 BS in Agricultural Engineering, Texas A&M, 2003

Active registration: Year first registered/discipline:

2010, Civil Engineer, Texas

Other experience and qualifications relevant to the proposed Project:



Ms. Lyons-Villatoro is a Civil engineer with 15 years experience. She has been responsible for process design, mechanical design and civil engineering, collaborating with multidisciplinary teams on municipal infrastructure projects, including water treatment facilities, water transmission systems, sewer systems, and drainage systems. Ms. Lyons-Villatoro is also experienced in water system evaluation, chemical storage and delivery systems, low-pressure membrane systems, groundwater well design, water resources projects, and detailed project cost estimating.

RELEVANT PROJECT EXPERIENCE

Water Line Replacement Program, New Orleans, LA. Engineering, design and construction services in a sub-consultant role for water line improvements in six separate design and construction projects. Also includes street repair and restoration efforts, replacement of drainage and sewer systems in accordance with City, Federal DOT and other local agency requirements. \$11.5M to \$17.5M of water line construction will occur. Construction is anticipated to be complete between 2018 and 2019.

District B Miscellaneous Water Improvements, Shreveport, LA. Project Engineer for detailed design in support of replacement of 4,000 linear feet of 8-inch potable water line for the City of Shreveport (COS). Responsibilities included field-confirmation of survey, coordination with existing utilities, design of new water line locations in plan and profile in accordance with COS standard specifications and details, and coordination with CAD support team.

Multi-Chemical Delivery and Storage System Evaluation; Houston, TX. Evaluated existing chemical storage and delivery system at 350 MGD WTP and prepared preliminary engineering report assessing system compliance with regulatory requirements and condition of system components.

TEC Professional Services Questionnaire

Lyons-Villatoro, continued.

Other experience and qualifications relevant to the proposed Project:

Recycled Water Customer Onsite Conversion Project, Los Angeles, CA. Provided project management support and technical support for the Recycled Water Customer Onsite Conversion Project. This project supported the L.A. Department of Water and Power in achieving a water supply goal of 59,000 acre-feet per year of recycled water use by 2035 per the 2010 Urban Water Management Plan. Tasks included: analysis of recycled water retrofit, evaluation of water quality and treatment requirements, and engineering support to review design plans for nitrification treatment facilities.

Evaluation of Municipal Drinking Water Treatment System, San Gabriel, CA. Evaluated a 7,800 gallons per minute (gpm) municipal drinking water treatment system and prepared a report documenting the findings and recommendations for modifications and upgrades to the treatment processes. The performed elements of the final design to remove nitrate from groundwater. Work performed for the San Gabriel Water Company.

Low Pressure Membrane System Pre-Construction Procurement; Sugar Land, TX. Developed pre-construction procurement documents for low pressure membrane system water treatment plant (WTP) in conjunction with legal departments and vendors to provide fixed equipment price.

Dual Media Filter Rehabilitation; Texas City, TX. Designed replacement filter under drain system, filter media, and air scour system in dual media filter.

Water Transmission Pipeline Design; College Station, TX. Designed water transmission pipelines for Trinity River Authority. Pipeline designs included concrete, steel, and ductile iron alternatives and diameters up to 60-inch.

Recycled Water Customer Onsite Conversion Project, Los Angeles, CA. Provided project management support and technical support for the Recycled Water Customer Onsite Conversion Project. This project supported the L.A. Department of Water and Power in achieving a water supply goal of 59,000 acre-feet per year of recycled water use by 2035 per the 2010 Urban Water Management Plan. Tasks included: analysis of recycled water retrofit, evaluation of water quality and treatment requirements, and engineering support to review design plans for nitrification treatment facilities.

Groundwater Well Design; College Station, TX. Designed 3000 gpm groundwater well and ancillary facilities.

East Bank Wastewater Treatment Plant Bleach Disinfection System, New Orleans, LA. Project Engineer for design of a bleach disinfection system that will replace the existing gaseous chlorine injection system at the Sewerage & Water Board of New Orleans' 200 MG East Bank WWTP. The existing disinfection system used gaseous chlorine delivered via railway and stored onsite in the delivered tank cars. Recent changes in the ability to receive gaseous chlorine via railway created the need for another disinfection method to be available for use at the WWTP.

West Bank Wastewater Treatment Plant Piping & Valve Identification and Rehabilitation Master Plan, New Orleans, LA. Project Engineer for a physical evaluation and assessment of the WBWWTP, a 20 MGD trickling filter facility. This projects focused on creating an inventory of all the piping and valves, assessing the physical and operational condition of the assets, and then developing a master plan to replace and/or rehabilitate the assets to ensure long-term reliability and sustainability.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Barry Breaux, PE
Project Engineer

Project Assignment:

Engineering Support, Operations

Name of Firm with which associated:



Years' experience with this Firm:

5.5

Education: Degree(s)/Year/Specialization:

BS in Civil Engineering, Louisiana State University, 2017

Active registration: Year first registered/discipline:

2018, Professional Engineer, Louisiana

Other experience and qualifications relevant to the proposed Project:



Mr. Breaux is an environmental engineer with over 5 years of experience from research, internships and design competitions prior to his joining Trigon in 2017. He has worked on a variety of environmental laboratory, testing, sustainability, and design projects; a sampling of which include: BP Deep Water Horizon Oil Spill sampling, a Bioretention Bed at the New Orleans City Park for the Louisiana Department of Environmental Quality, Sustainability Projects in the Amazon Rainforest, and serving as Project Manager/Lead for a 2017 IEE/WERC International Design Competition team from LSU that designed, built and operated a Passive Solar Distillation system. He is a licensed Professional Engineer in the State of Louisiana, and a member of the Louisiana Water Environmental Association, the National Society of Collegiate Scholars, and Engineers Without Borders.

RELEVANT PROJECT EXPERIENCE

Engineers Road/Cazalard Road Hydrologic & Hydraulic Study and Drainage Improvements; Belle Chasse, LA. Provided field verification and design support services for improvements to multiple drainage canals and ditches, a culvert crossing of a major roadway, subsurface drainage, and evaluation and design to construct a new drainage pump station that discharges over a levee into the Intracoastal Waterway (GIWW). Also supporting environmental permitting efforts for the project.

Northeast Turtle Bay Marsh Creation & Critical Area Shoreline Protection Project; Lafitte, LA. Providing design and engineering support services for this coastal restoration project assigned as a task order under an IDIQ contract with the US Dept. of Agriculture-Natural Resources Conservation Service. The intent of the project is to protect the critical reaches of shoreline on the Northeast side of Turtle Bay and protect current channels from erosion and widening. The project involves marsh creation,

TEC Professional Services Questionnaire

Breaux, continued.

Other experience and qualifications relevant to the proposed Project:

shoreline protection utilizing borrow material from Turtle Bay, and channel liners to protect current channels from erosion and widening. numerous driveways and access roads into private property.

East and West Bank Wastewater Treatment Plants – Staff Extension Services; New Orleans, LA. Staff extension services to the Sewerage and Water Board of New Orleans to assist with capital improvement projects at the East Bank and West Bank Wastewater Treatment Plants (WWTPs). In support of these efforts, Trigon furnished a full-time on-site Engineer Intern for over one (1) year to provide engineering support and construction inspection services. Project responsibilities included: design input and review, construction management, inspection services, and coordination with WWTP operators during design and construction phases.

Buras Wastewater Treatment Plant Improvements; Buras, LA. Mr. Breaux provided support to the engineering team for an assessment of the Buras Wastewater Treatment Plant (WWTP) in Plaquemines Parish, LA. This assessment was intended to determine the necessary repairs, rehabilitation measures and/or process modifications required to improve operational conditions of the WWTP.

Hurricane Harvey Disaster Recovery for Wastewater Lift Stations; City of Houston, TX. Provided engineering support services related to detailed asset inventories, damage assessments, and documentation for 36 lift stations damaged during the Hurricane Harvey disaster. As the prime consultant, Trigon was responsible for overall project management and ensuring compliance with state and federal reimbursement guidelines. Trigon also served as a subconsultant providing similar services for 65 other lift stations throughout the City.

Hurricane Harvey Disaster Recovery for Wastewater Treatment Plants; City of Houston, TX. Provided engineering support services professional engineering services as a subconsultant related to Hurricane Harvey Disaster Recovery of multiple WWTPs, including the 69th Street WWTP, Sims North WWTP, Kingwood Central WWTP, and Clinton Park WWTP, with a range from the largest City WWTP to average and small WWTPs. Responsibilities included participating in multiple site visits at the WWTPs to evaluate pre-Hurricane Harvey conditions and assess damage due to Hurricane Harvey.

East Bank Wastewater Treatment Plant Bleach Disinfection System, New Orleans, LA. Engineering support for the design of a bleach disinfection system that will replace the existing gaseous chlorine injection system at the Sewerage & Water Board of New Orleans' 200 MG East Bank WWTP. The previous disinfection system used gaseous chlorine delivered via railway and stored onsite in the delivered tank cars. Changes in the ability to receive gaseous chlorine via railway created the need for another disinfection method to be available for use at the WWTP.

LSU Department of Environmental Quality; Baton Rouge, LA. While serving as an intern in the LSU Department of Environmental Quality under the direction of Dr. John Pardue, Mr. Breaux performed various laboratory tasks including: sample collection, sample analysis, DNA extraction and analysis of BP Deep Water Horizon oil spill samples, and database management. He also assisted in the design and construction of a bioretention bed for the New Orleans City Park and served as project lead for an international design competition team focusing on passive solar distillation.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Barrett Crook, PE, LEED AP
Structural Engineer

Project Assignment:

Structural Engineering

Name of Firm with which associated:**Years' experience with this Firm:**

3

Education: Degree(s)/Year/Specialization:

BS, Civil Engineering, Santa Clara University
BA, Business Administration, Santa Clara University
BA, Spanish, Santa Clara University

Active registration: Year first registered/discipline:

Registered Professional Engineer: CA, CT, FL, GA, HI, ID, IO, KS, LA, MA, MI, MS, NE, NV, NC, ND, OK, SC, VA, and WA

Leadership in Energy and Environment Design Accredited Professional (LEED AP)

Other experience and qualifications relevant to the proposed Project:

Mr. Crook has over 25 years of experience in engineering, planning, detailed design, construction inspection, and field operations. Throughout his career, Mr. Crook has served as Project Engineer for numerous structures, facilities, water, wastewater, and transportation projects with capital costs ranging from \$500,000 to \$41 million. His experience includes providing inspection services for active construction and natural disaster sites; structural engineering design, assessment, and drawings for public, industrial, commercial and residential projects throughout the United States; field engineering services, such as v-zone certifications and uplift/buoyancy calculations; cost estimating and budget tracking; and preparing reports and recommendations for mitigation and/or project improvements.

RELEVANT PROJECT EXPERIENCE

East Baton Rouge Pump Station 42; East Baton Rouge, LA. Project Structural Engineer responsible for the design of a large, buried, reinforced concrete pump station and above grade adjacent CMU electrical building.

Willamette River Water Treatment Plant; Wilsonville, OR. Mr. Crook led structural design, drawings prep (all in 3D) and specifications development for the facility containing a 100-foot deep, 48-foot diameter caisson, Actiflo clarification process, ozone contactors, filters, waste washwater basin, 4-million gallon clearwell, sludge thickener, 2-story sludge dewatering building and numerous buried vaults. Worked closely with geotechnical engineer to minimize costs associated with backfilling and with architects to obtain an "aesthetically pleasing" design for the public.

TEC Professional Services Questionnaire

Crook, continued.

Other experience and qualifications relevant to the proposed Project:

USAID, A-E Services for Dioxin Remediation at Bien Hoa Airbase Area; Bien Hoa, Vietnam. Principal Structural Engineer. Providing review and QA/QC services for this project to develop a Project Implementation Masterplan for engineering design, construction management implementation and related project support services for dioxin remediation at the Bien Hoa Airbase Area in Vietnam - the largest remaining hotspot of dioxin contamination in Vietnam. Recently supported completion of design efforts for Interim Measures #2, particularly related to the structural design of a Long-Term Storage Area facility (landfill) and multiple road projects throughout the airbase.

Orange County Disaster Recovery Grants Funds Management; Orange County, TX. Principal Structural Engineer for activities associated with federal and state recovery grant programs for the Orange County government, including all county-owned buildings and facilities (pump stations, treatment plants, roads, and drainage infrastructure) following Hurricane Harvey. Mr. Crook performed structural damage assessments on numerous County facilities and infrastructure. Assisted in scope and cost estimate development for project delivery. Supported development of corrective action plans for numerous County facilities and infrastructure.

Northeast Turtle Bay Marsh Creation & Critical Area Shoreline Protection Project, Jefferson Parish, LA. Principal Structural Engineer for this coastal restoration project being designed as a task order under an IDIQ contract with the US Dept. of Agriculture-Natural Resources Conservation Service. Intent of the project is to protect the critical reaches of shoreline on the Northeast side of Turtle Bay and protect current channels from erosion and widening. The project involves marsh creation, shoreline protection utilizing borrow material from Turtle Bay, and channel liners to protect current channels from erosion and widening.

Panama Canal Third Lock Expansion; Panama. As the Project Structural Engineer, Mr. Crook supervised the design of pipe supports and pump cages on the third set of locks.

West Sacramento Flood Control Project; West Sacramento, CA. As the Project Structural Engineer, Mr. Crook utilized the drawing and specification standards of the USACE, designed a double leaf, steel, mitre gate to span a set of railroad tracks; and coordinated work between the USACE, Caltrans and Union Pacific for the successful completion of this project.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Dennis Strecker, PE
Mechanical Engineer

Project Assignment:

Mechanical Engineering

Name of Firm with which associated:



Years' experience with this Firm:

6

Education: Degree(s)/Year/Specialization:

MS, Mechanical Engineering, Tulane University, 1979
BS, Mechanical Engineering, Tulane University, 1969

Active registration: Year first registered/discipline:

1974, Civil Engineer, Louisiana

Other experience and qualifications relevant to the proposed Project:



Mr. Strecker has over 40 years of experience in mechanical engineering for major hydraulic structures such as navigation locks, floodgates; gated outlet works for dams, pumping stations and other waterway facilities, including pneumatic and hydraulic systems, HVAC systems and plumbing systems. He has worked primarily for the USACE New Orleans District on major navigation and flood control projects. Served as Senior Project Manager for the USACE IHNC Flood protection project during which he reviewed A/E mechanical design submittals for compliance with contract requirements and USACE design criteria. Mr. Strecker has also designed operating equipment for several floodgates and performed independent technical reviews (ITR) on numerous pump station storm proofing modifications. Mr. Strecker has also prepared cost estimates, and mechanical portions of design memoranda.

RELEVANT PROJECT EXPERIENCE

Water Quality Master Plan; New Orleans, LA. Principal Mechanical Engineer for assessment of the S&WB's Carrollton and Algiers Water Treatment Plants to determine physical condition of the infrastructure at each plant. Based on the assessment, the current status and forecast of issues to be addressed was developed, as well as a prioritized listing of short- and long-term needs required at the plants to address reliability and redundancy.

TEC Professional Services Questionnaire

Strecker, continued.

Other experience and qualifications relevant to the proposed Project:

Floodgate Projects; Jefferson Parish, LA. Served as Mechanical Engineer for project for sector gates for Bayou Segnette and Company Canal.

IHNC, Seabrook, Carnarvan, Dupre, Segnette and Seller Gates, LA. Mr. Strecker worked on the behalf of the USACE New Orleans District as the embedded mechanical engineer reviewing and overseeing the design of mechanical and operational features for of the IHNC barrier complex including the GIWW sector and barge gates and the Bayou Beinviu gate. Also served as lead mechanical reviewer representing the USACE for the Seabrook Gate Complex. Tasked with resolving design and construction issues on both the Carnarvan and Bayou Dupre sector gates. He prepared preliminary machinery design for Empire flood gates alternatives report, and provided ITR support for several of Jefferson Parish drainage pump station modifications.

Hydraulic Gate Hoists, USACE New Orleans District, LA. Served as Mechanical Engineer for Project. Retrofitted 18 sluice gates built immediately after Hurricane Katrina and originally designed to be operated with a crane with hydraulic driven gate hoist operated from a central hydraulic power unit.

Sector Gate Machinery for Pointe Au Chene, LA. Served as Mechanical Engineer for project. Designed hydraulic machinery for a sector gated structure. Gate operation is with a high torque low speed Haggulands motor pinion driving a rack on the sector gate. Provided the design for the gate hinge and pintles using self-aligning spherical bearings approximately 20 inches in diameter.

Replacement Machinery for IHNC Lock, LA. Mr. Strecker served as Mechanical Engineer for USACE Project. Machinery design replaced Panama Canal Linkage used on the miter gate with direct acting hydraulic cylinder and hydraulic system.

Various Lock, Floodgate and Storm Water Pump Projects, LA. Served as Lead Mechanical Engineer for the USACE New Orleans District. Designed and prepared plans and specifications for modernizing locks and floodgate gates operating machinery in the New Orleans District for hydraulic structures including Calcasieu floodgate and Calcasieu, Bayou Boeuf, Berwick, Bayou Sorrel, and Freshwater Bayou locks. Designed replacement sluice gate machinery for Harvey and IHNC locks. He designed operating machinery for Davis Pond sluice gate which included direct operating cylinders and designed sector gate machinery for Harvey floodgate. On the Harvey floodgate, Mr. Strecker designed the floating self-adjusting bottom seal. The seal design was incorporated on the Gulf Intracoastal Water Way GIWW and the Western Closure sector gates.

Drainage Pump Station Storm Proofing; New Orleans, LA. Served as ITR Mechanical Engineer Reunion for project. Performed ITR on 10 drainage pump station storm proofing contracts. Contracts included adding dewatering sump pumps to stations, adding generators, ventilation, fuel storage and required plumbing modifications.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Wagner Enrique
Designer

Project Assignment:

CADD

Name of Firm with which associated:

Trigon

Years' experience with this Firm:

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Education: Degree(s)/Year/Specialization:

AAS, Computer Aided Design & Drafting, Delgado Community College, 1994

Active registration: Year first registered/discipline:

Other experience and qualifications relevant to the proposed Project:



Mr. Enrique has over 24 years of experience using AutoCAD and Microstation to develop detailed construction drawings, topographical profiles, related maps and specifications used in planning and construction of civil and structural engineering projects, including features related to water & wastewater infrastructure, flood control/protection, drainage, navigation, bridges and roadways. Besides acting in a designer role to support engineers in the preparation and/or review of drawings, sketches, maps, specifications, and other engineering data, he has also provided construction inspection services, ensuring that contract documents were adhered to during construction. Other construction-related support that he has provided includes general QA, compliance monitoring, quantity verification, documentation, CAD and working plans/drawings during construction.

RELEVANT PROJECT EXPERIENCE

FEMA-Funded Water Line Replacement Program, New Orleans, LA. Design services for FEMA-funded Water Line Replacement Program within five (5) different areas of the city. Construction is complete in one area, design is complete in three, and design is being finalized in the remaining area. Approximately \$12M to \$15M of construction is anticipated in these areas. Trigon is representing the owner for all work within these areas.

TEC Professional Services Questionnaire

Enrique, continued.

Other experience and qualifications relevant to the proposed Project:

Water Line Replacement Program – Lakeview Neighborhood, Groups 1 and 2; New Orleans, LA. Engineering, design and construction services for water line improvements in two separate design and construction projects. Also includes street repair and restoration efforts, replacement of drainage and sewer systems in accordance with City, Federal DOT and other local agency standards/requirements. Approximately \$6M of water line construction will occur. Construction is complete in Group 1 and is pending for Group 2.

Highway 11 Water Line Improvements; Buras, LA. Included design, bid support and construction phase services for installation of 2,000' of new 8" PVC water main to replace an old cast iron water main. Pedestrian improvements funded by a federal grant were implemented following the utility work. Various public facilities (e.g., library, auditorium, school and fire station), commercial developments and residential properties are being served by these improvements.

East 70th Street (Creswell Road to E. Ridge Drive) Water Main Relocation; Shreveport, LA. Design of improvements to transfer all existing water connection and private metered service lines from an existing 3,500 LF 8-inch water main on East 70th Street to an existing parallel 20-inch water main. The existing 8-inch main is being abandoned in place. Also included replacement of approximately 2,000 LF of 20-inch water main by excavation and trenchless installation. The utility relocation design was performed in coordination with a LA DOTD roadway project to widen E. 70th Street (SP102-02-0031).

FY 12 Sewer Pump Station Rehabilitation; Slidell, LA. Design of rehabilitation/replacement measures to six (6) sewage pumping stations. Five were converted from suction-lift to submersible stations, and an existing submersible station was rehabilitated. Design includes hazard mitigation items such as elevating electrical/controls above flood elevation. This work was federal grant funded.

East Bank WWTP Effluent Pump Station Improvements; New Orleans, LA. CAD designs for improvements to Effluent Pump Station Modifications at the Sewerage & Water Board's 200 MGD East Bank Wastewater Treatment Plant (EBWWTP).

South Shore Basin Sewer Rehabilitation Design; New Orleans, LA. Project includes design of multiple projects for the rehabilitation of sewer facilities in the South Shore Basin of the City, including manholes, small and large-diameter gravity sewers and service laterals via various trenchless and traditional excavated methods. Approximately \$15M in sewer rehab construction will result.

Engineers Road/Cazalard Road HMGP Drainage Improvements; Belle Chasse, LA. Following final approval from FEMA and GOHSEP of the Hydrologic and Hydraulic Study report, Mr. Enrique is supporting the design of drainage improvements in the vicinity of Engineers Rd and Cazalard Rd. Generally includes replacing subsurface drainage, improving multiple drainage canals and ditches, culvert crossings of a major roadway and railroads, and construction of a new drainage pump station and influent channel to replace a temporary pump currently being used by the Parish.

