



# STATEMENT OF QUALIFICATIONS

## Professional Engineering Services for the Grand Isle Waterline Lowering Project

SOQ 23-008, Resolution No. 141453

for Jefferson Parish



April 2023



**Trigon Associates, llc**  
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April 28, 2023

Jefferson Parish Council  
General Government Building  
200 Derbigny Street, Suite 4400  
Gretna, LA 70053

**Re: Professional Engineering Services for the Grand Isle Waterline Lowering Project (SOQ-23-008)**

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 environmental, engineering, consulting, and management services. Our team has over 300 years of combined experience with applicable municipal and public works projects, including significant experience with federal, state, and local grant programs. Trigon is qualified to perform and successfully complete infrastructure projects for the Parish, a few of our key qualifications are 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, environmental and compliance specialists, construction managers, design managers, and engineers from multiple disciplines.
- 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 environmental and coastal restoration 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,

A handwritten signature in blue ink that reads "Michelle Herbert".

Michelle Herbert  
Chief Executive Officer

## TEC Professional Services Questionnaire

### 2A. Project Name and Advertisement Resolution Number:

#### **Professional Engineering Services for the Grand Isle Waterline Lowering Project**

*SOQ 23-008, Resolution No. 141453*

### B. Firm Name & Address:

# Trigon

Trigon Associates, llc  
1515 Poydras Street, Suite 930  
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 930  
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>2</u> Structural Engineers
<u>1</u> Chemical Engineers	<u>    </u> Geotechnical Engineers	<u>    </u> Graduate Engineers
<u>12</u> Civil Engineers	<u>    </u> Interior Designers	<u>3</u> Project Managers
<u>7</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>2</u> Electrical Engineers	<u>2</u> Mechanical Engineers	<u>    </u> Sanitary Engineers
<u>    </u> Engineer Intern	<u>3</u> Environmental Engineers	<u>17</u> Other
<u>    </u> Professional Land Surveyors		<b><u>58</u> TOTAL</b>

### 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. <b>BFM Corporation, LLC</b> 15 Veterans Memorial Blvd. Kenner, Louisiana 70062 504-468-8800	Surveying	Yes
2. <b>Eustis Engineering Services, LLC</b> 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**  
*Principal in Charge/Vice President*

**Project Assignment:**

Review/QA & QC

**Name of Firm with which associated:**



**Years' experience with this Firm:**

14

**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 27 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 distribution, storage, and treatment 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.** Served as the reviewer and QA/QC lead for engineering, design and construction services for \$5.5M to \$7.5M of water line improvements in three separate design and construction projects. The project 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.

## TEC Professional Services Questionnaire

*Kolenovsky, continued.*

### **Other experience and qualifications relevant to the proposed Project:**

**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 remained 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.** Served as QA/QC lead 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 the Principal-in-Charge for Trigon's engineering and design work as a major subconsultant on this project 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. Primary improvements resulting from this project 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 a remote-site bladder tank installation.

**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.

**Water Main Replacement Program for Multiple Neighborhoods in the Midtown Area of Houston, TX.** Provided review and QA/QC 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.

## 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:**

12

**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 licensed Professional Engineer in Louisiana, Florida, and Texas, with over 23 years of experience in the design and construction of municipal water and wastewater systems and treatment facilities, as well as, projects involving drainage/storm water; hydrologic and hydraulic calculations and designs; buildings and facilities; and roadways, including disaster recovery and hazard mitigation projects for FEMA and GOHSEP. In addition, Ms. Cassanova also excels at project management and program management, and has worked on international infrastructure and construction projects in

Australia, Haiti, Jordan, Libya, and Palestine. 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.

**RELEVANT PROJECT EXPERIENCE**

**Highway 11 Water Line Improvements, Buras, LA.** Served as 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.

**Water Hammer Hazard Mitigation Project, New Orleans, LA.** Served as Project Manager/Principal Engineer for Trigon's engineering and design work as a major subconsultant on this project 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. Primary improvements resulting from this project 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 a remote-site bladder tank installation.

## TEC Professional Services Questionnaire

*Cassanova, continued.*

### **Other experience and qualifications relevant to the proposed Project:**

**Water Quality Master Plan, New Orleans, LA.** Served as 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 for the Lakeview, Lakewood, Navarre & West End Neighborhoods; New Orleans, LA.** Served as 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.

**East 70th Street (Creswell Road to E. Ridge Drive) Water Main Relocation, Shreveport, LA.** Served as lead engineer for 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. The project 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).

**Water Line Replacement Program for the Read Blvd. East, Read Blvd. West, Village de Lest, Bayou St. John, Fairgrounds and St. Bernard Neighborhoods; New Orleans, LA.** Served as 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.

**District B Miscellaneous Water Improvements; Shreveport, LA.** Served as Project Engineer providing 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.

**Buras Wastewater Treatment Plant Improvements; Buras, LA.** Served as Principal Engineer for an assessment of the Buras Wastewater Treatment Plant (WWTP) in Plaquemines Parish, LA. This assessment is intended to determine the necessary repairs, rehabilitation measures and/or process modifications required to improve operational conditions of the WWTP.

**Louis Morel Lane Infrastructure Improvements, Buras, LA.** Served as Project Engineer for infrastructure project that 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.

## 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:****Years' experience with this Firm:**

3.5

**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, Environmental Engineer, Texas  
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 15 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, an Envision Sustainability Professional (ENV SP), 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 in 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.** Served 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.

## 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 disinfection contact time (CT) study report and submission to TCEQ.