Hoey's Drainage Canal Improvements, Jefferson Parish, LA. CADD Designer/Construction Inspector responsible for the preparation of plans and specifications for improvements to the Hoey's Canal, a major drainage canal in Jefferson Parish that connects to the 17th Street Canal. Primary improvements consisted of paving the canal. He also performed inspection services during construction.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Gary Angelo, PE
Supervising Engineer

Project Assignment:

Construction Management and Inspection

Name of Firm with which associated:The logo for Trigon, featuring the word "Trigon" in a blue serif font with a small orange triangle above the letter 'i'.**Years' experience with this Firm:**

9

Education: Degree(s)/Year/Specialization:

BS in Civil Engineering, Louisiana State University, 1973

Active registration: Year first registered/discipline:

1978, Civil Engineer, LA

Other experience and qualifications relevant to the proposed Project:

Mr. Angelo has over 45 years of experience, particularly focused on construction and maintenance activities for infrastructure and roadways. He previously worked for over 30 years with the Louisiana Department of Transportation and Development (DOTD) in a variety of roles. Recently, Mr. Angelo has worked on various municipal infrastructure projects, including water and wastewater utilities, pump/lift stations and treatment plants. He provides constructability reviews for Trigon's designs and leads Construction Engineering & Inspection (CE&I) services.

RELEVANT PROJECT EXPERIENCE

Water and Sewer Warehouse Facility; St. Bernard Parish, LA. Performed review of conceptual design plans for this Department of Public Works warehouse facility.

Hurricane Katrina Utility Replacement Projects; Bay St. Louis, MS. As Resident Project Representative, managed the construction of multiple projects including complete replacement of roads, sidewalks, sewer, water and gas systems that were destroyed by Hurricane Katrina.

Delta Aire Drive Roadway & Infrastructure Improvements; Buras, LA. Project Engineer during construction of this project, which included assessing the condition of the roadway and the water, sewer and drainage systems along a 1,240-foot residential concrete street. Also included abandoning an existing water main and installing a new 8-inch main with valves and hydrants. Significant concrete restoration was required, including tie-in of more than 40 driveways.

TEC Professional Services Questionnaire

Angelo, continued.

Other experience and qualifications relevant to the proposed Project:

Louis Morel Lane Roadway & Infrastructure Improvements; Buras, LA. Project Engineer during construction for this project, which included assessment design, bid support and construction phase services for rehabilitating a portion and reconstructing a portion of a 1,300-foot residential asphalt street. Also included re-designing/improving drainage capacity along the street by installing new catch basins and culverts and re-shaping/relocating a drainage ditch along the street. A new outlet for the storm water was installed to discharge to a large drainage canal at the back of the street. Project also included significant water system improvements with new water mains, valves and hydrants.

Damage Assessments of Water and Wastewater Treatment Plants; St. Bernard Parish, LA. Led a team evaluating a damaged water treatment plant and multiple wastewater treatment plant facilities in St. Bernard Parish as a result of Hurricane Katrina. The assessment involved field review and documentation of damages to various facilities. The assessment included evaluation of the damages, preparation of estimated repair costs and alternative cost comparisons for the consolidation of the devastated wastewater treatment infrastructure.

Braithwaite WWTP and Lift Station Improvements; Plaquemines Parish, LA. Construction services for replacing an existing WWTP and associated lift stations damaged by Hurricane Katrina. Existing influent and effluent piping was rehabilitated. Various electrical, water supply and general site improvements were included. Power supply and control improvements for associated submersible pump stations were also included.

Damage Assessment of Drainage System; Jefferson Parish, LA. Led team evaluating damaged drainage system facilities on the East and West Banks of Jefferson Parish as a result of Hurricane Katrina. Assessment involved field review and documentation of damages to various facilities.

Louis Armstrong New Orleans International Airport; New Orleans, LA. Project Manager and NOAB authorized representative for multiple projects, included design management and oversight of various consultant firms in the design and preparation of bid documents for construction advertisement and construction management services for the Louis Armstrong New Orleans International Airport (LANOIA) and the New Orleans Aviation Board (NOAB).

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Paul Fleming
Construction Inspector

Project Assignment:

Construction Management and Inspection

Name of Firm with which associated:

Trigon

Years' experience with this Firm:

6

Education: Degree(s)/Year/Specialization:

Delgado Community College, General Studies
University of New Orleans, Environmental Engineering

Active registration: Year first registered/discipline:

Other experience and qualifications relevant to the proposed Project:

Mr. Fleming has 24 years of experience in the construction industry in the New Orleans metropolitan area for multiple water and wastewater projects, including construction/contracting, contractor oversight and resident inspection/quality assurance. He has significant experience with development and public infrastructure projects, including many involving water, sewerage and drainage infrastructure and facilities. Mr. Fleming was also previously in the US Army for five years, during which he was selected for the Air Borne Ranger Battalion.

RELEVANT PROJECT EXPERIENCE

Water Line Replacement Program (WLRP); New Orleans, LA. In support of Trigon's design work under the S&WB's FEMA-funded WLRP, Mr. Fleming performed field reconnaissance efforts in multiple neighborhoods assigned to Trigon to verify existing, and collect additional, information that was incorporated into the design documents. Worked closely with Trigon's project engineers and project manager to effectively complete the tasks assigned to him.

Hazard Mitigation Grant Program (HMGP) Emergency Fuel Storage System at the Main Water Purification Plant Power Complex, Sewerage and Water Board of New Orleans, LA. Served the installation of two (2) 522,000 gallon above-ground diesel storage tanks and containment area; delivery system comprised of one (1) 15,000 gallon day tank, piping, and valves; ancillary equipment for fuel polishing, fire suppression, and oil-water separation; associated electrical, mechanical, and controls systems; and selective demolition of existing system.

TEC Professional Services Questionnaire

Fleming, continued.

Other experience and qualifications relevant to the proposed Project:

Hazard Mitigation Wind Retrofit of Parish-Owned Facilities, Plaquemines Parish, LA. Mr. Fleming provided field inspection efforts on this project to document the status of repairs/improvements to 30 Parish-owned buildings/facilities being hardened to withstand hurricane force winds.

Drainage System Engineering Analysis; New Orleans, LA. Field Monitor responsible for providing written reports of field activities, making measurements to determine footage of cleaning and CCTV performed, communicating with third-party cleaning and CCTV Crews, and providing reports to engineer for urgent or immediate action items.

Sewer Pump Stations Testing, New Orleans, LA. Mr. Fleming was part of a team that performed field testing for a total of 75 sewage pumping stations throughout New Orleans, the results of which were used to develop pump curves for each station for use in updating and re-calibrating an existing hydraulic model. He coordinated with Sewerage and Water Board Operations staff, followed field safety procedures, operated testing equipment and recorded testing results for use in generating the pump curves.

Sewer System Evaluation Rehabilitation Program (SSERP); New Orleans, LA. As Resident Field Inspector for multiple wastewater projects, supervised daily construction activities, ensuring compliance with approved traffic plans. Reviewed, pre-construction videotapes prior to the start of construction, reviewed pre/post CCTV construction videos, verified accuracy of repair locations and approved material for use in construction, verified delivery of public notices to resident in a timely manner prior to the start of construction, communicated with customers to answer questions and resolve complaints, enforced traffic plans and approved contractor payments, ensured that contractor's work did not adversely affect resident and/or residents property.

Inspection of Various Public Works Construction Projects, LA. As Lead Inspector, supervised daily construction activities, ensured compliance with approved traffic plans, and reviewed pre-construction videotapes prior to the start of construction. Verified accuracy of repair locations and approved material for use in construction, verified delivery of public notices to residents in a timely manner prior to the start of construction, communicated with residents to answer questions and resolve complaints. Enforced traffic plans and approved contractor payments. Ensured that contractors' work did not adversely affect residents and/or residents' property. Provided final restoration damage report/estimate for each assigned repair site.

Fleming Equipment and Construction; New Orleans, LA. *Supervisor:* Primary responsibilities consisted of but were not limited to: new housing construction, drainage ditches, demolition and replacement of driveways, carpentry work and operating heavy machinery. Oversaw daily operations and insured work crews were operating efficiently in all aspects of company's duties.

Various Construction Projects; New Orleans, LA. Estimated all jobs performed all work to complete to customer satisfaction. Primary duties included but not limited to general contracting, framing, sheetrock, painting, plumbing, electrical and cement work. Also included heavy equipment operations such as land clearing, primitive roads, and bush hogging.

L. Work by Firm or Joint-Venture members which best illustrates current qualifications relevant to this Project. Please include any and all work performed for Jefferson Parish. Please attach additional pages if necessary.

PROJECT NO. 1

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>Water Line Replacement Program – Lakeview Neighborhoods, Groups 1 and 2 – New Orleans, LA</p> <p>Sewerage and Water Board of New Orleans Joe Becker, PE – [fmr] Gen'l Superintendent</p> 	<p>Trigon is serving as the prime consultant for engineering, design and construction phase services for water line improvements in the Lakeview neighborhood of the City. The improvements in this area are grouped in two (2) separate design and construction projects (Groups 1 and 2). The purpose of this project is to replace water lines on the East Bank of the City damaged as a result of floodwaters from Hurricane Katrina. Eligible water lines for replacement are determined based upon a FEMA and S&WB-developed pipe evaluation criteria. The resulting water line replacements have to be coordinated with the City of New Orleans Department of Public Works' Street Restoration Program; the Department of Transportation's Submerged Roads Program; ongoing S&WB projects for water point repairs, sewer repairs and replacement; and other relevant stakeholders' projects. Approximately \$5M of water line construction is anticipated within Lakeview Groups 1 and 2. Construction for Group 1 was completed in early 2014, and construction is pending for Group 2. Trigon is acting as a representative of the S&WB on projects located within the assigned areas.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
Ongoing	\$1,400k	\$1,400k

PROJECT NO. 2

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>Highway 11 Water Line Improvements - Buras, LA</p> <p>Plaquemines Parish Government Ken Dugas, PE – Chief Engineer 504.297.5346</p>	<p>Trigon was the prime engineer for these improvements, providing engineering, design, bidding and construction phase services. Highway 11 was the original highway into and out of southern Plaquemines Parish. It serves as an alternate route for Highway 23 and provides access to numerous residential neighborhoods, commercial properties and public/government facilities. An old 12" cast iron water main on the south side of Highway 11, historically served as the primary water feed for the area. This 12" main was in poor condition and was subject to breaks/leaks over the years. Within the past decade a newer 12" PVC water main was installed on the north side of Highway 11 as a secondary feed. This project included the installation of approximately 2,000 linear feet of new 8" PVC water main on the south side of Highway 11, adjacent to the old 12" cast iron main; the 12" main was abandoned after the new water main was put in service. Following installation of the new water main, various pedestrian improvements funded by a federal grant were implemented. The improvements are intended to complement and serve several public facilities in the area such as a library, auditorium, school and fire station. Trigon coordinated with the Parish and their private contractor that operates and maintains the water system in this area.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2012 (Actual)	\$35k	\$35k

L. Work by Firm or Joint-Venture members which best illustrates current qualifications relevant to this Project. Please include any and all work performed for Jefferson Parish. Please attach additional pages if necessary.

PROJECT NO. 3

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>East 70th Street Water Main Relocation Design – Shreveport, LA</p> <p>City of Shreveport Barbara Featherston, PE – Director 318.673.7660</p>	<p>Trigon served as the prime engineer on this project, which consisted of the design of improvements to transfer all existing water pipeline connections, laterals and private metered service lines from an existing 8-inch water main, on East 70th Street from Creswell Road to East Ridge Drive, to an existing parallel 20-inch water main that is remaining in place. Approximately 1,500 feet of the 20-inch main was also replaced/relocated, and portions of it were installed by horizontal directional drilling. The existing 8-inch water main was abandoned in place upon completion of all potable pipeline transfers. This utility relocation project was performed in strict coordination with the Louisiana Department of Transportation and Development's (DOTD) roadway project, (SP#102-02-0031) Route LA 511, Line Avenue to Fern Avenue Roadway Widening. The project was designed and constructed in accordance with both City of Shreveport and DOTD standards. Construction was completed in 2013.</p>	
Completion Date (Actual or estimated):	Entire Project:	Work for which Firm was Responsible:
2013 (Actual)	\$400k	\$400k

PROJECT NO. 4

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>Water Hammer Hazard Mitigation Grant Program Project - New Orleans, LA</p> <p>Sewerage and Water Board of New Orleans Joe Becker, PE – [fmr] General Superintendent 504.666.0282</p> 	<p>Trigon is a major sub-consultant for engineering and design efforts to mitigate water hammer events/effects on the East Bank water distribution system by upgrading facilities at the Sewerage and Water Board of New Orleans' (S&WB) Carrollton Water Treatment Plant (WTP) complex as well as power supply infrastructure at the S&WB's power plant, co-located with the WTP. Primary improvements are estimated at \$70M and include modifications to finished water pump stations, plant piping/valves/meters, a new building to house Variable Frequency Drives (VFDs) and other electrical and controls equipment, power supply modifications, two (2) new elevated storage tanks, and two (2) remote-site bladder tank installations. Trigon staff supported the identification of alternatives to mitigate issues through the review and verification of an existing hydraulic model for the water distribution system. The model was updated to current standards, and additional details were added to increase the model's predictive accuracy. It was also used as the basis for a surge analysis to reduce the likelihood of water hammer events occurring that could damage pumping and piping facilities. Trigon is leading the design efforts for two (2) of three (3) construction packages and is providing design support on the third construction package. As this project is funded by FEMA's Hazard Mitigation Grant Program (HMGP), close coordination has been required with FEMA representatives throughout the project to make key design decisions and prepare cost estimates.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
Ongoing	\$70M	\$20M

L. Work by Firm or Joint-Venture members which best illustrates current qualifications relevant to this Project. Please include any and all work performed for Jefferson Parish. Please attach additional pages if necessary.

PROJECT NO. 5

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>Water Line Replacement Program – Lakewood, Navarre and West End Neighborhood - New Orleans, LA</p> <p>Sewerage and Water Board of New Orleans Joe Becker, PE – [fmr] Gen'l Superintendent 504.666.0282</p>	<p>Trigon was selected as a prime consultant to provide engineering, design and construction phase services for the Sewerage and Water Board of New Orleans' Water Line Replacement Program in the Lakewood, Navarre and West End neighborhoods. The purpose of this program is to replace water lines on the East Bank of the City damaged as a result of floodwaters from Hurricane Katrina. Eligible water lines for replacement are determined based upon a FEMA and S&WB-developed pipe evaluation criteria. The resulting water line replacements have to be coordinated with the City of New Orleans Department of Public Works' Recovery Roads Program; the Department of Transportation's Submerged Roads/Paths to Progress Program; ongoing S&WB projects for water point repairs, sewer repairs and replacement; and other relevant stakeholders' projects. In some cases, design also includes street repair and restoration efforts, replacement of drainage and sewer systems in accordance with City, Federal DOT and S&WB standards. During construction of the improvements designed within these three (3) neighborhoods, approximately \$5.5M to \$7.5M of water line construction is anticipated. Trigon is also acting as a representative of the S&WB on other City projects located within the assigned areas.</p>	
<p>Completion Date (Actual or estimated):</p>	<p>Estimated Cost:</p>	
<p>Ongoing</p>	<p>Entire Project:</p> <p>\$7M</p>	<p>Work for which Firm was Responsible:</p> <p>\$7M</p>

PROJECT NO. 6

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>Water Quality Master Plan – New Orleans, LA</p> <p>Sewerage and Water Board of New Orleans Joe Becker, PE – [fmr] General Superintendent 504.666.0282</p>	<p>Trigon was a major sub-consultant (with 35% of the project) for this project that involved both of the Sewerage and Water Board of New Orleans' (S&WB) major water treatment plants – the Carrollton Water Treatment Plant (WTP) on the East Bank of the Mississippi River as well as the Algiers WTP on the West Bank. The project generally consisted of performing an assessment of both the Carrollton WTP and the Algiers WTP to determine physical, operational and process conditions of all infrastructure at the plants. Based on the assessments, the current status was documented and a forecast of issues to be addressed was developed, including a prioritized list of short- and long-term needs required to address reliability and redundancy. Trigon staff served in roles of technical assessors (for process, mechanical and structural items) during the field assessments and developed rehabilitation recommendations and associated cost estimates and summary reports. This formed the basis for the S&WB to develop short- and long-term capital improvement programs. The field assessments were completed in Fall 2014, and the rehabilitation recommendations and associated cost estimates were finalized in early 2015.</p>	
<p>Completion Date (Actual or estimated):</p>	<p>Estimated Cost:</p>	
<p>2015 (Actual)</p>	<p>Entire Project:</p> <p>\$348k</p>	<p>Work for which Firm was Responsible:</p> <p>\$122k</p>

L. Work by Firm or Joint-Venture members which best illustrates current qualifications relevant to this Project. Please include any and all work performed for Jefferson Parish. Please attach additional pages if necessary.

PROJECT NO. 7

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>1. Water Line Replacement Program – 6 Areas – New Orleans, LA</p> <p>Sewerage and Water Board of New Orleans Joe Becker, PE – [fmr] Gen'l Superintendent 504.666.0282</p>	<p>Trigon is serving as a subconsultant for engineering, design and construction phase services for water line improvements in the neighborhoods of Read Blvd. East, Read Blvd. West, Village de Lest, Bayou St. John, Fairgrounds and St. Bernard. The purpose of these efforts is to replace water lines on the East Bank of the City damaged as a result of floodwaters from Hurricane Katrina. Eligible water lines for replacement are determined based upon a FEMA and S&WB-developed pipe evaluation criteria. The resulting water line replacements have to be coordinated with the City of New Orleans Department of Public Works' Street Restoration Program; the Department of Transportation's Submerged Roads Program; ongoing S&WB projects for water point repairs, sewer repairs and replacement; and other relevant stakeholders' projects. In some cases, design also includes street repair and restoration efforts, replacement of drainage and sewer systems in accordance with City, Federal DOT and S&WB standards. Approximately \$4M to \$6M of water line construction is anticipated within these six (6) neighborhoods. Design is complete for five (5) of these six (6) areas.</p>	
<p>Completion Date (Actual or estimated):</p>	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
Ongoing	\$6M	\$2.5M

PROJECT NO. 8

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>District B Miscellaneous Water Improvements – Shreveport, LA</p> <p>City of Shreveport Brandon Aillet, PE – Operations Manager 318.716.6130</p>	<p>Trigon was a major subconsultant and provided engineering design services in support of a Master Services Agreement covering water improvement projects for the City of Shreveport (COS), specifically, for three (3) waterline replacement locations totaling approximately 4,000 linear feet of potable waterlines in the District B area of Shreveport. Trigon coordinated efforts with the prime consultant to ensure the design approach and execution were in line with multiple waterline replacement projects performed by several engineering firms. Design of water line replacements generally included: 8-inch PVC water main replacements with installation by open cut and jack and bore, associated valves, fire hydrants, fittings, appurtenances, removal, and restoration; removal and abandonment of existing water mains and associated fittings, appurtenances, removal, and restoration, all associated work complete and functional; water service restorations and associated service lines, water meter installations, and meter boxes. Phases consisted of 60, 90, and 100 percent design. Opinion of probable construction costs (OPCCs) were provided at each phase. Trigon's responsibilities included field-confirmation of survey, coordination with existing utilities, design of new water line locations in plan and profile in accordance with COS standard specifications and details, development of OPCCs, and CAD design.</p>	
<p>Completion Date (Actual or estimated):</p>	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2018 (Actual)	\$1M	\$77k

L. Work by Firm or Joint-Venture members which best illustrates current qualifications relevant to this Project. Please include any and all work performed for Jefferson Parish. Please attach additional pages if necessary.

PROJECT NO. 9

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>Infrastructure Needs Program, Phase II (INPII), Water Projects – West Bank, Palestine</p> <p>USAID West Bank/Gaza Mission Anan Masri, COR Office of Water and Infrastructure amasri@usaid.gov</p> 	<p>Trigon was a major subcontractor on the INP II and provided services for a range of water-related projects totaling approximately \$92M in constructed value, such as wells, booster stations, ground and elevated storage tanks, pipelines, distribution systems, flow monitoring and SCADA improvements. Trigon provided planning, engineering and design through construction phase services and Operations and Maintenance (O&M) activities. Representative projects include: <u>Al Jaba' – Nuba Main Transmission Pipeline</u> - Project consisted of installing a new 11.5 km long transmission pipeline to benefit approx. 60,000 people in the Hebron Governorate. Trigon was presented with a 2014 Project Achievement Award from the Construction Management Association of America for this project. <u>Dura Cluster Water Storage and Distribution System</u> - Project included construction of two 500 cubic meter elevated water storage tanks, one 3000 cubic meter ground storage tank, 11.2 km of transmission pipeline and over 85km of water distribution lines in multiple towns/villages. <u>Well Flow Monitoring System</u>: A first-of-its-kind in the West Bank, this \$4.9M project consisted of providing a highly computerized monitoring system for 40 water production wells, 3 booster stations and 3 reservoirs scattered throughout the West Bank. The system transmits information via a telecommunications system installed as part of this project to a central control room located at the West Bank Water Department (WBWD) offices in Ramallah.</p>	
<p>Completion Date (Actual or estimated):</p>	<p>Estimated Cost:</p>	
<p>2018 (Actual)</p>	<p>Entire Project: \$100M</p>	<p>Work for which Firm was Responsible: \$50M</p>

PROJECT NO. 10

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>Delta Aire Drive Infrastructure Improvements - Buras, LA</p> <p>Plaquemines Parish Government Ken Dugas, PE Chief Engineer 504-297-5346</p>	<p>Trigon was the prime engineer for this project and provided engineering, design, bidding and construction phase services. Delta Aire Drive is an approximately 1,240' concrete street in a densely populated residential area in Buras, LA between Highway 11 and Highway 23. Approximately 40 homes are located along this street. The project generally included assessing the condition of the roadway and the water, sewer and drainage systems in the area. With a lack of existing documentation and maps, Trigon researched the infrastructure in the area and performed field investigations to map out the water, sewer and drainage systems. Based on the investigations, improvements to the sewer, water and drainage systems were identified and presented to the Parish. Water system improvements included installing a new 8" water main with valves and fire hydrants and abandoning an old 4" water main in place. Significant concrete restoration was required as part of this effort, including the tie-in and/or replacement of more than 40 driveways. Trigon coordinated with the Parish and their private contractor that operates and maintains the water system in the area to locate an existing 12" water main the new line connected to.</p>	
<p>Completion Date (Actual or estimated):</p>	<p>Estimated Cost:</p>	
<p>2012 (Actual)</p>	<p>Entire Project: \$42k</p>	<p>Work for which Firm was Responsible: \$42k</p>

M. List all prior and/or on-going litigation between Firm and Jefferson Parish. Please attach additional pages if necessary.

Parties:		Status/Result of Case:
Plaintiff:	Defendant:	
1. <i>Trigon has no active or pending litigation at the present time, and our principals and staff have never been involved in litigation regarding our professional services.</i>		
2.		
3.		
4.		

N. Use this space to provide any additional information or description of resources supporting Firm's qualifications for the proposed project.

Trigon Associates, LLC (Trigon) is pleased to submit this Statement of Qualifications (SOQ) to Jefferson Parish (Parish) in response to your Request for Qualifications to Provide Routine Engineering Services for Water Projects in Jefferson Parish (SOQ 22-013, Resolution No. 138809).

Trigon offers Jefferson Parish the full range of services required to successfully execute this project and our staff has an extensive amount of directly applicable experience.

1. BACKGROUND AND EXPERIENCE OF THE FIRM



Trigon is a local woman-owned small business that is a State-certified Disadvantaged Business Enterprise (DBE), which offers engineering, consulting and management services. **Trigon's** principals have over 125 years of combined experience covering a wide range of public infrastructure, utilities and facility work, including **water, water resources, sewer, coastal restoration, drainage/storm water, transportation systems, buildings and facilities, general civil**

and structural engineering, and site development. This experience spans the full lifecycle of projects, from planning through design and construction, with significant experience in the management of diverse teams of consultants and contractors to successfully complete projects and programs of all sizes under budget and on time.

Trigon's principals and staff include:

- ▲ Engineers of all disciplines registered in Louisiana, Texas, Mississippi, Alabama, Arkansas, California, Florida, New York, Oklahoma, Virginia, and the District of Columbia
- ▲ Certified Project Management Professional and Program Management Professional with the Project Management Institute
- ▲ A former Jefferson Parish Sewerage Dept. Capital Improvements Program Manager, Assistant Director and Acting Director
- ▲ Former program and project managers, design and construction managers and engineers for multiple capital improvement programs

N. Use this space to provide any additional information or description of resources supporting Firm's qualifications for the proposed project.

Trigon's staff have been involved in numerous projects that required the knowledge and skills necessary for execution of water projects similar to those undertaken by the Parish, resulting in a strong team that has experience executing work of a very similar nature to what may be required. A few of our key qualifications are as follows:

2. RELATED EXPERIENCE OF TEAM

As shown in the example projects in Section L, as well as the resumes of our proposed project staff in Section K, our team has extensive and directly applicable experience and technical competence to successfully complete any work under this project. Our experience encompasses a wide range of services, including planning, hydraulic modeling, engineering, design, project and program management, construction management, permitting, controls, grant management, disaster recovery and general administration.

Areas of focus include:

- ▲ Water (master planning, CIP development, treatment, pump/booster stations, distribution systems, storage tanks/reservoirs, condition assessment)
- ▲ Wastewater (master planning, CIP development, sewer system evaluation studies, treatment, pump stations, collection/transmission systems, condition assessment, trenchless rehabilitation technologies)
- ▲ Drainage (master planning, hydraulic modeling, CIP development, pump stations, collection systems)
- ▲ Disaster Recovery (project worksheet development, version management, appeal preparation and tracking, hazard mitigation planning, general FEMA coordination)
- ▲ Stormwater (permitting, pollution prevention, water quality)
- ▲ Coastal (planning, restoration design, environmental assessments)
- ▲ Transportation (streets, streetscapes)

Examples of previous projects our members/staff have been involved with include but are not limited to:

- ▲ Water Distribution System Master Service Agreement, Shreveport, LA
- ▲ Water Distribution Modeling, Jefferson Parish, LA
- ▲ Water Asset Management Plan (Master Plan), Jefferson Parish, LA
- ▲ Storm Water Pollution Prevention Plans and Spill Prevention, Control and Countermeasures, Jefferson Parish, LA
- ▲ Cleary Avenue at Cypress Street Infrastructure Improvements, Jefferson Parish, LA
- ▲ NPDES Storm Water Permitting, Jefferson Parish, LA
- ▲ Design of Water Plant Safe Houses, Jefferson Parish, LA
- ▲ Water Quality Master Plan, New Orleans, LA
- ▲ Water Hammer Hazard Mitigation Grant Program Project, New Orleans, LA
- ▲ Waterline Replacement Program –Lakewood, Navarre, and West End Neighborhoods, New Orleans, LA
- ▲ Water Line Replacement Program – Lakeview Neighborhoods, Groups 1 and 2, New Orleans, LA
- ▲ Water Line Replacement Program – 6 Areas, New Orleans, LA
- ▲ Highway 11 Water Line Improvements, Buras, LA
- ▲ Water Distribution System Assessment and Capital Improvement Plan (Master Plan), New Orleans, LA
- ▲ Post-Katrina Water Distribution System Assessment/Rehabilitation, New Orleans, LA
- ▲ Clean Water Atlanta (SSO/CSO) Program, Atlanta, GA
- ▲ Dura Water System Improvements, West Bank, Palestine



N. Use this space to provide any additional information or description of resources supporting Firm's qualifications for the proposed project.

- ▲ Sewer Pump Station Inspections, St. Bernard Parish, LA
- ▲ Sewerage System Hydraulic Model, St. Bernard Parish, LA
- ▲ Barriere Road Retention Pond and Drainage Pump Station Improvements, Plaquemines Parish, LA
- ▲ Sewerage Capital Improvement Program, Jefferson Parish, LA
- ▲ Sewer System Evaluation and Rehabilitation Program, New Orleans, LA
- ▲ Levee, Floodwall and Drainage Project/Construction Management, New Orleans, LA
- ▲ Drainage Master Plan, New Orleans, LA
- ▲ East Bank Sewage Treatment Plant Evaluation, New Orleans, LA
- ▲ Land Acquisition, Regulatory Compliance, Permitting, Grant Administration, Jefferson Parish, LA
- ▲ FY 08/09 Sewer Pump Station Rehabilitation, Slidell, LA
- ▲ Pump Station Control Panel Replacement, Slidell, LA
- ▲ Northshore Mall Area Pump Station and Force Main Improvements, Slidell, LA
- ▲ Post-Katrina Rehabilitation of Sewage Collection System, Slidell, LA
- ▲ Post-Katrina Rehabilitation of Storm Drainage System, Slidell, LA
- ▲ Post-Katrina Emergency Debris Cleanup, New Orleans, LA
- ▲ Post-Katrina Emergency Storm Drain Cleaning, New Orleans, LA
- ▲ Corrective Action Plan for East Bank Sewerage System (Master Plan), New Orleans, LA
- ▲ Streets Program/Construction Management, New Orleans, LA
- ▲ Emergency Sewer Pump Station Design, New Orleans, LA
- ▲ Wind Retrofit of Parish-Owned Facilities, Plaquemines Parish, LA
- ▲ Emergency Sewer System Assessment Phase I and II, New Orleans, LA
- ▲ Design and Construction Management Services for World's Fair, New Orleans, LA
- ▲ Environmental Investigations/Soil Sampling for USACE, New Orleans, LA
- ▲ Comprehensive Utilities Hardening, Naval Air Station, Belle Chasse, LA
- ▲ Sanitary Sewer Overflow Control Program, St. Bernard Parish, LA



3. LOCAL PRESENCE AND KNOWLEDGE



Trigon is based in New Orleans, and our corporate office is located on Poydras Street in the CBD—just a short drive from Jefferson Parish. Any resulting work from this contract that **Trigon** is involved with would be executed from here.

Additionally, all of the managing members of **Trigon** live within the New Orleans metropolitan area and have significant prior experience working with the Parish on public works and infrastructure projects. Our principals and staff are very familiar with the local, state and federal standards and guidelines for performing environmental, design and construction in the area, particularly to public infrastructure.

Having lived here for many years, **Trigon's** principals and staff are very knowledgeable of the region and local conditions that could impact these projects.

N. Use this space to provide any additional information or description of resources supporting Firm's qualifications for the proposed project.

4. LITIGATION STATEMENT

Trigon has no active or pending litigation at the present time, and our principals and staff have never been involved in litigation regarding our professional services.

5. DBE PARTICIPATION



Trigon is certified as a Disadvantaged Business Enterprise (DBE) under the State of Louisiana's Unified Certification Program (UCP).

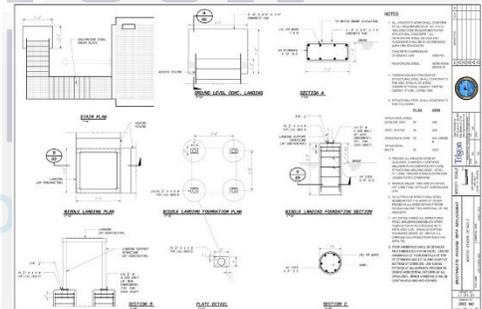
Additionally, **Trigon** is certified under other state and local DBE programs such as those utilized by both the City and Sewerage and Water Board of New Orleans. As such, any resulting work awarded to **Trigon** would be a 100% DBE contract.

6. PRODUCTION CAPABILITIES

Trigon utilizes the latest industry standard production software packages to efficiently create and coordinate design documents among multiple platforms. This includes such items as Autodesk products (e.g. AutoCAD, AutoCAD Civil 3D), Bentley products (e.g., MicroStation, ProjectWise) and ESRI products (e.g., ArcGIS).

Our staff is skilled in the use of these various packages, which allows us to develop plans and documents that meet the needs and preferences of our clients. This also results in better and more effective collaboration with other companies and team members we work with, including incorporation of survey data directly into our design drawings.

In addition to our CAD, GIS and presentation capabilities, **Trigon** also utilizes the standard Microsoft Office suite of production software for standard word processing, spreadsheets and calculations, database creation and manipulation, and development of slide presentations.



7. CAPACITY FOR TIMELY COMPLETION



Trigon has the professional staff, support staff and equipment necessary to successfully complete any water projects in a timely manner. Our current workload is under the capacity of our staff, which means we are in a position to accept new work with the ability to mobilize immediately. Besides the team members specifically shown within this SOQ, we have additional staff that we can draw upon, when necessary, if project needs dictate.



The majority of the work will be performed in **Trigon's** New Orleans office, depending on the exact nature and scope of the work required. Our project manager, staff and principals will meet with Fenstermaker and Parish staff, as well as make field visits to project sites as required to successfully complete the work. We understand what it takes to successfully execute projects of this sort and are ready and willing to meet with the Parish whenever necessary.

N. Use this space to provide any additional information or description of resources supporting Firm's qualifications for the proposed project.

8. REFERENCES

One of the best ways to judge our experience, attention to detail, quality of work and customer focus is through the personal testimonials of people that have worked with us before. The project experience included in Section L includes owner contact information that can be utilized as references. Additionally, we encourage contact with the following individuals to find out more about our client service & capabilities:

Name	Position/Title	Organization	Phone
Billy Nungesser	Lt. Governor / [fmr] Plaquemines Parish President	State of Louisiana	225-342-7009
Blaine Clancy, PE	City Engineer	City of Slidell, LA	985-646-4270
Robert J. Morgan, Jr.	Contracting Officer	Inframark	504-392-4177
Richard Roberg	Contracting Officer	Department of Homeland Security/FEMA	504-762-2268
M. Ron Spooner, PE	Chief of Engineering	Sewerage and Water Board of New Orleans	504-865-0650
Bob Moeinian, PE	Interim Sewer/Water Director	St. Tammany Parish Government	504-812-7748
Nguyen Phan, PE	Chief Engineer	City of New Orleans, Department of Public Works	504-658-8000
Ali Mustapha, PE	Administrator	Caddo Levee District	318-221-2654
Autumn Permenter, PE	[fmr] Director	City of Shreveport, LA, Dept. of Water & Sewerage	318-227-6657
Ken Dugas, PE	Parish Engineer	Plaquemines Parish Government	504-297-5343
Dan Wagner	President	BLD Services, LLC	504-466-1344

9. OUR COMMITMENT



Trigon is fully committed to supporting Jefferson Parish and successfully executing any projects under this solicitation, should we be selected. We are excited about this opportunity and look forward to providing the Parish with exceptional service.

Should you require additional information during your review of our SOQ, please do not hesitate to contact us for an immediate response.

O. To the best of my knowledge, the foregoing is an accurate statement of facts.

Signature: Michelle Herbert **Print Name:** Michelle Herbert

Title: Chief Executive Officer **Date:** March 31, 2022

BFM Corporation, LLC
Surveying Services

TEC Professional Services Questionnaire

A. Project Name and Advertisement Resolution Number:

Routine Engineering Services for Water Projects

SOQ 22-013 | Resolution No. 138809

B. Firm Name & Address:



BFM
CORPORATION, LLC
Professional Land & Hydrographic Surveying

BFM Corporation, LLC
15 Veterans Memorial Boulevard
Kenner LA 70062

C. Name, title, & contact information of Principal, as defined in Section 2-926 of the Jefferson Parish Code of Ordinances, who is a registered, licensed architect, professional engineer, or surveyor in the State of Louisiana:

Chad M. Poché, P.E., Executive Vice President

504-468-8800 • 504-460-5239 cell • cpoche@bfmcorporation.com

Registered Professional Civil Engineer, Louisiana No. 27667 (since 1998)

D. Name, title, & contact information of employee who is a registered and licensed architect, professional engineer, or surveyor in the State of Louisiana in the applicable discipline. A subcontractor may be substituted here only if the advertised Project requires more than one discipline.

Ralph P. Fontcuberta, Jr., Executive Vice President • LA License No. 4329 (1974)

504-468-8800 • 504-451-7500 cell • ralph@bfmcorporation.com

Registered Professional Land Surveyor, Louisiana No. 4329 (since 1974)

E. Please provide the number of employees whose primary function corresponds with each category:

4 Administrative	- Estimators	- Specification Writers
- Architects (Licensed)	- Geologists	- Structural Engineers
- Chemical Engineers	1 Geotechnical Engineers	- Graduate Engineers
- Civil Engineers	- Interior Designers	2* Project Managers
- Construction Inspectors	- Landscape Architects	- Clerical (<i>see Administrative</i>)
- Ecologists	- Land Surveyor (<i>see PLS</i>)	- Grant/Funding Specialist
- Electrical Engineers	- Mechanical Engineers	- Sanitary Engineers
- Engineer Intern	- Environmental Engineers	1 Principals
2 Professional Land Surveyors		1 Researcher/Archivist
		3 Drafting/AutoCADD
		5 Survey Crew Chiefs
		6 Instrument Men
		24 TOTAL

* Project Manager also noted in Professional Land Surveyor, but overall employee count is correct.

F. Is this submittal by a JOINT-VENTURE? Please check: YES _____ NO X

If marked “No”, skip to Section I. If marked “yes”, complete Sections G-H.

TEC Professional Services Questionnaire

G. If submittal is by a JOINT-VENTURE, list the firms participating and outline specific areas of responsibility (including administrative, technical, and financial) for each firm. please attach additional pages if necessary.

1. **N/A**

2.

H. Has this JOINT-VENTURE previously worked together? Please check:

YES _____ NO _____ N/A

I. List all subcontractors anticipated for this Project. Please note that all subcontractors must submit a fully completed copy of this questionnaire, applicable licenses, and any other information required by the advertisement. See Jefferson Parish Code of Ordinances, Sec. 2-928(a)(3). Please attach additional pages if necessary.

Name & Address:	Specialty:	Worked with Prime Before (Yes or No):
1. N/A		
2.		
3.		

J. Please specify the total number of support personnel that may assist in the completion of this Project:

24 (all personnel, primary and support, will be available on all assigned projects)

TEC Professional Services Questionnaire

K. List the professional in charge, key persons, specialists, and individual consultants anticipated for this Project and provide their relevant information below. If necessary, please attach additional documentation (i.e., résumé) that demonstrates the employment history of the Firm's key persons that may assist in the completion of this Project. Please attach additional pages if necessary.

PROFESSIONAL IN CHARGE OF PROJECT:

Name & Title:

Ralph P. Fontcuberta, Jr., PLS
Executive Vice President

Project Assignment:

Registered Professional Land Surveyor

Name of Firm with which associated:

B F M CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

40 years (Founding Principal of BFM in 1982); 55 years total (1967)

Education: Degree(s)/Year/Specialization:

Coursework, Building, Delgado College, New Orleans
Coursework, Math, University of New Orleans

Active registration: Year first registered/discipline:

1974, Professional Land Surveyor (Louisiana Lic. No. 4329)
1974, Professional Land Surveyor (Mississippi Lic. No. 1633)

Other experience and qualifications relevant to the proposed Project:

Ralph P. Fontcuberta, Jr., PLS has better than half a century of experience in the field of surveying and has been a registered Professional Land Surveyor (PLS) since 1974. He is thoroughly knowledgeable in all aspects of surveying: topographic, hydrographic, boundary, right-of-way surveying, and all facets thereof. He has provided surveying services for residential, plant, and industrial layout projects, ranging from small private lots & buildings to multi-million dollar programs, including the New Orleans FEMA Streets/Recovery Roads Program.

Since the beginning of his career, his work has entailed computations, drafting, and field work for various industrial, commercial, municipal, and private clients. Project work has included topographic surveying needed for a wide variety of engineering, architectural, and related endeavors.

TEC Professional Services Questionnaire

Other experience and qualifications relevant to the proposed Project:

Ralph P. Fontcuberta, Jr., PLS (continued)

Mr. Fontcuberta's **surveying experience with Jefferson Parish can be traced back to BFM's inception in 1982**, and before then while working as a surveyor with another firm. He has over half a century of experience with surveying throughout the region and **specifically with Jefferson Parish**. He has served as the PLS for projects throughout every corner of Jefferson Parish. Relevant project history includes, but is certainly not limited to, the following:

- *East Bank Water Treatment Plant Improvements, Jefferson Parish, LA*
- *East Jefferson Water Works - River Road, Jefferson Parish, LA*
- *East Bank Water Treatment Plant Improvements - 3D Laser Scanning Survey, Jefferson Parish, LA*
- *Lower Lafitte Waterline, Jefferson Parish, LA*
- *Lower Lafitte Waterline Stakeout, Jefferson Parish, LA*
- *Belle Chasse Water Plant Intake, Belle Chasse, Jefferson Parish, LA*
- *River Road Water Line Replacement, Jefferson Parish, LA*
- *Locate 16-inch Water Line between Valve Stations 18 & 24, Grand Isle, Jefferson Parish, LA*
- *Central Avenue Project, Metairie, Jefferson Parish, LA*
- *Emergency Generator Replacement at the East Bank Treatment Plant, Jefferson Parish, LA*
- *Water Line Location Surveying, Grand Isle, Jefferson Parish, LA*
- *River Road Water Line, Waggaman, Jefferson Parish, LA*
- *Grand Isle Water Tower, Grand Isle, Jefferson Parish, LA*
- *Evans Road Waterline Repair - Mississippi River Levee Cross Section, Jefferson Parish, LA*
- *Iris Avenue Water Line Replacement, Jefferson Parish, LA*
- *West Bank Water Intake Basin Hydrographic Survey, Jefferson Parish, LA*
- *Waterline Location, Lower Lafitte Shoreline Stabilization, Jefferson Parish, LA*
- *Hydrological Survey of the East Bank Water Treatment Plant Intake Basin, Jefferson Parish, LA*
- *Fifi Island/Bayou Rigaud Water Line Location, Grand Isle, Jefferson Parish, LA*
- *DPW Proj. 2008-018-WR, Grand Isle Water Tower Site, Town of Grand Isle, Jefferson Parish, LA*
- *Canal No. 17 Bank Stabilization Phase II, Jefferson Parish, LA*
- *Channel Repair, Phase II, Construction Unit No. 3 (West Bank), Jefferson Parish, LA*
- *Channel Repair, Phase II, Construction Unit No. 2 (East Bank), Jefferson Parish, LA*
- *Grand Isle Water Main Location, Jefferson Parish, LA*
- *Water Main Installation, Live Oak Boulevard, West Bank, Jefferson Parish, LA*
- *Levee Cross Sections, Waggaman, Jefferson Parish, LA*

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Chad M. Poché, P.E.
Executive Vice President

Project Assignment:

Engineering Liaison

Name of Firm with which associated:

BFM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

5 years (became partial owner of BFM in 2017); 29 years total (1993)

Education: Degree(s)/Year/Specialization:

M.S., 1998, Civil Engineering, University of New Orleans
B.S., 1993, Civil Engineering, Louisiana State University

Active registration: Year first registered/discipline:

Louisiana, Civil Engineer, No. 27667, 1998
Mississippi, Civil Engineer, No. 15405, 2002

Other experience and qualifications relevant to the proposed Project:

Mr. Poché is an Executive Vice President with (and partial owner of) BFM Corporation, LLC, and a co-founder of BFM's sister company, Gulf South Engineering and Testing, Inc. He has been a consulting geotechnical engineer for more than 20 years in South Louisiana, working on traditional and unique geotechnical engineering projects (shallow and deep foundation design, slope stability, pavement design, etc.). Mr. Poché has also provided construction oversight for waste facilities and virtually every type of earthwork related project. He has been the geotechnical engineer of record for thousands of projects throughout his career.

Mr. Poché's experience includes the development of appropriate scopes of work and proposals for a broad range of projects; planning and coordinating analyses; preparing technical reports; foundation and geotechnical engineering design; construction recommendations; Miss. River facility permitting; managing personnel and office operations; and expert witness testimony. Mr. Poché has logged soil borings; overseen the installation of ground water monitoring wells, piezometers, and inclinometers; overseen and evaluated pile load tests; overseen, performed, and evaluated dynamic pile testing (PDA and PIT); performed CMT field testing and inspection; and performed laboratory testing.

BFM Corporation projects overseen by Mr. Poché would include:

TEC Professional Services Questionnaire

Other experience and qualifications relevant to the proposed Project:

Chad M. Poché, P.E. (continued)

Levee Cross Sections, Waggaman, Jefferson Parish, LA. BFM's scope of services included a cross section survey with location & inverts of water manholes & valves for the project. (\$2,845 (fee); 2018)

East Bank Water Treatment Plant Improvements, Jefferson Parish, LA. BFM's surveying services located submerged pipes upon excavation as part of Task Order No. 3 of the project. (\$19,703 (fee); 2018)

Paillet Basin Tidal Protection Levee, Town of Jean Lafitte, Jefferson Parish, LA. BFM provided topographic and hydrographic surveying services for the project. Scope included establishing three static GPS observation points at major turns on the levee to ensure baseline is constrained to State Plane Coordinates; BFM also established a baseline along the centerline of the existing earthen levee (referenced to NAD 1983 2011). BFM set vertical control Temporary Benchmarks (TBM) which were referenced to horizontal control points (NAVD 1988 Geoid 12B). Plotted a cross section depicting the ground, edge of water, top and toe of earthen levee, and levee centerline at typical widths of 100 feet. Located visible above-ground utilities as well as underground utilities with visible surface evidence (where available, BFM obtained record drawings from relevant agencies to further plot utilities), as well as existing wall, center of pumps, and discharge pipes at the existing pump station. Trees and large shrubbery & etc. were located and described. Existing improvements (such as sheds, piers, and buildings) and trees were included in general location surveying. Deliverables included hardcopy, PDF, and AutoCAD DWG files. (\$150,000 (fee); 2018)

Lapalco Boulevard Turn Lane (Lapalco Boulevard at Baratavia Boulevard), Jefferson Parish, LA. BFM provided surveying services for the Lapalco Boulevard Turn Lane project (JPPW 2017-048-RBP), which involved a westbound left turn lane to southbound Lapalco Boulevard. BFM's scope included a Route Topographic Survey of Lapalco Boulevard at Baratavia Boulevard; the full scope plan & profile included all services, utilities, properties, elevations, cross sections, and items necessary to perform any and all engineering and construction work. The project site was subject to road closures during the survey and preliminary construction/preparation phase. (\$46,854 (fee); 2018)

Destrehan Avenue Bike Path (Patriot Street to Chadwood Drive), Harvey, Jefferson Parish, LA. BFM prepared a Route Topographic Survey for the project; the full scope plan & profile included all services, utilities, properties, elevations and items necessary to perform any and all engineering and construction work. The project area included the Destrehan ramp intersection, Chadwood Drive to Destrehan Avenue, and from the Destrehan ramp to Patriot Street. Surveying services further included the intersection of Destrehan Avenue to all side streets within the project area. (\$86,355 (fee); 2019)

Lapalco Boulevard Bridge at Harvey Canal, Jefferson Parish, LA. BFM provided extensive surveying services for a topographic survey and right-of-way (ROW) determination for the project. Project elements included setting GPS Static Control (5 permanent control points), traversing a proposed survey line, and land topography surveying. Additional phases included hydrographic topography of the project area, the right-of-way determination, and subsurface utility engineering (SUE). A Route Topographic Survey was also included as part of the scope. (\$575,738 (fee); 2019)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

John Philip Thayer
Field Operations Supervisor

Project Assignment:

Field Operations Supervisor

Name of Firm with which associated:

BFM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

14 years (joined BFM in 2008); 15 years total (2007)

Education: Degree(s)/Year/Specialization:

B.S., 2007, Physical Education, Trevecca Nazarene University

Active registration: Year first registered/discipline:

Professional Land Surveyor Registration in process, State of Louisiana

Other experience and qualifications relevant to the proposed Project:

Mr. Thayer is a Field Operations Supervisor with considerable experience in field surveying services, including ALTA/as-built surveying, construction layout, boundary, topographic, cross-sections, GPS use, and numerous other surveying types.

Central Avenue Project, Metairie, Jefferson Parish, LA. BFM provided topographic surveying services for the Central Avenue project, which extended from Airline Highway to Karen Drive. This included location of utilities, notably the municipal water line. (\$14,580 (fee); 2014)

River Road Water Line, Waggaman, Jefferson Parish, LA. As requested by the Project Engineer, BFM provided water line location & general surveying services for the project, which extended from the St. Charles Parish line to Rivet Boulevard in Waggaman. (\$43,211 (fee); 2012)

Grand Isle Water Tower, Grand Isle, Jefferson Parish, LA. BFM provided as-requested amended surveying services for the project. This was an extension of DPW Proj. 2008-018-WR, executed in 2009, for additional project work. (\$8,753 (fee); 2012)

Water Line Location Surveying, Grand Isle, Jefferson Parish, LA. BFM located a 16-inch water line at Camp Club in Grand Isle, Louisiana. (\$1,701 (fee); 2012)

West Bank Water Intake Basin Hydrographic Survey, Jefferson Parish, LA. BFM provided hydrographic surveying services for the Intake Basin at the West Bank plant. (2011)

TEC Professional Services Questionnaire

Other experience and qualifications relevant to the proposed Project:

John Philip Thayer (continued)

Fifi Island/Bayou Rigaurd Water Line Location, Grand Isle, Jefferson Parish, LA. BFM's surveying services located a 16-inch water line utility in Fifi Island and Bayou Rigaurd in Grand Isle, Louisiana. (\$3,178 (fee); 2010)

East Jefferson Water Works – River Road, Jefferson Parish, LA. BFM's surveying services for the project involved the location of existing water lines/pipes for the East Jefferson Water Works located on River Road in Jefferson Parish. (\$2,070 (fee); 2017)

East Bank Water Treatment Plant Improvements, Jefferson Parish, LA. BFM executed a boundary survey, utilizing Laser Scan P3, for an As-Built Utilities survey. This included draft surveying (in conjunction with the Prime Firm) as well as provision of final survey as directed. In a later phase, BFM provided topographic and boundary surveying services. (\$154,770 (fee); 2017)

Belle Chasse Water Plant Intake, Belle Chasse, Jefferson Parish, LA. BFM provided bathymetric surveying services for the project. (\$14,804 (fee); 2016)

Locate 16-inch Water Line between Valve Stations 18 & 24, Grand Isle, Jefferson Parish, LA. BFM provided surveying services to locate the water line situated between valve stations 18 and 24 in Grand Isle. (\$133,444 (fee); 2014)

Emergency Generator Replacement at the East Bank Treatment Plant, Jefferson Parish, LA. BFM prepared a topographic survey of the area surrounding the proposed site for the emergency generators. (\$5,888 (fee); 2012)

Evans Road Waterline Repair – Mississippi River Levee Cross Section, Jefferson Parish, LA. BFM provided cross section surveying services for the Evans Road Mississippi River Levee profiles as requested by the Parish in order to obtain USACE permitting. The cross section view showed the existing levee cross section, the design levee cross section, and the proposed excavation sites. (\$4,485 (fee); 2012)

Iris Avenue Water Line Replacement, Jefferson Parish, LA. BFM provided topographic surveying services for the Iris Avenue Water Line Replacement, which included the area from River Road to Jefferson Highway. (\$18,493 (fee); 2011)

Hydrological Survey of the East Bank Water Treatment Plant Intake Basin, Jefferson Parish, LA. BFM provided hydrological surveying services for the project. (\$4,975 (fee); 2010)

Waterline Location, Lower Lafitte Shoreline Stabilization, Jefferson Parish, LA. BFM provided surveying services associated with the location of a 16 in plastic waterline in the Barataria Waterway as part of the Lower Lafitte Shoreline Stabilization project. (\$27,825 (fee); 2011)

Grand Isle Water Tower Site, Town of Grand Isle, Jefferson Parish, LA. BFM provided topographic surveying for the project. (\$6,859 (fee); 2009)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Gary J. Lambert, Jr., PLS
Registered Professional Land Surveyor

Project Assignment:

Registered Professional Land Surveyor; Project Manager/Drafting Supervisor

Name of Firm with which associated:

BFM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

4 years (joined BFM in 2018); 11 years total

Education: Degree(s)/Year/Specialization:

B.S., 2018, Geomatics, Nicholls State University
B.S., 2014, Construction Management, Louisiana State University

Active registration: Year first registered/discipline:

2021, Professional Land Surveyor (Louisiana Lic. No. 5929)

Other experience and qualifications relevant to the proposed Project:

Mr. Lambert provides Project Management and Drafting Oversight for the firm. He has also provided Survey Crew Chief Services since joining BFM and offers a well-rounded experience overview for any project. Mr. Lambert has completed Basic OSHA Training and holds license with the Gulf Coast Safety Council (08SSV, ID429523).

Avenue D Drainage Improvements (Phase VIII: Allo Street), Metairie, Jefferson Parish, LA. BFM executed a Route Topographic Survey for the project; the full scope plan & profile included all services, utilities, properties, elevations and items necessary to perform any and all engineering and construction work. The project area (Allo Street) extended from 4th Street to 6th Street. (\$12,855 (fee); 2019)

North Arnoult Drainage Pump Station Improvements, Jefferson Parish, LA. BFM's project services included both boundary and topographic surveying of the project site. (\$6,870 (fee); 2019)

Lapalco Boulevard Bridge at Harvey Canal, Jefferson Parish, LA. BFM provided extensive surveying services for a topographic survey and right-of-way (ROW) determination for the project. Project elements included setting GPS Static Control (5 permanent control points), traversing a proposed survey line, and land topography surveying. Additional phases included hydrographic topography of the project area, the right-of-way determination, and subsurface utility engineering (SUE). A Route Topographic Survey was also included as part of the scope. (\$575,738 (fee); 2019)

TEC Professional Services Questionnaire

Other experience and qualifications relevant to the proposed Project:

Gary J. Lambert, Jr., PLS (continued)

Sewer Lift Station L-13-6, Ehret Road, Marrero, Jefferson Parish, LA. BFM's surveying scope involved topographic and boundary surveying services for the project in Marrero. BFM established a baseline parallel to Ehret Road, with the beginning, end, and points of intersection referenced by three point ties to topographic features in the area. With the limits of survey established (Ehret Road, Weatherly Place, Crestridge Circle, and Broas Drive), BFM plotted the location of improvements. Visible above-ground utilities & below-ground utilities with visible surface evidence were also plotted. (\$8,790 (fee); 2019)

Coventry Drainage Pump Stations, Jefferson Parish, LA. BFM provided a Route Topographic Survey with Hydrographic Survey for the project, located in River Ridge, Louisiana. The limits of survey extended from r/w to r/w along Jefferson Highway. The levee and hydrographic survey area was noted as 400 feet wide (200 ft. in either direction of the extended centerline of Colonial Heights Road). Drone Surveying was a key element of the project. The hydrographic survey extended 500 feet into the river from the water's edge. (\$89,780 (fee); 2020)

Orange Lane Pump Station Project, Grand Isle, Jefferson Parish, LA. The project consists of a new storm water pumping station on the intersection of Orange Lane at Orleans Avenue in Grand Isle, Louisiana. The scope of services includes obtaining topographical survey information and the preparation of a drainage map for the project. Phase 1 of the project involved the topographic and right of way surveying services; BFM conducted a site topographic survey at the proposed lift station site and provided boundary surveying to determine rights of way. Phase 2 of the project established the Drainage Map. BFM located all drainage structures within the Limits of Survey; this included ditches, culverts, drain inlets, and catch basins. A drone survey was executed to gather a 25 ft elevation grid throughout the project area. (\$32,280 (fee); 2020)

Bissonet Plaza Drainage Improvements (Phase 1), Metairie, Jefferson Parish, LA. BFM prepared a Route Topographic Survey for Phase 1 of the project, located at Elmwood Parkway and Craig Avenue. This project built upon work executed by the firm for a previous extensive surveying project involving Bissonet Plaza subdivision; this allowed for BFM to build upon established surveys to save time and expenses. Surveying for each element of the project included services included confirming all controls and benchmarks, topographic features, location of improvements and utilities, location of natural elements as applicable, and notation of right-of-way points. (\$7,980 (fee); 2020)

Metairie Road Drainage Evaluation, Metairie, Jefferson Parish, LA. BFM provided surveying services for this Drainage Evaluation Project (PW 2018-024-DR). The scope of services included a full Route Topographic Survey (includes all services, utilities, properties, elevations and items necessary to perform any and all engineering and construction work) from gutter line to gutter line along Metairie Road from the westerly apparent right-of-way (R/W) of Causeway Boulevard to easterly apparent ROW of Focis Street. The project encompassed approximately 10,400 linear feet, with cross-sections and elevations surveyed included as part of the scope. (\$18,350 (fee); 2020)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Christopher Lemley
Quality Control Supervisor

Project Assignment:

Quality Control Supervisor

Name of Firm with which associated:

BFM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

8 years (joined BFM in 2014); 16 years total (2006)

Education: Degree(s)/Year/Specialization:

High School Diploma

Active registration: Year first registered/discipline:

N/A

Other experience and qualifications relevant to the proposed Project:

Mr. Lemley serves as BFM's Quality Control Supervisor, overseeing all work and activity by the firm's personnel to be sure all is kept up to our exacting standards. His surveying experience includes over 8 years as a Survey Crew Chief. His survey software experience includes projects involving Trimble, Topcon, Leica, and Hypack, and has maintained and operated GPS, Auto-Level, and Total Station.

Lower Lafitte Waterline Stakeout, Jefferson Parish, LA. BFM provided stakeout surveying for the project, staking the water line every 50 feet (with 4 ft. wooden stakes). (\$10,380 (fee); 2016)

River Road Water Line Replacement, Jefferson Parish, LA. As directed by the Project Engineer, BFM provided topographic surveying services for the project, which extended from Rivet Boulevard to Willswood Drive. This project was part of the Louisiana Department of Health and Hospitals (LDHH) Clean Drinking Water loan program. (\$84,700 (fee); 2015)

East Bank Water Treatment Plant Improvements, Jefferson Parish, LA. BFM executed a boundary survey, utilizing Laser Scan P3, for an As-Built Utilities survey. This included draft surveying (in conjunction with the Prime Firm) as well as provision of final survey as directed. In a later phase, BFM provided topographic and boundary surveying services. (\$154,770 (fee); 2017)

Belle Chasse Water Plant Intake, Belle Chasse, Jefferson Parish, LA. BFM provided bathymetric surveying services for the project. (\$14,804 (fee); 2016)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Thomas O. Wright
Survey Crew Chief

Project Assignment:

Survey Crew Chief

Name of Firm with which associated:

BFM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

14 years (joined BFM in 2008); 45 years total (1977)

Education: Degree(s)/Year/Specialization:

High School Diploma

Active registration: Year first registered/discipline:

*American Traffic Safety Service Assn. – Traffic Flagger/Control Technician/Control Supervisor
Basic OSHA Training - Completed
Transportation Work Identification Card (TWIC)*

Other experience and qualifications relevant to the proposed Project:

Mr. Wright has over 40 years of experience in surveying services, including a multitude of project types (water, wastewater, stormwater, drainage, roadway, etc.) throughout the region.

Lower Lafitte Waterline, Jefferson Parish, LA. BFM provided stakeout services for the Lower Lafitte Waterline project. (\$10,380 (fee); 2017)

Grand Isle Water Tower, Grand Isle, Jefferson Parish, LA. BFM provided as-requested amended surveying services for the project. This was an extension of DPW Proj. 2008-018-WR, executed in 2009, for additional project work. (\$8,753 (fee); 2012)

Fifi Island/Bayou Rigaud Water Line Location, Town of Grand Isle, Jefferson Parish, LA. BFM's surveying services located a 16-inch water line utility in Fifi Island and Bayou Rigaud in Grand Isle, Louisiana. (\$3,178 (fee); 2010)

Locate 16-inch Water Line between Valve Stations 18 & 24, Grand Isle, Jefferson Parish, LA. BFM provided surveying services to locate the water line situated between valve stations 18 and 24 in Grand Isle. (\$133,444 (fee); 2014)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Curtis "Jay" Barrios
Survey Crew Chief

Project Assignment:

Survey Crew Chief

Name of Firm with which associated:

BFM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

32 years (joined BFM in 1990); 32 years total (1990)

Education: Degree(s)/Year/Specialization:

High School Diploma

Active registration: Year first registered/discipline:

*American Traffic Safety Service Assn. – Traffic Flagger
Transportation Work Identification Card (TWIC)*

Other experience and qualifications relevant to the proposed Project:

Mr. Barrios' surveying experience includes boundary, hydrographic, and topographic. He has worked on location and performed topographic surveys for a number of major projects.

Belle Chasse Water Plant Intake, Belle Chasse, Jefferson Parish, LA. BFM provided bathymetric surveying services for the project. (\$14,804 (fee); 2016)

Locate 16-inch Water Line between Valve Stations 18 & 24, Grand Isle, Jefferson Parish, LA. BFM provided surveying services to locate the water line situated between valve stations 18 and 24 in Grand Isle. (\$133,444 (fee); 2014)

Iris Avenue Water Line Replacement, Jefferson Parish, LA. BFM provided topographic surveying services for the Iris Avenue Water Line Replacement, which included the area from River Road to Jefferson Highway. (\$18,493 (fee); 2011)

Grand Isle Water Main Location, Jefferson Parish, LA. BFM provided all surveying services associated with the location of the Grand Isle water main. (\$20,000 (fee); 2002)

Water Main Installation, Live Oak Boulevard, West Bank, Jefferson Parish, LA. BFM provided topographic surveying services for the project. (\$20,000 (fee); 1998)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Eric Gladney
Survey Crew Chief

Project Assignment:

Survey Crew Chief

Name of Firm with which associated:

BFM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

8 years (joined BFM in 2014); 21 years total (2001)

Education: Degree(s)/Year/Specialization:

High School Diploma

Active registration: Year first registered/discipline:

*American Traffic Safety Service Assn. – Traffic Flagger
Norfolk Southern Roadway Worker Protection Contractor Safety Cert.
Transportation Work Identification Card (TWIC)*

Other experience and qualifications relevant to the proposed Project:

Lower Lafitte Waterline Stakeout, Jefferson Parish, LA. BFM provided stakeout surveying for the project, staking the water line every 50 feet (with 4 ft. wooden stakes). (\$10,380 (fee); 2016)

East Jefferson Water Works – River Road, Jefferson Parish, LA. BFM's surveying services for the project involved the location of existing water lines/pipes for the East Jefferson Water Works located on River Road in Jefferson Parish. (\$2,070 (fee); 2017)

River Road Water Line Replacement, Jefferson Parish, LA. As directed by the Project Engineer, BFM provided topographic surveying services for the project, which extended from Rivet Boulevard to Willswood Drive. This project was part of the Louisiana Department of Health and Hospitals (LDHH) Clean Drinking Water loan program. (\$84,700 (fee); 2015)

East Bank Water Treatment Plant Improvements, Jefferson Parish, LA. BFM's surveying services located submerged pipes upon excavation as part of Task Order No. 3 of the project. (\$19,703 (fee); 2018)

Belle Chasse Water Plant Intake, Belle Chasse, Jefferson Parish, LA. BFM provided bathymetric surveying services for the project. (\$14,804 (fee); 2016)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Jeff Patin
Survey Crew Chief

Project Assignment:

Survey Crew Chief

Name of Firm with which associated:

BFM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

3 years (joined BFM in 2019); 23 years total (1999)

Education: Degree(s)/Year/Specialization:

High School Diploma

Active registration: Year first registered/discipline:

Transportation Work Identification Card (TWIC)

Other experience and qualifications relevant to the proposed Project:

Mr. Patin has worked as a Survey Crew Chief and Instrumentman for 20 years for a number of southeastern Louisiana surveying firms on projects throughout the region. His work history includes supervision of field crew personnel, operation of various survey equipment (Topcon GPT, Leica GPS, Total Station, etc.), calculations, information collection, and any & all work required to execute the survey and obtain the information needed. Mr. Patin has worked on projects for various public & private clients, and has performed field work under the direction of the Corps of Engineers.

Town Center Water Well, City of Slidell, LA. BFM's surveying scope included topographic and boundary surveying services for the project. (\$16,533 (fee); 2019)

Lapalco Boulevard Bridge at Harvey Canal, Jefferson Parish, LA. BFM provided extensive surveying services for a topographic survey and right-of-way (ROW) determination for the project. Project elements included setting GPS Static Control (5 permanent control points), traversing a proposed survey line, and land topography surveying. Additional phases included hydrographic topography of the project area, the right-of-way determination, and subsurface utility engineering (SUE). A Route Topographic Survey was also included as part of the scope. (\$575,738 (fee); 2019)

5th & 9th Sewer Lift Station Upgrades, Harvey, Jefferson Parish, LA. BFM's scope involved a topographic survey of the project site, located at the intersection of 5th Avenue & 9th Street. Cross sections were taken on a 25 ft grid within limits. (\$6,790 (fee); 2019)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Anthony Watson
CADD Technician

Project Assignment:

CADD Technician

Name of Firm with which associated:



Years experience with this Firm:

11 years (joined BFM in 2011); 31 years total (1992)

Education: Degree(s)/Year/Specialization:

Coursework - CAD, Avatech Solutions, Los Colinas, TX

Active registration: Year first registered/discipline:

NA

Other experience and qualifications relevant to the proposed Project:

Mr. Watson has experience as a draftsman/CADD technician, having started his career as an intern with the Surveying Department of the City of Plano, TX. His experience through the years includes manual and computer-aided drafting for a wide range of projects, ranging from small lot surveys to subdivisions to municipal treatment and private industrial plants. He has experience in all facets of surveying (boundary, topographic, ALTA/ACSM, plan & profile, etc.) in both drafting and field environments.

Lower Lafitte Waterline Stakeout, Jefferson Parish, LA. BFM provided stakeout surveying for the project, staking the water line every 50 feet (with 4 ft. wooden stakes). (\$10,380 (fee); 2016)

Locate 16-inch Water Line between Valve Stations 18 & 24, Grand Isle, Jefferson Parish, LA. BFM provided surveying services to locate the water line situated between valve stations 18 and 24 in Grand Isle. (\$133,444 (fee); 2014)

East Bank Water Treatment Plant Improvements, Jefferson Parish, LA. BFM provided surveying services for Tasks 1 (topographic) and 2 (boundary) of the project, part of a major improvements project for the East Bank Water Treatment Plant in Jefferson Parish. (\$24,465 (fee); 2016)

Evans Road Waterline Repair – Mississippi River Levee Cross Section, Jefferson Parish, LA. BFM provided cross section surveying services for the Evans Road Levee profiles as requested by the Parish in order to obtain USACE permitting. The cross section view showed the existing levee cross section, the design levee cross section, and the proposed excavation sites. (\$4,485 (fee); 2012)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Shaun Clements
CADD Technician

Project Assignment:

CADD Technician

Name of Firm with which associated:

B_FM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

4 years (joined BFM in 2018); 7 years total (2015)

Education: Degree(s)/Year/Specialization:

Associates of Applied Sciences, 2015, Computer Drafting and Design (ITT)

Active registration: Year first registered/discipline:

NA

Other experience and qualifications relevant to the proposed Project:

North Arnoult Drainage Pump Station Improvements, Jefferson Parish, LA. BFM's project services included both boundary and topographic surveying of the project site. (\$6,870 (fee); 2019)

Sewer Lift Station L-13-6, Ehret Road, Marrero, Jefferson Parish, LA. BFM's surveying scope involved topographic and boundary surveying services. (\$8,790 (fee); 2019)

Holly Drive Drainage Project, Lewisburg Estates Subdivision, Mandeville, St. Tammany Parish, LA. BFM provided boundary with topographic surveying of the project site (multiple lots) in the Lewisburg Estates Subdivision for this drainage project. (\$13,392 (fee); 2019)

Avenue D Drainage Improvements (Phase VIII: Allo Street), Metairie, Jefferson Parish, LA. BFM executed a Route Topographic Survey for the project; the full scope plan & profile included all services, utilities, properties, elevations and items necessary to perform any and all engineering and construction work. The project area (Allo Street) extended from 4th Street to 6th Street. (\$12,855 (fee); 2019)

West Bank Bus Stop Improvements, Jefferson Parish, LA. BFM's surveying services involved topographic surveying (25 ft grid) for multiple bus stop locations (AV26, AV27, AV3 (6 sites), AV40, AV42, AV43, AV44, AV45, AV47, AV65, AV74, AV76, HL67, MR44, MR52). (\$26,622 (fee); 2019)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Kevin A. Roberts
CADD Technician

Project Assignment:

CADD Technician

Name of Firm with which associated:**Years experience with this Firm:**

4 years (joined BFM in 2018); 37 years total (1985)

Education: Degree(s)/Year/Specialization:

A.D., 1999, Drafting & Design, Louisiana Technical College
Coursework, 1994-1997, Nunez Community College
Coursework, 1984-1988, Delgado Community College
Coursework, 1982-1983, University of New Orleans

Active registration: Year first registered/discipline:

NA

Other experience and qualifications relevant to the proposed Project:

Mr. Roberts has experience with civil engineering, offshore engineering, water purification systems, and general architectural and construction design & terminology. He obtained his A.D. in Drafting in 1999, and has taken additional coursework throughout his career.

Town Center Water Well, City of Slidell, LA. BFM's surveying scope included topographic and boundary surveying services for the project. (\$16,533 (fee); 2019)

Lapalco Boulevard Bridge at Harvey Canal, Jefferson Parish, LA. BFM provided extensive surveying services for a topographic survey and right-of-way (ROW) determination for the project. Project elements included setting GPS Static Control (5 permanent control points), traversing a proposed survey line, and land topography surveying. Additional phases included hydrographic topography of the project area, the right-of-way determination, and subsurface utility engineering (SUE). A Route Topographic Survey was also included as part of the scope. (\$575,738 (fee); 2019)

5th & 9th Sewer Lift Station Upgrades, Harvey, Jefferson Parish, LA. BFM's scope involved a topographic survey of the project site, located at the intersection of 5th Avenue & 9th Street. Cross sections were taken on a 25 ft grid within limits. (\$6,790 (fee); 2019)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Dawn Hoffman
Researcher/Archivist

Project Assignment:

Researcher/Archivist

Name of Firm with which associated:

BFM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

13 years (joined BFM in 2009); 25 years total (1997)

Education: Degree(s)/Year/Specialization:

A.D., 1999, Computer-Aided Drafting, Southeast College of Technology
Certificate, 2003, Introduction to ArcGIS, Louisiana State University

Active registration: Year first registered/discipline:

NA

Other experience and qualifications relevant to the proposed Project:

East Bank Water Treatment Plant Improvements, Jefferson Parish, LA. BFM executed a boundary survey, utilizing Laser Scan P3, for an As-Built Utilities survey. This included draft surveying (in conjunction with the Prime Firm) as well as provision of final survey as directed. In a later phase, BFM provided topographic and boundary surveying services. (\$154,770 (fee); 2017)

East Jefferson Water Works – River Road, Jefferson Parish, LA. BFM's surveying services for the project involved the location of existing water lines/pipes for the East Jefferson Water Works located on River Road in Jefferson Parish. (\$2,070 (fee); 2017)

Locate 16-inch Water Line between Valve Stations 18 & 24, Grand Isle, Jefferson Parish, LA. BFM provided surveying services to locate the water line situated between valve stations 18 and 24 in Grand Isle. (\$133,444 (fee); 2014)

Waterline Location, Lower Lafitte Shoreline Stabilization, Jefferson Parish, LA. BFM provided surveying services associated with the location of a 16 in plastic waterline in the Barataria Waterway as part of the Lower Lafitte Shoreline Stabilization project. (\$27,825 (fee); 2011)

Hydrological Survey of the East Bank Water Treatment Plant Intake Basin, Jefferson Parish, LA. BFM provided hydrological surveying services for the project. (\$4,975 (fee); 2010)

TEC Professional Services Questionnaire

L. Work by Firm or Joint-Venture members which best illustrates current qualifications relevant to this Project. Please include any and all work performed for Jefferson Parish. Please attach additional pages if necessary.

PROJECT NO. 1

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>East Bank Water Treatment Plant Improvements Project (including Laser Scanning), Jefferson Parish, Louisiana</p> <p>Stantec 1340 Poydras Street, Suite 1420 New Orleans LA 70112</p> <p>Jeffrey Sapia, P.E., 225-926-3991 jeffrey.sapia@stantec.com</p>	<p>BFM provided surveying services for Tasks 1 (topographic) and 2 (boundary) of the project, part of a major improvements project for the East Bank Water Treatment Plant located at 3600 Jefferson Highway in Jefferson Parish. This included executing a 3D Laser Scan for an As-Built Utilities survey. Draft surveying (in conjunction with the Prime Firm) as well as provision of final survey were prepared as directed.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2017 June	N/A	\$166,230 (fee)

PROJECT NO. 2

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>River Road Water Line Replacement, Jefferson Parish, Louisiana</p> <p>Digital Engineering 527 W Esplanade Ave Ste 200 Kenner LA 70065</p> <p>Frank T. Liang, P.E., 504-468-7515 fliang@deii.net</p>	<p>As directed by the Project Engineer, BFM provided topographic surveying services for the project, which extended from Rivet Boulevard to Willswood Drive. This project was part of the Louisiana Department of Health and Hospitals (LDHH) Clean Drinking Water loan program.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2015 June	N/A	\$84,700 (fee)

TEC Professional Services Questionnaire

PROJECT NO. 3		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>East Bank Water Treatment Plant Project – Water and Utility Line Survey, Jefferson Parish, Louisiana</p> <p>Stantec Consulting Services, Inc. 1340 Poydras Street, Suite 1420 New Orleans LA 70112</p> <p>Jeffrey Sapia, P.E., 225-926-3991 jeffrey.sapia@stantec.com</p>	<p>BFM's surveying services, as part of Task Order No. 3 of the project, involved BFM's location of exposed water or utility lines after said lines were excavated by another firm. Horizontal location and vertical elevation, at top of pipe, was recorded along with the pipe size and type. Field data was processed to add to the existing topographic survey, previously executed by BFM.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2018 October	N/A	\$19,703 (fee)

PROJECT NO. 4		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>River Road Water Line, Waggaman, Jefferson Parish, Louisiana</p> <p>Digital Engineering 527 W Esplanade Ave Ste 200 Kenner LA 70065</p> <p>Frank T. Liang, P.E., 504-468-7515 fliang@deii.net</p>	<p>As requested by the Project Engineer, BFM provided water line location & general surveying services for the project, which extended from the St. Charles Parish line to Rivet Boulevard in Waggaman.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2012 November	N/A	\$43,211 (fee)

TEC Professional Services Questionnaire

PROJECT NO. 5		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Belle Chasse Water Plant Intake, Belle Chasse, Jefferson Parish, Louisiana</p> <p>Kyle Associates, LLC 638 Village Lane North Mandeville LA 70471</p> <p>Phil O. Nelson, P.E., 985-727-9377 pnelson@kyleassociates.net</p>	<p>BFM provided bathymetric, boundary and topographic surveying services for the project. Improvements on the site were located, as well as visible above-ground utilities & underground utilities with visible surface evidence. Existing storm sewer and sanitary sewers were located using top of casing; invert elevations were provided on the survey. Bathymetric surveys were tied to the U.S. Army Corps of Engineers baseline. Deliverables included indelible prints and AutoCAD DWG format drawing files</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2016 July	N/A	\$14,804 (fee)

PROJECT NO. 6		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Central Avenue Project (including location of Municipal Water Line), Metairie, Jefferson Parish, Louisiana</p> <p>Principal Engineering 1011 N Causeway Blvd Suite 19 Mandeville LA 70471</p> <p>Tyler Gaspard, E.I., 985-624-5001 tyler@principal-engineering.com</p>	<p>BFM provided topographic surveying services for the Central Avenue project, which extended from Airline Highway to Karen Drive. This included location of utilities, notably the municipal water line.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2014 February	N/A	\$14,580 (fee)

TEC Professional Services Questionnaire

PROJECT NO. 7		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>East Jefferson Water Works – River Road, Jefferson Parish, Louisiana</p> <p>Stantec 1340 Poydras Street, Suite 1420 New Orleans LA 70112</p> <p>John Catalanotto, P.E., 504-234-1556 john.a.catalanotto@stantec.com</p>	<p>BFM's surveying services for the project involved the location of existing water lines/pipes for the East Jefferson Water Works located on River Road in Jefferson Parish.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2017 June	N/A	\$2,070 (fee)

PROJECT NO. 8		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Lower Lafitte Waterline Project, Jefferson Parish, Louisiana</p> <p>CB&I 2424 Edenborn Avenue Suite 450 Metairie LA 70001</p> <p>Gene S. Gillen, P.E., 504-832-4881 gene.gillen@cbi.com</p>	<p>BFM provided stakeout surveying for the project, staking the water line every 50 feet (with 4 ft. wooden stakes).</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2017 January	N/A	\$10,380 (fee)

TEC Professional Services Questionnaire

PROJECT NO. 9		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Locate 16-inch Water Line between Valve Stations 18 & 24, Grand Isle, Jefferson Parish, Louisiana</p> <p>Jefferson Parish Water Department 1221 Elmwood Park Blvd Ste 909 Jefferson LA 70123</p> <p>R. Douglas Vincent, P.E., 504-838-4363 JPWater@jeffparish.net</p>	<p>BFM provided surveying services to locate the water line situated between valve stations 18 and 24 in Grand Isle.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2014 August	N/A	\$133,444 (fee)

PROJECT NO. 10		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Waterline Location, Lower Lafitte Shoreline Stabilization, Jefferson Parish, Louisiana</p> <p>Shaw Coastal Post Office Box 98519 Baton Rouge LA 70884</p> <p>Gene Gillen, P.E., 225-932-2500</p>	<p>BFM provided surveying services associated with the location of a 16 in plastic waterline in the Barataria Waterway as part of the Lower Lafitte Shoreline Stabilization project.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2011 August	N/A	\$27,825 (fee)

TEC Professional Services Questionnaire

M. List all prior and/or on-going litigation between Firm and Jefferson Parish. Please attach additional pages if necessary.

Parties:		Status/Result of Case:
Plaintiff:	Defendant:	
1.	<div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p style="text-align: center;"><i>BFM Corporation is not currently, nor has it previously been involved, in litigation with Jefferson Parish.</i></p> </div>	
2.		
3.		
4.		

N. Use this space to provide any additional information or description of resources supporting Firm's qualifications for the proposed project.

BFM CORPORATION, LLC

Professional Land & Hydrographic Surveying

CRITERIA 1 • PROFESSIONAL TRAINING AND RELEVANT PROJECT EXPERIENCE

Established in 1982, **BFM Corporation, LLC, Professional Land & Hydrographic Surveying**, has provided services to public & private concerns throughout Louisiana and the Gulf South. The firm provides surveying services covering all facets of engineering, construction, and forensics; topographic, hydrographic, and high definition laser scanning.

BFM is a majority Woman-Owned Business Enterprise (WBE) as well as a Hudson Initiative certified Small & Emerging Business and Small Entrepreneurship in Louisiana.

Our capabilities include the following and more:

- **Topographic Surveying**
- **Drone Surveying / Photogrammic and LiDAR**
- **Bathymetric / Hydrographic Surveys**
- **Property, Boundary, and Right-of-Way Surveys**

TEC Professional Services Questionnaire

N. continued.

- **Maps, Cross-Sections, and Data Sets**
- **3D Laser Scanning**
- **Benchmarks**
- **Construction-Related Surveying**
- **Builder's Package Surveys**
- **American Land Title Association (ALTA) Surveys**

BFM's project work routinely involves **extensive records and related research** as an element of successful completion, as well as coordination with the client, agency or department. BFM has the personnel to make sure this is done correctly and expeditiously.

Our **Survey Field Crews** are equipped with Leica Viva and Leica Captivate Data Collectors, as well as Leica GPS Smart Antennas. Each GPS unit is linked to the Leica SmartNet Network, giving each crew the ability for Real Time Kinematic Positioning (RTK), derived from the Global Navigation Satellite System (GNSS). Furthermore, each crew is outfitted with Leica TS series robotic total stations, simplifying and expediting projects. BFM can also use in-house drones and 3D scanners to further analyze sites and projects. BFM's crews are trained to use this equipment to its full potential to maximize accuracy and efficiency in the field.

BFM offers **Drone Surveying Services**, featuring a DJI Matrice 600 Pro drone outfitted with a Sony A7R3 42-megapixel camera, Pixhawk Triggering System, VMAP PPK system, and an A3 Pro Flight Controller. It can capture 50 acres of land in that time (with a flight ceiling of 165 feet, pixel quality is 0.71 CM). This allows BFM to quickly & accurately capture data and facilitates quicker field work to produce highly accurate and precise surveying information. Deliverables feature Clean Point Cloud, 3D Mesh, Orthomosaic, and AutoCAD DWG Topographic.

BFM's **3D modeling capabilities** allow us to process & model for any design purpose. High-definition scanner data is processed using software from Leica and Autodesk. BFM is working on non-traditional survey deliverables, including virtual tours, live walkthroughs, detailed pipe rack modeling, and modeling for use with Autodesk Revit Architecture.

When needed, BFM Corporation provides **bathymetric surveying** to handle any **hydrographic surveying** tasks. For large rivers and bodies of water, BFM is equipped with Teledyne Odom Hydro Solutions' Hydro Trac Single Beam Echo Sounder. For smaller bodies of water, BFM uses an SL20 Remote Controlled Boat equipped with CEE Scope Dual Channel Echo Sounder. The firm uses Hypack Software to process collected data. Further, BFM can execute multi-beam scans, side scans and magnetometer surveys upon request.

Please refer to the projects presented in Item L of this form as well as our personnel bios for an overview of relevant project work executed by BFM Corporation.

TEC Professional Services Questionnaire

N. continued.

CRITERIA 2 • CAPACITY FOR TIMELY COMPLETION OF NEWLY-ASSIGNED WORK

BFM Corporation has the manpower and equipment to execute any surveying task within the reasonable time set forth by the contract or project engineer. It is our continual goal to keep this reputation solid. We establish base costs and fees for our services, and work with our clients to meet all project budgets. Our workload and scheduling, and proximity to the project site, will allow for quick assignment of personnel to any directed project.

BFM Corporation's **Ralph P. Fontcuberta, Jr., PLS**, is a **Louisiana-Registered Professional Land Surveyor (since 1974)** and meets or exceeds any minimum requirements for any surveying project. He has been **providing surveying services in Louisiana for over 50 years** and brings an almost incalculable wealth of experience in the region to any project, especially in Southeast Louisiana.

BFM's **Chad M. Poché, P.E.** brings **more than 25 years of experience** to assist in completing projects on time and within budget. He has been a consulting geotechnical engineer for more than 20 years in South Louisiana and has been the geotechnical engineer of record for thousands of projects throughout his career.

Our personnel included **multiple survey crews** and a **fully-staffed drafting department** to handle any project needs; they are thoroughly trained and extensively familiar with the region and needs of various types of surveying projects.

CRITERIA 3 • LOCATION OF PRINCIPAL OFFICE

BFM has called **Jefferson Parish home office location since the firm's inception in 1982**; our principal office is located in Jefferson Parish at **15 Veterans Memorial Boulevard** in Kenner.

CRITERIA 4 • ADVERSARIAL LEGAL PROCEEDINGS WITH PARISH

BFM Corporation is **not involved in litigation with Jefferson Parish** nor with any of our clients, as is noted in *Item M* of this form.

CRITERIA 5 • PRIOR SUCCESSFUL COMPLETION OF PROJECTS

For nearly 40 years, BFM Corporation has completed thousands of projects throughout Jefferson Parish and Southeast Louisiana, both to municipal and various private clients, similar to the project at hand, not to mention other drainage projects in a wide range of sizes, from small lot to Parish-wide endeavors. **Multiple examples of this work are included throughout this form in both the Personnel Résumés section (Item K) and Representative Project Work (Item L).** Further, BFM has worked with virtually every municipality in the region. We enjoy a high repeat-business rate with all our clients. We offer the following specific references for contact:

- **Mark R. Drewes, P.E.**, Director, Jefferson Parish Public Works Department (504-736-6783 | JPPW@jeffparish.net)
- **Neil Schneider, CCM, P.E.**, Director, Capital Projects, Jefferson Parish Public Works Department (504-736-6783 | JPPW@jeffparish.net)

TEC Professional Services Questionnaire

N. continued.

- **Angela DeSoto, P.E.**, Director of Engineering, Jefferson Parish (504-736-6511 | ADeSoto@jeffparish.net)
- **Sid Trouard, P.E.**, Program Manager, Jefferson Parish Sewerage Capital Improvement Program (504-736-6386 | STrouard@jeffparish.net)
- **Tom Schreiner**, Deputy CAO, Public Works & Capital Projects, City of Kenner (504-468-7515 | tschreiner@kenner.la.us)
- **Greg Cromer**, Mayor, City of Slidell (985-646-4333 | gcromer@cityofslidell.org)

Our professional work history is exemplary. We strive to provide on-time and technically thorough project deliverables at the budget set by our clients.

CRITERIA 6 • SIZE OF FIRM

As noted, BFM has the manpower and equipment to execute any surveying task within the reasonable time set forth by the contract or project engineer. BFM has no issue with meeting the project deadlines set forth by our clients, both municipal and private. It is our continual goal to keep this reputation solid. Further, we establish base costs and fees for our services, and work with our clients to meet all project budgets.

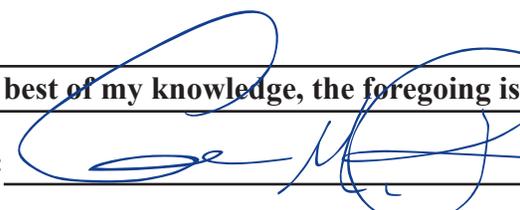
As noted in **item E of this form**, BFM currently has a **full time staff of two dozen people**, including **two Registered Professional Land Surveyors, Survey Field Crew Personnel, and AutoCAD drafting personnel**, as well as **complete administrative and support staff**.

CRITERIA 7 • PAST PERFORMANCE ON PARISH CONTRACTS

BFM has provided surveying services in **Jefferson Parish since 1982**, both **directly to Parish agencies and as a consultant to firms serving the Parish**. The firm has executed many hundreds of projects in the Parish, including both direct Parish projects and agency projects (CPRA, Louisiana DOTD, etc.), not to mention the scores of surveying projects for private individuals and industry.

As noted, Mr. Fontcuberta has **over half a century of professional land surveying experience**, including nearly 40 years with BFM. He has provided professional surveying services for **thousands of projects for and throughout Jefferson Parish**. Additional information beyond the scope of this RFQ response is available upon request.

O. To the best of my knowledge, the foregoing is an accurate statement of facts.

Signature:  Print Name: Chad M. Poché, P.E.
Title: Executive Vice President Date: March 14, 2022

The Louisiana Professional Engineering and Land Surveying Board has the following information on file:

Name: BFM Corporation, LLC
Public Address: 15 Veterans Memorial Boulevard
 Kenner, Louisiana 70062

License/Certificate Information w/ Supervision

License	Status	First Issuance Date	Expiration Date	Supervisor(s)
VF.0000008	Active	09/11/1984	09/30/2023	Mr. Ralph P. Fontcuberta Jr. # PLS.0004329 - Active



LOUISIANA PROFESSIONAL
ENGINEERING & LAND SURVEYING BOARD
(LAPELS)
9643 Brookline Avenue, Suite 121
Baton Rouge, LA 70809
Phone (225) 925-6291
www.lapels.com

Mr. Ralph P. Fontcuberta Jr.

License/Certificate Type - Number Expiration Date
 PLS.0004329 09/30/2022

Status: **Active**



LOUISIANA PROFESSIONAL
ENGINEERING & LAND SURVEYING BOARD
(LAPELS)
9643 Brookline Avenue, Suite 121
Baton Rouge, LA 70809
Phone (225) 925-6291
www.lapels.com

Mr. Chad Mitchell Poche

License/Certificate Type - Number Expiration Date
 PE.0027667 09/30/2022

Status: **Active**



LOUISIANA PROFESSIONAL
ENGINEERING & LAND SURVEYING BOARD
(LAPELS)
9643 Brookline Avenue, Suite 121
Baton Rouge, LA 70809
Phone (225) 925-6291
www.lapels.com

Mr. Gary James Lambert Jr.

License/Certificate Type - Number Expiration Date
 PLS.0005259 03/31/2023

Status: **Active**



Division of Small and Emerging Business Development
SEBD CERTIFICATION

BFM CORPORATION, LLC

is hereby certified as a Small and Emerging Business Enterprise.

This certification is valid beginning 7/19/2019 and supersedes any registration or listing previously issued. At any time there is a change in ownership or control of the firm, notification must be made immediately to the Division of Small and Emerging Business Development.

Issued at Baton Rouge, Louisiana 7/19/2019

This certification expires on: 7/19/2029

Certification No. 9551

John W. Matthews, Jr.,
Executive Director, Entrepreneurial Services



DIVISION OF SMALL BUSINESS SERVICES

This certification acknowledges that

BFM CORPORATION, LLC

is Certified-Active as a Small Entrepreneurship with Louisiana Economic Development's Hudson Initiative.

This certification is valid from 9/28/2021 to 9/28/2022 .

Certification No. 9551

Stephanie Hartman,
Director, Small Business Services

Eustis Engineering, Inc.
Geotechnical Services

TEC Professional Services Questionnaire

A. Project Name and Advertisement Resolution Number:

SOQ 22-013, Resolution No. 138809
Routine Engineering Services for Water Projects

B. Firm Name & Address:

Eustis Engineering L.L.C.

3011 28th Street, Metairie, Louisiana 70002

C. Name, title and contact information of Principal, as defined in Section 2-926 of the Jefferson Parish Code of Ordinances, who is a registered, licensed architect, professional engineer, or surveyor in the State of Louisiana:

Gwendolyn P. Sanders, P.E. / President / 504-834-0157 / gsanders@eustiseng.com

D. Name and contact information of employee who is a registered and licensed architect, professional engineer, or surveyor in the State of Louisiana in the applicable discipline. A subcontractor may be substituted here only if the advertised Project requires more than one discipline.

Gwendolyn P. Sanders, P.E. / President / 504-834-0157 / gsanders@eustiseng.com

E. Please provide the number of employees whose primary function corresponds with each category:

<u>10</u> Administrative	<u> </u> Estimators	<u> </u> Specification Writers
<u> </u> Architects (Licensed)	<u> 2 </u> Geologists	<u> </u> Structural Engineers
<u> </u> Chemical Engineers	<u> 15 </u> Geotechnical Engineers	<u> 1 </u> Graduate Engineers
<u> </u> Civil Engineers	<u> </u> Interior Designers	<u> </u> Project Managers
<u> </u> Construction Inspectors	<u> </u> Landscape Architects	<u> 6 </u> Clerical
<u> </u> Ecologists	<u> </u> Land Surveyor	<u> </u> Grant/Funding Specialist
<u> </u> Electrical Engineers	<u> </u> Mechanical Engineers	<u> </u> Sanitary Engineers
<u> 3 </u> Engineer Intern	<u> </u> Environmental Engineers	<u> 41 </u> Other
<u> </u> Professional Land Surveyors		<u> 78 </u> TOTAL

F. Is this submittal is a JOINT-VENTURE? Please check: YES NO

If marked “No,” skip to Section I. If marked “Yes,” complete Sections G-H.

TEC Professional Services Questionnaire

G. If submittal is by JOINT-VENTURE, list the firms participating and outline specific areas of responsibility (including administrative, technical, and financial) for each firm. Please attach additional pages if necessary.

1. Not applicable.

2.

H Has this JOINT-VENTURE previously worked together: Please check:

YES NO

I. List all subcontractors anticipated for this Project. Please note that all subcontractors must submit a fully completed copy of this questionnaire, applicable licenses, and any other information required by the advertisement. See Jefferson Parish Code of Ordinances, Sec. 2-928(a)(3). Please attach additional pages if necessary.

Name & Address:	Specialty:	Worked with Firm Before (Yes or No):
1. Not Applicable.		
2.		
3.		

J. Please specify the total number of support personnel that may assist in the completion of this Project:

We estimate **16** individuals will be needed to complete the geotechnical services associated with projects under this advertisement. This includes a three-member drill crew as well as laboratory, clerical, and engineering staff. More employees can be added, as necessary, to complete any project.

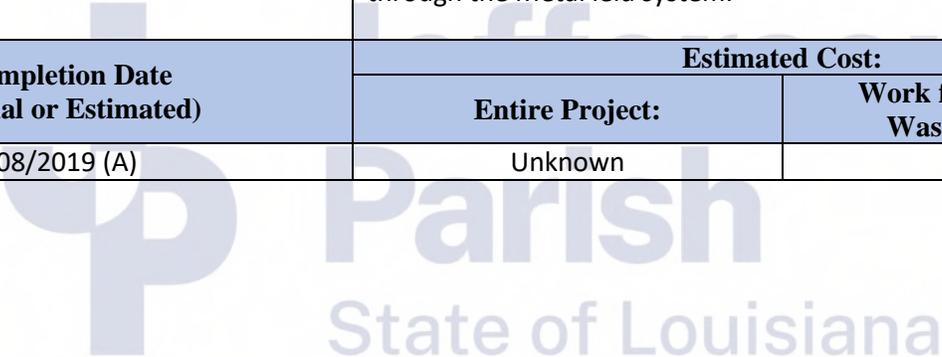
PROJECT NO. 01

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> Jefferson Parish Department of Public Works Proposed Pump Station West Esplanade at the 17th Street Canal Jefferson Parish, Louisiana Eustis Engineering Project No. 24427 </p> <p align="center"> Contact Information: Jefferson Parish Through ECM Consultants, Inc. Suite 200 1301 Clearview Parkway Metairie, Louisiana 70001 Sunina Shrestha, P.E. @ 504-885-4080 </p>	<p>Jefferson Parish proposed a pump station at the intersection of the 17th Street Canal and West Esplanade Avenue in Metairie, Louisiana. The pump station would be built on the west bank of the canal.</p> <p>The pump station was planned to have approximate dimensions of 50' x 36' with a sump depth of approximately 18 feet. A new 78" x 122" arch-shaped reinforced concrete pipe would feed collected drainage water to the pump station. A new generator pad with approximate plan dimensions of 16' x 37' would be located south and west of the pump station.</p> <p>Discharge pipes, 32 inches in diameter, would be installed from the pump station, extending over the levee and floodwall to discharge storm water from the pump station into the 17th Street Canal. The discharge pipes were to be pile-supported on the land and flood sides of the levee and floodwall.</p> <p>Eustis Engineering performed engineering analyses based on data obtained from previous subsurface explorations at the site supplemented by those in the project area.</p> <p>The scope of service of this project included compiling and updating geotechnical analyses from previous reports that were still applicable to the pump station plans. These previous analyses included deep-seated global stability analyses, seepage potential evaluation, and estimates of pile load capacities for various types and sizes of piles.</p> <p>We performed supplemental deep-seated global stability analyses to provide an alternate analysis. We also furnished supporting documentation for temporary retaining structure design and seepage and heave analyses. Finally, we generated recommendations for general site preparation and foundation construction procedures.</p>	
<p align="center">Completion Date (Actual or Estimated)</p>	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
<p align="center">09/2021 (E)</p>	<p align="center">Unknown</p>	<p align="center">\$25,500</p>

PROJECT NO. 02

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> Jefferson Parish Veterans Boulevard North and South Pump Stations Jefferson Parish, Louisiana Eustis Engineering Project Nos. 23396, 23396.01, and 24426 </p> <p> Contact Information: Jefferson Parish Through ECM Consultants, Inc. Suite 200 1301 Clearview Parkway Metairie, Louisiana 70001 Sunina Shrestha, P.E. @ 504-885-4080 </p>	<p>Two new drainage pump stations are proposed on the northern and southern sides of Veterans Memorial Boulevard at the 17th Street Canal. Each of these pump stations will discharge into the 17th Street Canal. Because of a planned bike path along the hurricane protection floodwall, these discharge pipes will need to penetrate the flood protection. As a result, plans called for the replacement of portions of the existing West 17th Street Canal I-walls (which cannot be penetrated and still comply with the U.S. Army Corps of Engineers' (USACE) guidelines) with T-walls. Both pump stations would require demolition of approximately 20 feet of existing concrete I-wall for installation of the new T-wall to accommodate a discharge pipe through each wall. Access gates will also be provided as part of the floodwall modifications.</p> <p>Because of these modifications to the flood protection, a safety assurance review (SAR) was conducted by an independent reviewer. The SAR included a review of the plans and specifications, and design reports and calculations. Comments from the SAR were incorporated into the permit package submitted to the review agencies. The project plans have civil, structural, mechanical, and electrical components.</p> <p>For additional data at the site, Eustis Engineering used soil boring and laboratory test data contained in our own files from prior explorations as well as data obtained through a Freedom of Information of Act request to the USACE.</p> <p>Engineering analyses for the evaluation of the proposed T-wall followed the USACE's <u>Hurricane and Storm Damage Risk Reduction System Design Guidelines</u> dated June 2012. Global and local stability analyses were performed to evaluate the design and construction of the T-wall, including temporary flood protection and temporary retaining structures. Stability analyses were also performed to address construction dewatering requirements for the pump station excavation with respect to the existing and proposed flood protection.</p> <p>Our work included estimates of allowable axial pile load capacities for piles supporting the T-wall foundations as well as the pump station and discharge pipes. We also performed analyses to evaluate the potential for seepage and heave during and after construction for the proposed features. New generator pads were located adjacent to each pump station to house controls outside the new intake excavation.</p>	
<p align="center"> Completion Date (Actual or Estimated) </p>	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
<p align="center">11/2021 (A)</p>	<p align="center">Unknown</p>	<p align="center">\$53,400</p>

PROJECT NO. 03		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Jefferson Parish Concrete Testing for Pump Station Transcontinental Drive and West Metairie Road Metairie, Louisiana Eustis Engineering Project No. 24164</p> <p>Contact Information: Jefferson Parish Through BLD Services, LLC 2424 Tyler Street Kenner, Louisiana 70062 Brent Albert @ 504-466-1344</p>	<p>This project was performed under Eustis Engineering's contract with Jefferson Parish to provide laboratory services for inspection of materials and equipment on an as-needed basis. When our services were requested at the pump station at Transcontinental Drive and West Metairie Road, we had someone on site the very next day.</p> <p>As part of our quality control and testing services, Eustis Engineering's ACI certified technicians recorded each mix design used at the project site, recorded the amount of water or additives added to the mixes, performed slump testing for each batch of concrete, determined the air content for each sample, sampled the concrete at intervals stated in the plans, and performed compression testing on collected specimens at intervals of 7 and 28 days.</p> <p>Due to the site's close proximity to our Metairie office, we logged fewer than 25 hours to complete these services. After our quality control review of reports by an engineer, the results were submitted through the MetaField system.</p>	
Completion Date (Actual or Estimated)	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
08/2019 (A)	Unknown	\$920



PROJECT NO. 04

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> Jefferson Parish Jung and Falcone Lift Station Upgrades (K-11-3) New Sanitary Lift Station Marrero, Louisiana Eustis Engineering Project No. 23819 </p> <p align="center"> Contact Information: Jefferson Parish Through Principal Engineering, Inc. Suite 19 1011 North Causeway Boulevard Mandeville, Louisiana 70471 Jeneva Hinojosa, E.I. @ 985-624-5001 </p>	<p>The new lift station was to consist of a fiberglass wet well and fiberglass valve pit. The wet well was to be approximately 6 feet in diameter and 18 feet in depth. The valve pit was to be approximately 6 feet in diameter and 8 feet in depth. Site improvements were to include a gravity sewer line installed approximately 12 feet below grade and a force main approximately 4 feet below grade.</p> <p>Our field investigation included the drilling of one soil boring to a depth of 80 feet below the existing ground surface using one of our truck-mounted rigs. Once in our laboratory, samples selected by our engineering staff were subjected to soil mechanics laboratory tests including visual classification, natural water content, unit weight, unconfined compression shear, and one-point unconsolidated undrained triaxial compression shear.</p> <p>Using these data, our staff performed engineering analyses and developed recommendations for the project documented in a report including:</p> <ul style="list-style-type: none"> • recommendations for site preparation encompassing temporary and permanent drainage, dewatering and pressure relief of excavations, and ways to limit lateral movement; • methods for excavation, base preparation, and bedding associated with the sanitary gravity sewer line, wet well, and valve box; • estimates of lateral earth pressures; • recommendations for material placement and compaction of backfill for the force main and sanitary sewer line; • allowable soil bearing value recommendations for the wet well and valve box; • allowable pile load capacities, in compression and tension, for treated ASTM D25 quality timber; and • settlement estimates for both ground-supported and pile-supported project features. 	
<p align="center">Completion Date (Actual or Estimated)</p>	<p align="center">Estimated Cost:</p>	
<p align="center">06/2018 (A)</p>	<p align="center">Entire Project:</p> <p align="center">Unknown</p>	<p align="center">Work for Which Firm Was Responsible:</p> <p align="center">\$4,900</p>

PROJECT NO. 05

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> Jefferson Parish Lift Station G8-2 Tolmas Drive and West Esplanade Avenue Metairie, Louisiana Eustis Engineering Project No. 22583 </p> <p align="center"> Contact Information: Barowka & Bonura Engineers & Consultants, LLC 209 Canal Street Metairie, Louisiana 70005 Jeffrey Bonura @ 504-828-0030 </p>	<p>Jefferson Parish planned to improve Lift Station G8-2 by installing a 12' x 12' valve pit 10 feet below the existing ground surface. To determine subsoil conditions and stratifications at the site, Eustis Engineering drilled one undisturbed soil boring to a depth of 80 feet below the existing ground surface using a truck-mounted, rotary-type drill rig. Cohesive or semi-cohesive subsoils were sampled at close intervals or changes in stratum using a 3-in. thinwall Shelby tube sampling barrel. Once the samples were extracted from the borehole, pocket penetrometer tests were performed on the trimmed ends of the extruded samples to provide a general indication of the soil's shear strength or consistency.</p> <p>Our laboratory technicians performed soil mechanics laboratory tests consisting of natural water content, unit weight, and unconfined compression shear on undisturbed samples obtained from the boring.</p> <p>Based on the soil boring and soil mechanics laboratory tests, Eustis Engineering developed recommendations for site preparation, excavation and dewatering, lateral earthen pressures, bedding and backfill, estimated allowable soil bearing values for mat foundations, estimates of allowable pile load capacities, estimates of settlement, and general foundation construction procedures.</p> <p>More specifically, engineering analyses included:</p> <ul style="list-style-type: none"> • recommendations regarding stability of the structure against hydrostatic uplift; • base preparation recommendations for the valve pit foundation including the use of geotextiles, bedding requirements, and structural fill requirements; • allowable soil bearing values for the valve pit's mat foundation; • allowable load capacities, in compression and tension, for various sizes of treated ASTM D25 quality timber piles to support the proposed valve pit; • estimates of settlement and differential settlement for both mat and timber pile foundations; • excavation and dewatering recommendations associated with construction; and • effects of areal subsidence on the project. 	
<p align="center">Completion Date (Actual or Estimated)</p>	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
<p align="center">08/2014 (A)</p>	<p align="center">Unknown</p>	<p align="center">\$4,100</p>

PROJECT NO. 06

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> Jefferson Parish Design and Construction of Improvements to Causeway Boulevard and West Esplanade Avenue North and South Sewer Pump Stations Metairie, Louisiana Eustis Engineering Project No. 22448 </p> <p align="center"> Contact Information: Jefferson Parish Through ECM Consultants, Inc. 4409 Utica Street Suite 200 Metairie, Louisiana 70006 Chris Maniscalco @ 504-885-4080 </p>	<p>Jefferson Parish planned to make improvements to the existing north and south sewer pump stations near the intersection of Causeway Boulevard and West Esplanade Avenue. Horizontal directional drilling technology would be used to install the proposed 8- and 12-in. diameter sewer pipes. The ground surface at the site was at approximate el -5. Soil bearing values were requested for the lift station planned at approximate el -22, a valve box at el -10, and manholes at approximate el -20. Recommendations for a sheetpile cofferdam were requested where the directional drilling would terminate at the Causeway Boulevard/West Esplanade intersection.</p> <p>One of Eustis Engineering's in-house drill crews traversed the short distance to the site to perform the field exploration developed by our engineering team. Three soil borings were made for the project to depths of 25, 50, and 75 feet below the existing ground surface considering the component feature depths and locations. Boring location coordinates were obtained using a handheld GPS unit. Samples of the subsoils retained from our drilling operations were transported to our accredited Metairie laboratory for testing. Once in our laboratory, classification, index, and strength tests were performed on the undisturbed samples to inform the soil design parameter selection.</p> <p>We developed geotechnical engineering recommendations for lateral earth pressures; bedding material and compaction requirements including the use of geotextiles as a material separator; and structural fill (material, placement and compaction recommendations) when used as backfill between the side walls of the buried structure and the temporary sheetpile cofferdam. Our design analyses resulted in estimates of allowable soil bearing values for the lift station and valve box mat foundations as well as estimates of settlement and differential settlement for these features. We also addressed the use of a temporary retaining structure; excavation, dewatering, and groundwater control operations; and ways to minimize lateral movement and settlement of the adjacent ground surface.</p>	
<p align="center">Completion Date (Actual or Estimated)</p>	Estimated Cost:	
	<p align="center">Entire Project:</p>	<p align="center">Work for Which Firm Was Responsible:</p>
<p align="center">02/2015 (A)</p>	<p align="center">Unknown</p>	<p align="center">\$7,200</p>

PROJECT NO. 07

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> City of Kenner Lift Station No. 4102 Airline Highway and Minden Avenue Jefferson Parish, Louisiana Eustis Engineering Project No. 22317 </p> <p align="center"> Contact Information: City of Kenner Through Hartman Engineering, Inc. Suite 300 527 West Esplanade Avenue Kenner, Louisiana 70065 Priyo Majumdar @ 504-466-5667 </p>	<p>The City of Kenner planned to renovate the existing Sewer Lift Station No. 4102. The renovation involved adding a buried valve pit adjacent to the existing lift station. The valve pit was to be 8 to 10 feet in diameter and placed 6 feet below the existing ground surface. A small cofferdam was considered for construction. Eustis Engineering was retained to perform professional geotechnical services consisting of field, laboratory, and engineering services.</p> <p>In the field, Eustis Engineering drilled one undisturbed soil boring to a depth of 60 feet to determine subsoil conditions and stratification at the project site. The drill crew also made one auger boring to a depth of 12 feet below the existing grade to measure groundwater conditions at the time of the exploration. For the undisturbed boring only, team members obtained samples of cohesive or semi-cohesive subsoils at close intervals or changes in stratum using a 3-in. diameter thinwall Shelby tube sampling barrel. The samples were extruded, inspected, and visually classified in the field. Our soil technician performed pocket penetrometer tests on the samples to give a general indication of the soil's shear strength and consistency. Samples were placed in moistureproof containers to preserve their natural water content prior to laboratory testing.</p> <p>Our laboratory technicians performed soil mechanics laboratory tests on these samples to evaluate the physical properties of the various substrata.</p> <p>Engineering analyses, based on the undisturbed soil boring and soil mechanics laboratory test results, were used to develop recommendations regarding:</p> <ul style="list-style-type: none"> • site preparation including drainage, trenching and excavations, dewatering and pressure relief, and lateral movement and settlement of the adjacent ground surface; • bottom preparation including bedding, the use of geotextile fabric, and the effects of uplift pressure during/after construction; • estimated gross and net allowable soil bearing values for the valve pit's mat foundation; • allowable pile load capacities, in compression and tension, for treated timber piles; • estimates of settlement; and • general construction recommendations. 	
<p align="center">Completion Date (Actual or Estimated)</p>	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
10/2013 (A)	Unknown	\$3,200

PROJECT NO. 08

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> City of Kenner Sewer Capital Improvement Program Sewage Pumping Station Upgrade 31st Street and Jasper Street Lift Station Kenner, Louisiana Eustis Engineering Project Nos. 21834 and 22559 </p> <p> Contact Information: City of Kenner Department of Public Works Through Design Engineering, Inc. Suite 205 3330 West Esplanade Avenue Metairie, Louisiana 70002 John Holtgreve @ 504-836-2155 </p>	<p>Construction was to consist of a new wet well 20 to 25 feet below the existing ground surface, a valve pit 6 to 8 feet below the existing ground surface, and an electrical panel at the ground surface. The wet well and valve pit would each have a 12' x 12' pad. The electrical panel would have a 2' x 5' pad. Both shallow foundation systems and treated timber piles were being considered for support of the project features.</p> <p>Eustis Engineering conducted one undisturbed soil test boring at the site. The boring was drilled to a depth of 80 feet below the existing ground surface to provide sufficient information for the evaluation of piles and sheetpiles. Our laboratory technicians performed tests on samples obtained from the boring at the direction of our engineers in order to evaluate the physical properties of the various substrata.</p> <p>Engineering analyses, based on the soil boring and laboratory test results, were made to determine recommendations regarding site preparation and drainage, pipe bedding, estimates of allowable soil bearing values, estimates of allowable load capacities for timber piles, estimates of settlement, a temporary restraining system, and foundation construction procedures as well as recommendations for rigid and flexible pavements. Eustis Engineering also provided construction materials testing services for this project. Those services included:</p> <ul style="list-style-type: none"> • soil mechanics laboratory tests including moisture content, Atterberg limits, mechanical analysis, and standard Proctor; • inplace density tests on sand, limestone, and crushed concrete for use as structural backfill, bedding, and base course; • visual and physical inspection of more than 1,620 feet of timber piles; • pile logging during installation; • performance of vibration and acoustical monitoring during pile installation; • review of asphalt and concrete mix designs intended for use on the project; • visual and physical inspection of concrete placed for the lift station slab, seal slab, foundation slab, skid foundation, tank bottom, manhole, electrical pad, sidewalk, and roadway; • compressive strength tests on concrete cylinders made during the above inspection; and • the coring and inspection of asphalt. <p>Our engineers performed quality reviews of these inspection reports prior to issuing the results.</p>	
<p align="center">Completion Date (Actual or Estimated)</p> <p align="center">04/2015 (A)</p>	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
	<p align="center">Unknown</p>	<p align="center">\$19,300</p>

PROJECT NO. 09

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> Jefferson Parish Bonnabel Canal Pamona Street to Nero Street Metairie, Louisiana Eustis Engineering Project No. 23387 </p> <p align="center"> Contact Information: Jefferson Parish Through BCG Engineering & Consulting, Inc. 3012 26th Street Metairie, Louisiana 70002 Ann Springston, P.E. @ 504-454-3866 </p>	<p>BCG Engineering & Consulting, Inc. (BCG) requested Eustis Engineering's consultation in finalizing the plans and providing support during construction of the proposed Bonnabel Canal east bank stabilization features. The construction planned for an approximate 1,600-ft stretch of the project that would extend from Pomona Street to Nero Street in Metairie, Louisiana. The furnished plans showed a 35-ft AZ26 sheetpile with a top at el 8 and a tip at el -27.</p> <p>Prior to these final design/construction phase services, Eustis Engineering had performed several geotechnical explorations for the project that were used as the basis of our updated design services. The most recent study was published in our report entitled "Geotechnical Investigation, Jefferson Parish, Bonnabel Canal, South of Veterans Boulevard to West Esplanade Avenue, Metairie, Louisiana, Eustis Engineering Project No. 20438," dated 20 November 2009.</p> <p>Using the available data, Eustis Engineering performed local stability analyses of the new sheetpile wall configuration using CWALSHT to confirm that the proposed sheetpile tip embedment was sufficient.</p> <p>Additionally, we evaluated deep-seated global stability for the cantilever sheetpile wall using the Spencer's Method of Slices for non-circular and circular failures (with optimization search routines) with the software SLOPE/W, Version 8.16, GEOSLOPE International Ltd. These analyses also confirmed the proposed configuration was stable. Thus, the plans being developed could be finalized to provide for improved drainage within the tight construction corridor.</p>	
<p align="center">Completion Date (Actual or Estimated)</p>	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
<p align="center">11/2017 (A)</p>	<p align="center">Unknown</p>	<p align="center">\$3,700</p>

PROJECT NO. 10

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> Lafourche Parish Government Butch Hill Pump Station Lafourche Parish, Louisiana Eustis Engineering Project No. 24723 </p> <p align="center"> Contact Information: Lafourche Parish Government Through GIS Engineering, L.L.C. Suite 600 935 Gravier Street New Orleans, Louisiana 70112 Augustin Rega, P.E. @ 504-364-4784 x 350 </p>	<p>The Lafourche Parish Government wishes to increase capacity at the existing Butch Hill Pump Station. This involves the removal of the existing station to introduce the new station. An existing vehicular bridge spanning the existing discharge pipes will be replaced during the construction of the new station. The intake channel may also be increased in width to provide greater flow into the new station. The new pump station may be located east of the existing pump station to allow for continued use of the old pump station during construction. This will require excavation and realignment of the intake drainage canal to support the updated design layout.</p> <p>Eustis Engineering is slated to perform explorations and geotechnical engineering recommendations associated with this project. We anticipate performing one soil boring to a depth of 150 feet and three cone penetration tests (CPTs) to depths of 150 feet.</p> <p>Soils mechanics laboratory tests to be performed on samples from the boring include natural water content, unconfined compression shear, unconsolidated undrained triaxial compression shear, and Atterberg liquid and plastic limits. The test assignments will be directed by our engineers to aid in the development of the soil design parameters.</p> <p>Engineering analyses will include; estimates of lateral earth pressure coefficients, estimates of allowable soil bearing values for the future equipment pad; estimates of allowable load capacity for various types and sizes of timber piles, square precast concrete piles, and steep pipe piles; estimates of settlement for foundation piles for both the pump station and the future discharge pipe foundations; estimates of subgrade moduli; estimates of p-y, t-z, and Q-t soil values; deep-seated stability analyses of the drainage canal side slopes; seepage/heave analyses; settlement analyses; slope stability analyses of the side slope including the design of slope stabilization; local stability analyses of the pump station headwall and intake walls; and deep-seated stability analyses of the pump station and intake walls.</p>	
<p align="center">Completion Date (Actual or Estimated)</p>	<p align="center">Estimated Cost:</p>	
<p align="center">04/2022 (E)</p>	<p align="center">Entire Project:</p> <p align="center">Unknown</p>	<p align="center">Work for Which Firm Was Responsible:</p> <p align="center">\$48,500</p>

TEC Professional Services Questionnaire

K. List the professional in charge, key persons, specialists, and individual consultants anticipated for this Project and provide their relevant information below. If necessary, please attach additional documentation (i.e., resume) that demonstrates the employment history and experience of the Firm’s key persons that may assist in the completion of this Project. Please attach additional pages if necessary.

PROFESSIONAL IN CHARGE OF PROJECT:

Name & Title:

Gwendolyn P. Sanders, P.E. / President and Project Principal

Project Assignment:

Project Principal / Limited Liability Corporation Member

Name of Firm with which Associated:

Eustis Engineering L.L.C.

Years’ Experience with This Firm:

29

Education: Degree(s)/Year/Specialization:

Master of Science / 1992 / Civil Engineering
 Bachelor of Science / 1990 / Civil Engineering

Active Registration: Year First Registered/Discipline:

Louisiana: 1997 / Civil Engineering
 Mississippi: 2003 / Engineering
 Texas: 2020 / Civil Engineering

Other Experience and Qualifications Relevant to the Proposed Project:

Mrs. Sanders began her professional career with Eustis Engineering in 1993. Over the past 29 years, she has worked her way up through the ranks of the engineering department including Associate Engineer, Project Engineer, Project Manager, and Engineering Manager. She has been on Eustis Engineering’s Board of Directors since 1997. In 2020, Mrs. Sanders became Eustis Engineering’s first woman president after previously serving as a vice president and executive vice president. As President, she is responsible for day-to-day business operations including quality, safety, marketing, and long-term strategic growth. She also still actively participates in the engineering design and review processes.

Considering her experience with Eustis Engineering, a leading Gulf Coast geotechnical firm, Mrs. Sanders has extensive experience in soft soils and working on projects in coastal Louisiana. She has been directly and indirectly involved in numerous projects throughout the Gulf Coast region, particularly in the Greater New Orleans area. Mrs. Sanders has been involved in and managed every aspect of a geotechnical engineering project, namely developing appropriate scopes of work for projects, planning and coordinating the field investigation, assigning laboratory testing, performing geotechnical engineering analyses, preparing detailed reports with engineering analyses and recommendations, reviewing reports prepared by other professionals, and consulting with clients. Much of her work experience consists of identifying soil properties, developing criteria for design of foundations, and determining an appropriate foundation to support the structure under consideration.

In 2017, Mrs. Sanders served as Program Advisor for the Deep Foundations Institute’s 42nd annual conference. She has twice been named one of the 50 Women of the Year by New Orleans CityBusiness, first in 2017 and again in 2021. She is currently serving as an associate member of the ASCE Standards Committee for the Design of Foundations. She has a keen eye for detail and is a stickler for quality. Her work ethic, combined with her communication skills, translate to Mrs. Sanders’ ability to deliver successful geotechnical engineering projects to her clients.

K. List the professional in charge, key persons, specialists, and individual consultants anticipated for this Project and provide their relevant information below. If necessary, please attach additional documentation (i.e., resume) that demonstrates the employment history and experience of the Firm's key persons that may assist in the completion of this Project. Please attach additional pages if necessary.

PROFESSIONAL IN CHARGE OF PROJECT:

Name & Title:

Gwendolyn P. Sanders, P.E. / President and Project Principal

Over the years, Mrs. Sanders has been involved with more than 2,800 projects in some capacity, including the following contained within this submittal:

- Jefferson Parish Department of Public Works - Proposed Pump Station, West Esplanade at the 17th Street Canal, Jefferson Parish, Louisiana
- Jefferson Parish - Veterans Boulevard, North and South Pump Stations, Jefferson Parish, Louisiana
- Jefferson Parish - Lift Station G8-2, Tolmas Drive and West Esplanade Avenue, Metairie, Louisiana
- Jefferson Parish - Design and Construction of Improvements to Jefferson Parish, Causeway Boulevard and West Esplanade Avenue, North and South Sewer Pump Stations, Metairie, Louisiana
- Jefferson Parish - Bonnabel Canal, Pomona Street to Nero Street, Metairie, Louisiana



TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
James J. Hance, P.E. / Senior Project Manager and Vice President (Finance)
Project Assignment:
Engineering Manager / Limited Liability Corporation Member
Name of Firm with which Associated:
Eustis Engineering L.L.C.
Years' Experience with This Firm:
19
Education: Degree(s)/Year/Specialization:
Master of Business Administration / 2011 / Business Administration Master of Science / 2003 / Civil Engineering (Geotechnical) Bachelor of Science / 1998 / Civil Engineering
Active Registration: Year First Registered/Discipline:
Louisiana: 2004 / Civil Engineering Mississippi: 2012 / Engineering Texas: 2010 / Civil Engineering
Other Experience and Qualifications Relevant to the Proposed Project:
<p>For three years, Mr. Hance was a Staff Engineer and Assistant Project Manager on numerous design and construction phase projects in the Washington D.C. metropolitan area. His duties included management of field technicians who performed concrete, asphalt, and soils testing; and foundation construction observations of spread footings, mats, drilled shafts, augercast piles, driven steel H-piles, tiebacks, and underpinning piers.</p> <p>After relocating to Austin, Texas, to eventually pursue graduate studies in engineering, Mr. Hance acted as an assistant project engineer for several design phase projects. These projects involved retention and stream bank stabilization applications. The types of systems designed included mechanically stabilized earth (MSE); single and multi-tiered walls and slopes utilizing geogrid reinforcement; and the use of geosynthetic materials in engineering applications such as erosion control solutions for open channel flow conditions.</p> <p>Mr. Hance was a graduate research assistant at the University of Texas at Austin where he published his Master's thesis in association with a Master of Science in Civil Engineering degree: <i>Assessment of Seafloor Slope Stability Based on a Database of Published Submarine Slope Failures</i>.</p> <p>Mr. Hance has spent the past 19 years with Eustis Engineering and has worked on many projects for Jefferson Parish. During his tenure at Eustis Engineering, he has earned four promotions: Project Engineer (July 2004), Project Manager (November 2007), Vice President (August 2011), and Chief Financial Officer (August 2012). Mr. Hance manages geotechnical services associated with commercial, industrial, environmental, and civil works projects. His responsibilities include managing a wide variety of design and construction phase projects (public and private sectors), management of staff engineers and development of their skill assets, developing scopes of work and appropriate fees</p>

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

James J. Hance, P.E. / Senior Project Manager and Vice President (Finance)

for new projects with clients, participating in business development and marketing ventures, and negotiating contracts. Some of his experience relative to this submittal includes the following:

- Jefferson Parish - Jung and Falcone Lift Station Upgrades (K-11-3), New Sanitary Sewer Lift Station, Marrero, Louisiana



TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Benjamin M. Cody, P.E. / Principal Engineer
Project Assignment:
Project Manager / Limited Liability Corporation Member
Name of Firm with which Associated:
Eustis Engineering L.L.C.
Years' Experience with This Firm:
21
Education: Degree(s)/Year/Specialization:
Master of Science / 1999 / Civil Engineering Bachelor of Science / 1996 / Civil Engineering
Active Registration: Year First Registered/Discipline:
Louisiana: 2002 / Civil Engineering Mississippi: 2007 / Engineering Texas: 2014 / Civil Engineering Florida: 2001 / Engineering Alabama: 2003 / Engineering Arkansas: 2014 / Engineering
Other Experience and Qualifications Relevant to the Proposed Project:
<p>From 1993 to 1994, Mr. Cody first worked with Eustis Engineering as a part-time laboratory soil technician while obtaining his undergraduate degree. After leaving Eustis Engineering in 1994, Mr. Cody worked as an engineering technician with the Sewerage & Water Board of New Orleans and as a student laboratory coordinator at Tulane University's Department of Civil Engineering. Mr. Cody also assisted in teaching the introductory soil mechanics laboratory sessions. For more than a year, he then worked as a graduate research assistant at Tulane University while pursuing his Master's degree. At that time, he was responsible for the design, construction, and implementation of bench scale testing system in contaminated soil remediation.</p> <p>From 1998 until 2001, Mr. Cody worked for engineering firms in Florida. He performed such duties as soil evaluation and engineering recommendations for projects of varying sizes including multi-story structures, bridges, and roadways. He performed Phase I environmental site assessments as well as geotechnical sensor installation.</p> <p>In 2001, he returned to the New Orleans area and to Eustis Engineering as a Project Engineer. He now serves as a Principal Engineer with the firm. Since his return, Mr. Cody has performed a wide variety of engineering services including geotechnical project management, engineering design, engineering during construction, and dynamic pile testing. Private sector projects have varied from small private and commercial structures to multi-story high-rise structures, storage tanks, and other industrial facilities. Public projects have included roads and bridges, port facilities, government buildings and facilities, schools, and hurricane protection system improvements.</p> <p>Some of Mr. Cody's project experience, shown in this submittal, includes the following:</p> <ul style="list-style-type: none">• Jefferson Parish Department of Public Works - Proposed Pump Station, West Esplanade at the 17th Street Canal, Jefferson Parish, Louisiana• Jefferson Parish - Veterans Boulevard, North and South Pump Stations, Jefferson Parish, Louisiana

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Benjamin M. Cody, P.E. / Principal Engineer

- Jefferson Parish - Jung and Falcone Lift Station Upgrades (K-11-3), New Sanitary Sewer Lift Station, Marrero, Louisiana
- City of Kenner - Lift Station No. 4102, Airline Highway and Minden Avenue, Jefferson Parish, Louisiana
- City of Kenner - Sewer Capital Improvement Program, Sewage Pumping Station Upgrade, 31st Street and Jasper Street Lift Station, Jefferson Parish, Louisiana



TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Sean G. Walsh, P.E. / Engineering Manager and Vice President (Engineering)
Project Assignment:
Principal Engineer / Limited Liability Corporation Member
Name of Firm with which Associated:
Eustis Engineering L.L.C.
Years' Experience with This Firm:
10
Education: Degree(s)/Year/Specialization:
Master of Science / 2010 / Civil Engineering Bachelor of Science / 2007 / Civil Engineering
Active Registration: Year First Registered/Discipline:
Louisiana: 2013 / Civil Engineering
Other Experience and Qualifications Relevant to the Proposed Project:
<p>For his first five years after graduation, Sean G. Walsh, P.E., was a Project Engineer on numerous projects in the New York and New Orleans metropolitan areas where he gained experience in civil, geotechnical, and geo-environmental engineering projects for a variety of public and private clients.</p> <p>Since joining Eustis Engineering in 2012 as a Project Engineer, Mr. Walsh has been responsible for developing and managing engineering package preparations (e.g., engineering design and analysis, reporting, development of construction and permit drawings, contract specifications, cost estimates, and design reporting) for a diverse range of design and analysis projects, including deep foundations, excavation support systems, utility foundations, slope stabilization, solid waste closure systems, levee inspection/safety, and seepage modeling.</p> <p>Mr. Walsh was promoted to Project Manager in 2017. Mr. Walsh is also a graduate of the 2017 New Orleans Regional Leadership Institute (NORLI), a one-year training program designed to help shape community leaders.</p> <p>During his employment with Eustis Engineering, Mr. Walsh has provided engineering services on more than 400 projects. Mr. Walsh has risen to the level of Vice President and Engineering Manager, in which he is responsible for personnel resource allocation, the overall engineering schedule, and execution of engineering services. Mr. Walsh also functions as a mentor to the engineering staff.</p> <p>A large portion of Mr. Walsh's experience, before and after joining Eustis Engineering, involved development of design and construction recommendations associated with flood protection systems in southeastern Louisiana. Mr. Walsh has served as the project engineer and project manager responsible for the development and implementation of geotechnical exploration programs; development of soil testing laboratory programs; and interpretation of the results to evaluate strength, compressibility, and general soil characterization. Mr. Walsh used these data for geotechnical designs comprising pile capacity curves; bearing capacity analyses; cantilever retaining analyses; anchored retaining wall analyses; temporary retaining structure design; time-settlement projections for earthen levees with lift schedules; soil pressure profiles; structural and earthen levee under seepage analyses; levee and bank stability by the Spencer's Method and the Method of Planes; reinforced embankment design; stability analyses of flood protection walls (e.g., T-wall, I-wall, L-wall, and braced 'A-Frame' walls); downdrag and settlement analyses; settlement induced bending</p>

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Sean G. Walsh, P.E. / Engineering Manager and Vice President (Engineering)

moments (SIBM) in foundation piles; piping analyses; uplift analyses; heave analyses; three-dimensional modeling of fill and structural load placements for predictions of time-rate settlements of foundation systems; and numerical modeling of soil-structure-interaction (SSI) of flood protection structures by the finite element method (FEM).

Mr. Walsh has also worked on many local government projects in towns and cities including New Orleans, Golden Meadow, and Kentwood; numerous projects in Jefferson, Orleans, St. Bernard, St. Charles, and Plaquemines Parishes; several Port Commissions (e.g. Baton Rouge, New Orleans, South Louisiana); the Sewerage & Water Board of New Orleans; etc.

Regardless of the types of projects engineered for these agencies, his responsibilities have remained the same, namely defining the project philosophy; developing and maintaining the schedule; providing status reports to clients; controlling expenditures; overseeing project personnel; and reviewing the project design for compliance with engineering principles, company standards, and customer requirements. He is hands-on in coordinating activities concerned with technical developments and in resolving engineering design/test problems.

Mr. Walsh's skills over the past nine years have developed exponentially with the variety of projects that have crossed his desk. With regard to this submittal, Mr. Walsh has been directly involved with the following projects:

- Jefferson Parish - Jung and Falcone Lift Station Upgrades (K-11-3), New Sanitary Sewer Lift Station, Marrero, Louisiana
- Lafourche Parish Government - Butch Hill Pump Station, Lafourche Parish, Louisiana
- Jefferson Parish - Bonnabel Canal, Pomona Street to Nero Street, Metairie, Louisiana

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Lawrence W. Rome, C.E.T. / Operations Manager and Vice President (Operations)
Project Assignment:
Operations Manager / Limited Liability Corporation Member
Name of Firm with which Associated:
Eustis Engineering L.L.C.
Years' Experience with This Firm:
28
Education: Degree(s)/Year/Specialization:
Associate of Applied Sciences / 1998 / Safety
Active Registration: Year First Registered/Discipline:
N/A
Other Experience and Qualifications Relevant to the Proposed Project:
Accreditations / Affiliations / Certifications American Society of Certified Engineering Technicians Confined Space Entry Certification Greater New Orleans Industrial Education Council Safety Training Medic First Aid and CPR Course 2015 HAZMAT Certification, 49 CFR 172, Subpart H, Nuclear Gauges International Code Council: Soils Special Inspector National Institute for Certification in Engineering Technologies: Level I: Construction Materials Testing, Asphalt Level II: Construction Materials Testing, Concrete Level IV: Construction Materials Testing, Soils Level II: Geotechnical Engineering Technology, Construction Level III: Geotechnical Engineering Technology, Generalist Level IV: Geotechnical Engineering Technology, Exploration Level IV: Geotechnical Engineering Technology, Laboratory Level III: Transportation Engineering Technology, Highway Materials 10-Hour OSHA Training Transportation Workers Identification Card (TWIC) Registered Well Driller for the States of Louisiana and Mississippi
Professional Experience After joining Eustis Engineering in 1994, Mr. Rome has worked in several departments throughout our firm. He began as a laboratory technician, performing simple testing such as grain size analyses, Atterberg liquid and plastic limits, and unconfined compression shear. Mr. Rome has become involved in more complex testing procedures such as permeability and consolidation tests. His capabilities have expanded to include lime stabilization studies, California Bearing Ratio tests, hysteresis, direct shear tests, swelling pressure and percent swell tests, consolidated undrained triaxial shear tests, relative density tests, and compaction tests.

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Lawrence W. Rome, C.E.T. / Operations Manager and Vice President (Operations)

Project Assignment:

Operations Manager / Limited Liability Corporation Member

Name of Firm with which Associated:

Eustis Engineering L.L.C.

Mr. Rome is thoroughly familiar with the performance of the following types of testing.

- | | |
|---|---|
| Atterberg limits | CBR of laboratory compacted soils |
| Consolidated drained triaxial shear tests | Consolidated undrained triaxial shear tests |
| Consolidation tests | Direct shear |
| Direct simple shear | Flexible wall permeability test |
| Hydrometer | Miniature vane shear |
| Moisture content of soil and rock | Organic content |
| Particle size analysis of soils and aggregates | Percent finer than No. 200 sieve |
| Pocket penetrometer | Relative density tests |
| Settlement column testing of dredged materials | Sieve analyses |
| Soil constants | Specific gravity of soils |
| Standard and modified compaction | Swell pressure tests |
| Torvane shear tests | Unconfined compressive strength of soil |
| Unconsolidated undrained triaxial shear tests | Unified Soil Classification System |
| Unit weight | Visual classification of soils |
| Moisture density relationships of soil-cement mixtures | |
| Molded sand triaxial test using Mississippi Department of Transportation specifications | |
| U.S. Army Corps of Engineers' New Orleans District Classification System | |

In early 1998, Mr. Rome joined the Drilling Department as a soil technician, while assisting the drilling crew as a wrenchman. In November 1998, Mr. Rome became a driller for Eustis Engineering. In this capacity, he performed sampling operations using 3-in. diameter Shelby tubes and 5-in. diameter Corps of Engineers' fixed piston sampling. He is also quite familiar with splitspoon, pitcher, Osterberg, Denison, and hollow stem auger sampling operations. He is competent in the installation of piezometers, monitoring wells, inclinometers, and pore pressure transducers. Mr. Rome has drilled to depths in excess of 300 feet utilizing 5-in. fixed piston samplers and in excess of 400 feet for 3-in. diameter Shelby tube sampling. Mr. Rome has drilled from various types of equipment including pontoons, cargo buggies, shallow draft elevating boats, barges, and pull boats using CME, Diedrich, and Failing drill rigs. Mr. Rome has also served as a Quality Assurance/Quality Control inspector for drilling operations for FFEB JV. This included ensuring as many as 22 drill crews were performing sampling operations in strict compliance with USACE specifications.

In the early 2000s, Mr. Rome attended the University of Missouri at Rolla for Advanced Soil Mechanics training. In 2005, he began serving as Operations Manager overseeing the laboratory department's daily objectives, reviewing calculations, and developing new skills in laboratory personnel, as well as other duties. In the drilling department, he oversees up to five drilling crews which involves ordering parts, looking at prospective sites, making crew schedules, lining up subcontract equipment, and ensuring the highest quality samples are obtained by drill crews and subcontractors. Mr. Rome also serves as a driller or soil technician when his experience is required or to train new employees.

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Lawrence W. Rome, C.E.T. / Operations Manager and Vice President (Operations)

Project Assignment:

Operations Manager / Limited Liability Corporation Member

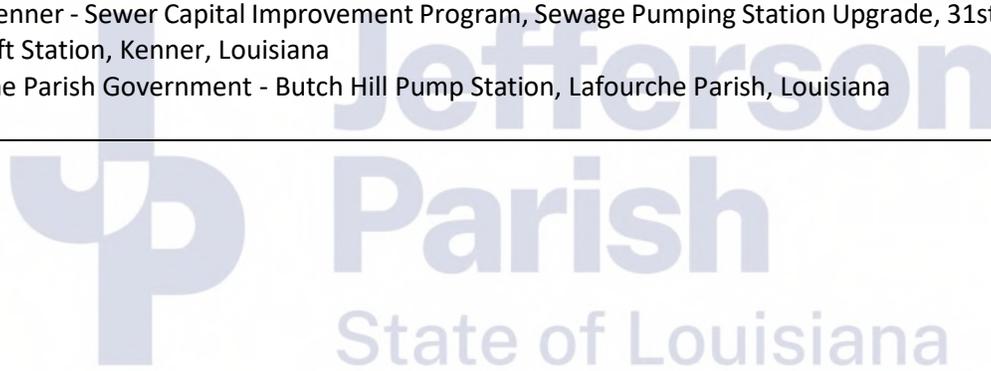
Name of Firm with which Associated:

Eustis Engineering L.L.C.

In 2013, Mr. Rome added the CMT Department under his operational duties in addition to his operational duties within the lab and drilling departments. Mr. Rome works closely with the operations supervisor for CMT, overseeing the department's daily objectives, reviewing reports, reviewing invoices, addressing staffing needs, as well as other duties.

Mr. Rome has worked on the following projects within this submittal:

- Jefferson Parish - Jung and Falcone Lift Station Upgrades (K-11-3), New Sanitary Sewer Lift Station, Marrero, Louisiana
- Jefferson Parish - Lift Station G8-2, Tolmas Drive and West Esplanade Avenue, Metairie, Louisiana
- Jefferson Parish - Veterans Boulevard, North and South Pump Stations, Jefferson Parish, Louisiana
- City of Kenner - Lift Station No. 4102, Airline Highway and Minden Avenue, Kenner, Louisiana
- City of Kenner - Sewer Capital Improvement Program, Sewage Pumping Station Upgrade, 31st Street and Jasper Street Lift Station, Kenner, Louisiana
- Lafourche Parish Government - Butch Hill Pump Station, Lafourche Parish, Louisiana



TEC Professional Services Questionnaire

M. List all prior and/or on-going litigation between Firm and Jefferson Parish. Please attach additional pages if necessary.

Parties:		Status/Result of Case:
Plaintiff:	Defendant:	
1. None at this time.		
2.		
3.		
4.		

N. Use this space to provide any additional information or description of resources supporting Firm’s qualifications for the proposed project.

When Eustis Engineering opened its first office in Vicksburg, Mississippi, in 1946, it housed its entire operation in less than 500 square feet of space. *Seventy-six years later*, our personnel and equipment occupy 40,000+ square feet of space in five locations.

Eustis Engineering is the third oldest, continually operating geotechnical firm in the United States. From a two-man office to approximately 100 individuals, the firm has grown to house accounting, administrative, quality control, safety, drilling, engineering, laboratory, and construction materials testing departments. These departments work together to provide our clients with the quality work desired in a cost efficient and timely manner.

Eustis Engineering is headquartered in Metairie, Louisiana, in the heart of Jefferson Parish’s East Bank. We also operate branch offices in Lafayette and Baton Rouge, Louisiana; in Gulfport, Mississippi; and in Houston, Texas. Our offices and staff collaborate seamlessly using Microsoft Teams and other virtual platforms.

Eustis Engineering’s services encompass many disciplines including the performance of:

- subsurface exploration (drilling of soil borings, cone penetration testing, and Geoprobe®);
- soil mechanics laboratory tests;
- field instrumentation and monitoring;
- non-destructive testing of piles and shafts including dynamic pile testing, cross-hole sonic logging, single-hole sonic logging, low strain pile integrity testing, and thermal integrity profiling;
- geotechnical engineering design; and
- construction quality control and materials testing services.

Eustis Engineering L.L.C. Important Numbers	
Item	Number
DUNS	78-481-0959
CAGE Code	4MOP2
Firm License - Louisiana	EF.0003558
Firm License - Mississippi	2078
Firm Registration – Texas	13895

Eustis Engineering has worked on over 800 geotechnical and construction materials testing projects for Jefferson Parish Government entities, many of which focused on water facilities and infrastructure. We have also worked on over 4,000 projects of all types throughout the east and west banks of Jefferson Parish alone, not considering similar projects in the surrounding parishes. This work history gives our engineering staff unparalleled familiarity with the foundation conditions in the Gulf Coast and the challenges that may arise for projects associated with this contract.

ENGINEERING SERVICES

Eustis Engineering has engineering capabilities to fulfill the requirements of nearly any project. Our clients include local, state and federal entities as well as industrial and commercial facility owners. Thus, we understand multiple stakeholder demands and design approaches. We can also assist with coordination with partner agencies.

We have developed pile capacity and bearing capacity analyses for projects throughout the coastal areas of the United States. Eustis Engineering's evaluation of piles and shafts includes estimates of vertical capacity for groups. We also perform lateral analyses of individual piles and pile groups using LPILE and GROUP. We provide guidance for the assessment of uplift on shallow and deep foundations as a result of hydrostatic pressures.

We perform settlement studies including estimates of total and differential settlement and time-rate of settlement (with and without wick drains to enhance consolidation) for shallow and deep foundations for all types of structures and features. These settlement studies include estimates and recommendations for lift construction affecting a gain-in-strength of foundation soils associated with subsoil consolidation. Preload/surcharge operations are also a component of our settlement evaluations.

Our capabilities extend to performance of deep-seated global stability analyses for structures (T-walls and I-walls) according to the standards of the Hurricane and Storm Damage Risk Reduction System Design Guidelines, Louisiana Flood Protection Design Guidelines, and the CPRA's Marsh Creation Design Guidelines, using Spencer's Method as coded in SLOPE/W and the LMVD Method of Planes as coded in UPLIFT. These programs are also used for the design and verification of levees, reinforced embankments, revetments, channel slopes, and open excavations. We also evaluate local and global stability of temporary or permanent retaining systems using these same programs. We assess the potential for basal heave and the need for dewatering and pressure relief measures.

We routinely provide geotechnical recommendations for development of plans and specifications, including material properties for bedding and backfill, placement and compaction efforts appropriate to these fill materials, and other construction considerations. Our engineering staff's involvement with construction materials testing projects of all types helps to inform design decisions and recommendations.

In our practice, Eustis Engineering has developed methodologies associated with the estimates of negative skin friction on pile foundations. The methods are the current state of practice. The extension of these methods is an evaluation of settlement induced bending moment (SIBM). Eustis Engineering is also utilizing a numerical model program SIGMA/W in association with the rigorous settlement program Settle3. Finally, Eustis Engineering has performed seepage analyses for evaluation of heave, uplift, and piping. We use EM 1110-2-1913, EM 1110-2-1901, and DNR 1110-1-400 for manual calculations that consider blanket theory. We also use SEEP/W for a computer model and typically compare the results of manual calculations to the SEEP/W model as a quality assurance procedure.

Engineering Staffing

Our engineering staff has 15 Master's degrees in Civil Engineering, Engineering, Engineering Management, and Business Administration. Participation in post Bachelor of Science curricula, as well as continuing education and professional registration that emphasizes engineering management and technical issues, are very important to Eustis Engineering. Our engineers also regularly present at technical conferences. We encourage and fund our staff for these activities and programs.

Reviewing the following table, the majority of Eustis Engineering's professional engineers have at least ten years of experience in geotechnical engineering.

Employee	Education	Experience	
		Years with Eustis Engineering	Total Years
Professional Engineers (P.E.)			
Benjamin M. Cody	M.S. / Civil Engineering	21	25
Brian A. Deschamp	B.S. / Civil & Environmental Engineering	10	10
	B.A. / Business Administration		
Lars A. Erickson	B.S. / Civil & Environmental Engineering	6	6
	Coastal Engineering Certificate		
James J. Hance	M.S. / Civil Engineering	19	23
	M.B.A. / Business Administration		
Chad L. Held	M.S. / Civil Engineering	31	31
David J. Indest	M.S. / Civil Engineering	21	21
Matthew K. Morales	B.S. / Civil Engineering	13	13
Travis R. Richards	M.S. / Engineering	17	24
	M.S. / Engineering Management		
	Coastal Engineering Certificate		
Gwendolyn P. Sanders	M.S. / Engineering	29	29
Shaun R. Simon	M.S. / Civil Engineering	22	22
Patrick A. Thurmond	M.S. Engineering Management	7	7
	M.S. / Civil Engineering		
	Coastal Engineering Certificate		
Sean G. Walsh	M.S. / Civil Engineering	10	15
James M. Williams	M.S. / Civil Engineering	4	4
Henry C. Worley	B.S. / Civil Engineering	5	6.5
	Coastal Engineering Certificate		
Engineering Interns (E.I.)			
Scot J. Breaux, Jr.	B.S. / Civil and Environmental Engineering	1	2
Patrick T. Duckworth	M.S. / Civil Engineering	2	2
Grant Collongues	B.S. / Civil Engineering	0	0
Tomas K. Morales ⁽¹⁾	B.S. / Civil Engineering	9	9
Engineering Graduates			
Lesley L. Reitmeyer	B.S. / Civil Engineering	13	13
Sean T. Smith	B.S. / Civil Engineering	6	6
Geologists			
Matthew J. Blasini, G.I.T.	B.S. / Geology	3	4
Nathan A. Quick, P.G.	M.S. / Geology	1	6
Total Years of Experience		250	278.5

⁽¹⁾ Long-term Subcontractor

Cone Penetration Testing Capabilities

Eustis Engineering owns two dedicated track-mounted Cone Penetration Testing (CPT) rigs and operates four other multi-purpose rigs that can perform CPTs. Operators are either specifically trained engineering technicians or engineers who perform the field operations utilizing the CPT equipment. Engineers with specialized knowledge and experience operating the rigs evaluate the sounds and produce the CPT logs. Five of our rigs can be placed on a cargo buggy, shallow draft barge, or airboat to access coastal marsh or open water. We have sounded to depths of 180 feet and have the ability to perform dissipation and seismic testing. Field testing is performed according to ASTM D5778 and common industry practices. Eustis Engineering has been performing and using CPT technology since the early 2000s.

A CPT can be accomplished rapidly with four or five being made in the same time frame as a standard geotechnical boring. Therefore, the CPT is typically cost effective in providing enhanced subsurface exploration and better delineation of subsurface conditions at a project site.

Dynamic Pile Testing Capabilities

Eustis Engineering was the first private consulting firm to own and operate dynamic pile testing equipment in the States of Louisiana and Mississippi. The pile types tested include timber piles; small size pipe piles; square, precast concrete piles and large (60 to 72-in. diameter) spun-cast, prestressed concrete piles; open-end and closed-end steel pipe piles; and steel H-piles.

We often upgrade our data collectors and operate four Pile Driving Analyzers® (PDAs), one PAX unit and three PDA-8G units. These units can be battery operated and use wireless gauge transmitters to eliminate the need for a main cable to connect directly to the units. We also stock and have used underwater gauges to monitor pile driving in marine environments when the pile head descends below the water surface.

To support our four PDA units, Eustis Engineering maintains an extensive inventory of calibrated gauges and accessories. To provide quality assurance and rapid response to issues in the field, all PDAs have wireless communication, enabling our engineers direct oversight of the dynamic pile testing process in real time.

We also use this PDA equipment to maintain the calibrations of our automatic SPT hammers on our drill rigs.

Other Non-Destructive Testing Capabilities

Our engineering staff at Eustis Engineering also performs other non-destructive testing services to verify the structural integrity of drilled shafts, augercast piles, and precast concrete piles. Some of these processes include cross-hole/single-hole sonic logging (CSL or SSL), low strain pile integrity testing (PIT), and thermal integrity profiling (TIP). We also perform parallel seismic testing to evaluate existing foundation depths.

INSTRUMENTATION

Eustis Engineering has installed geotechnical instrumentation for decades. Our instrumentation programs have resulted in substantial cost savings to our clients by reducing preload durations, providing refinement of geotechnical design parameters through full scale testing, and verifying the performance of cutting-edge designs. Our services go beyond the construction phase, as long-term monitoring programs enable owners to maximize utilization of their facilities throughout the design life by verifying soil behavior is within acceptable limits.

Eustis Engineering provides the following instrumentation services.

- Vibrating wire devices including piezometers, extensometers, settlement gauges, and strain gauges
- Data loggers to enable periodic collection of data for vibrating wire devices

- Data links for remote web access to loggers in near real time
- Settlement plates
- Conventional slope inclinometers or MEM sensor array inclinometers
- Monitoring services of all instrumentation devices with geotechnical interpretation

Instrumentation is a natural complement to our design services, providing data to verify or modify recommendations based on the observational method. Ongoing monitoring enables us to provide continuing services from project inception to the end of a project’s design life.

DRILLING/FIELD EXPLORATION

Eustis Engineering possesses licenses and credentials to perform geotechnical drilling in Louisiana and Mississippi (no license is needed in Texas). With our licenses and credentials, Eustis Engineering drills soil borings and performs sampling operations for our clients’ projects in all types of environments including land, marsh, swamp, and marine. Our personnel have the capability and experience to provide these services from trucks, barges, pontoons, and swamp or marsh buggies.

Field Exploration Personnel

We can provide up to ten (10) drillers and drill rigs capable of obtaining standard 3-in. diameter Shelby tube samples and 5-in. diameter fixed piston samples, sounding CPT, advancing Geoprobe® samplers, and installing geotechnical instrumentation on land, in water, and in marsh environments as indicated in the following table.

Capabilities of Eustis Engineering’s Field Exploration Staff	Scott Bombard	Jordon Brightwell	James Cordes	Rene Davidson	Robert Dupuy	Eric Held	James Lubben	George Reitmeyer	Lawrence Rome	Michael Whipkey
Hand Auger Borings	X	X	X	X	X	X	X	X	X	X
General Type (3-in. Diameter Borings)	X	X	X	X	X	X	X		X	X
General Type (3-in. Diameter Borings) in Hard Access Locations (Marsh, Swamp, Heavily Forested)	X	X	X	X		X	X		X	
Undisturbed Type (5-in. Diameter Borings)	X	X	X	X	X	X	X		X	X
Undisturbed Type (5-in. Diameter Borings) in Hard Access Locations (Marsh, Swamp, Heavily Forested)		X	X	X		X	X		X	
Location Information (Latitude, Longitude)		X	X	X	X	X	X		X	X
Set Permanent Benchmarks		X	X	X		X	X		X	
Install Instrumentation		X	X	X		X	X		X	
Cone Penetration Tests						X		X		
Geoprobe® Sampling	X		X		X	X	X		X	X

Field Exploration Equipment

Eustis Engineering owns and operates six wet rotary drill rigs, both truck-mounted and skid-mounted. This equipment includes one Diedrich truck-mounted D-50 turbo drill rig (with an automatic SPT hammer); one Failing skid only rig (with an automatic SPT hammer); one truck-mounted CME-55 rig; one track-mounted CME-850X rig with an automatic hammer; one track-mounted CME-850XR rig with an automatic hammer; and one truck-mounted CME-55 rig with a detachable CME-55 skid unit and automatic hammer. We also own two track-mounted cone penetrometer systems capable of providing up to 15 tons of reaction. Our CME track rigs provide low ground pressure and are designed to traverse soft ground surfaces, steep slopes, and lightly wooded areas.

Eustis Engineering also owns four direct push Geoprobe® units, two 3230DTs, the 6620DT and the 540M. Eustis Engineering's 6620DT/3230DT Geoprobe with their 12-in. tracks allow this equipment to be used on pavement as well as off road and in rugged terrain. The 6620DT and 3230DT rigs also can be placed on specialized equipment. This includes a jack-up barge and a cargo buggy for operations over marsh/water. These units can install shallow monitoring wells and other instrumentation. We also have the capability to perform CPTs using the 3230DT rigs.

Our 540M Geoprobe can fit into confined spaces as narrow as 32 inches. The 540M can also be utilized on an airboat for coastal terrains.

Other Specialized Soil Sampling Equipment

We have hand augers to obtain samples at various depths for use in classification and stratification of soil deposits. This equipment can be used in association with handheld piston samplers to obtain small diameter samples. Finally, we operate a dynamic cone penetrometer (DCPT) to assess the in situ strength of undisturbed soils and compacted materials in accordance with ASTM D6951.

Drone Capabilities

Eustis Engineering utilizes small Unmanned Aerial Systems (sUAS), more commonly known as "drones" to enhance our services. We use the drones to perform site inspections, field reconnaissance, pre/post-construction condition surveys, construction inspections, and other forms of visual monitoring. We currently operate a DJI Mavic Air 2S Drone piloted by a Part 107 Certified Remote Pilot.

LABORATORY SERVICES

Eustis Engineering's laboratories are constantly evolving with the purchase of new equipment on a yearly basis. Our gINT® data management software from Bentley allows for maximum efficiency in production of boring logs and data entry.

Eustis Engineering has also recently acquired OpenGround®, Bentley's Cloud platform, which interfaces with a collection of geotechnical applications. OpenGround provides a comprehensive solution for collecting, reporting, managing, visualizing, analyzing, and accessing data. Its advanced digital workflows combine both subsurface and surface data into one cohesive design. This software will provide Eustis Engineering's team members access to a data source via connected applications or a web portal, increasing collaboration and efficiency. The improved access and reliability will save time and money in the planning, design, analysis, construction, and operation of infrastructure projects.

Eustis Engineering has also acquired KeyLAB® from Bentley. KeyLAB is the leading laboratory management system built specifically for geotechnical and construction materials testing laboratories. It improves our laboratory efficiency at every stage of the geotechnical and construction testing process, including sample and storeroom management, as well as electronic scheduling, testing, and reporting. It integrates with Microsoft Excel® allowing for easily customized worksheets and reports.

Technical testing common to our laboratories includes ASTM, ACI, LaDOTD, AASHTO, FAA, and USACE. Our laboratories hold accreditations from AASHTO, LaDOTD, and the USACE.

Laboratory Staffing

Eustis Engineering currently has more than a dozen technicians to perform soil mechanics laboratory testing. These technicians are versed in the latest standards from ASTM, LaDOTD, MDOT, AASHTO, FAA, and the USACE. Many of our technicians have earned certifications with the National Institute for Certification in Engineering Technologies (NICET) in the area of geotechnical engineering technology and in the subfields of construction, exploration, generalist, and laboratory.

Laboratory Quality Control

In our effort to ensure the quality of our laboratory and materials testing, our programs are regularly inspected by outside agencies such as the U.S. Army Corps of Engineers, the AMRL Group of the American Association of State Highway and Transportation Officials, and the CCRL Group of AASHTO. Eustis Engineering is also accredited by the Mississippi Department of Transportation.

Eustis Engineering has three soil mechanics laboratories where our laboratory practices and quality management system meet the requirements of AASHTO R 18 and ASTM E329. These offices are located in Metairie, Baton Rouge, and Gulfport. Individual offices may comply with ASTM quality system specifications including ASTM C1077, ASTM D366, and ASTM D3740. Accreditations in the various areas are shown below.

Metairie	Baton Rouge	Gulfport
Aggregate	Aggregate	Aggregate
Asphalt	Soil	Asphalt
Concrete	Spray Fire-Resistive Material	Concrete
Masonry		Soil
Soil		Spray Fire-Resistive Material

Our laboratory in Houston, Texas has capabilities in the areas of Aggregate, Concrete, Masonry, and Soil. Applications for CCRL and AMRL accreditation are in process with the intent of achieving these accreditations later this year.

To show further that quality is paramount to Eustis Engineering, we have two individuals in charge of maintaining quality in our testing. Travis R. Richards, P.E., is the engineer-in-charge, and we also have a Quality Control Manager who oversees the calibration of our equipment. The biggest reward of our quality measures is knowing that our clients are confident that our testing laboratory produces the highest quality results and conforms to national and international standards.

O. To the best of my knowledge, the foregoing is an accurate statement of facts.

Signature:  Print Name: Gwendolyn P. Sanders, P.E.
 Title: President Date: 18 March 2022



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