## 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:**

Trigon

**Years' experience with this Firm:**

7

**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 16 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.** Served as Project Engineer for engineering, design and construction services in a sub-consultant role for \$15M of 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.

**District B Miscellaneous Water Improvements, Shreveport, LA.** Served as 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.

**Water Main Replacement Program for Multiple Neighborhoods in the Midtown Area of Houston, TX.** Serving as Project Engineer 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.

## TEC Professional Services Questionnaire

*Lyons-Villatoro, continued.*

### **Other experience and qualifications relevant to the proposed Project:**

**Multi-Chemical Delivery and Storage System Evaluation; Houston, TX.** Served as project engineer and 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.

**Recycled Water Customer Onsite Conversion Project, Los Angeles, CA.** Served as project engineer and 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.** Served as project engineer and 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.** Served as project engineer and 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.** Served as project engineer and designed replacement filter under drain system, filter media, and air scour system in dual media filter.

**Water Transmission Pipeline Design; College Station, TX.** Served as project engineer and 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.** Served as project engineer and 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.** Served as project engineer and designed 3000 gpm groundwater well and ancillary facilities.

**East Bank Wastewater Treatment Plant Bleach Disinfection System, New Orleans, LA.** Served as 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.

## 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:**

2022, Professional Engineer, Louisiana

**Other experience and qualifications relevant to the proposed Project:**



Mr. Breaux is an environmental engineer with 7 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**

**Port Sulphur Water Treatment Plant Post-Hurricane Damage Assessment; Port Sulphur, LA.** Served as Project Engineer for a physical evaluation and assessment of the Port Sulphur Water Treatment Plant (WTP), a 3 MGD water treatment facility In Plaquemines Parish, as well as the associated Raw Water Pump Station (RWPS). The WTP and RWPS were significantly impacted by Hurricane Ida. This project focused on identifying and documenting all damage to the facilities caused by Hurricane Ida and providing recommendations of the work necessary to restore the facilities to pre-hurricane condition.

**Water Main Replacement Program for Multiple Neighborhoods in the Midtown Area of Houston, TX.** Serving as Project Engineer 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

## TEC Professional Services Questionnaire

*Breaux, continued.*

### Other experience and qualifications relevant to the proposed Project:

**Source Water Protection Plan (SWPP) for Drinking Water Treatment and Distribution Technical Optimization and Sustainability Support Services; Houston, TX.** Served as Project Engineer for Trigon's tasks related to updating the Source Water Protection Plan (SWPP) for the Drinking Water Treatment and Distribution Technical Optimization and Sustainability Support Services project and supported efforts to finalize a SWPP and Wellhead Compliance Study for the City of Houston.

**Port Sulphur Water Treatment Plant Improvements Design; Port Sulphur, LA.** Served as Project Engineer for the design of improvements based on the previously conducted damage assessment and the resulting report. The design must consider efforts completed in-house by PPG and their private operations contractor since submittal of the Damage Assessment Report to begin some level of repairs/improvements that they have been able to accomplish. Trigon's design is incorporating mechanisms such as alternate bid items to ensure PPG can get the most out of their available funding while still achieving the project's intended primary goals.

**East and West Bank Wastewater Treatment Plants – Staff Extension Services; New Orleans, LA.** This project included 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. Mr. Breaux served as project engineer and his project responsibilities included: design input and review, construction management, inspection services, and coordination with WWTP operators during design and construction phases.

**Northeast Turtle Bay Marsh Creation & Critical Area Shoreline Protection Project; Lafitte, LA.** Served as project engineer and provided 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, 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.

**Engineers Road/Cazalard Road Hydrologic & Hydraulic Study and Drainage Improvements; Belle Chasse, LA.** Served as project engineer and 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.

**East Bank Wastewater Treatment Plant Bleach Disinfection System, New Orleans, LA.** Served as project engineer and provided 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.

**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.

## 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:**

4

**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**

**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.

**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.

## 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:**

10

**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 50 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:**

10

**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 25 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**

**Water Line Replacement Program for the Lakeview, Lakewood, Navarre and West End Neighborhoods; 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.

## TEC Professional Services Questionnaire

*Enrique, continued.*

### Other experience and qualifications relevant to the proposed Project:

**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).

**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.

**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:**

**Paul Fleming**  
*Construction Inspector*

**Project Assignment:**

Construction Management and Inspection

**Name of Firm with which associated:**



**Years' experience with this Firm:**

8.5

**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 over 25 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**

<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>Water Line Replacement Program for the Lakeview, Lakewood, Navarre and West End Neighborhoods – New Orleans, LA</b></p> <p>Sewerage and Water Board of New Orleans Susan Diehl, Project Manager 504.930.7209</p> 	<p>Trigon provided engineering, design and construction phase services for the Sewerage and Water Board of New Orleans' citywide Water Line Replacement Program. The purpose of this program was to replace water lines on the East Bank of the City damaged as a result of floodwaters from Hurricane Katrina. Trigon has served as the prime consultant for engineering, design and construction phase services for water line improvements in the Lakeview, Lakewood, Navarre, and West End neighborhoods of the City. The improvements in the Lakeview area were grouped in two (2) separate design and construction projects (Groups 1 and 2) for approximately \$5M of water line construction. Improvements designed within the other three (3) neighborhoods totaled approximately \$6M. In addition to serving as the prime consultant for the work in these four (4) neighborhoods, Trigon also acted as a representative of the S&amp;WB on other City projects located within these assigned areas. 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&amp;WB standards.</p>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
2020	\$11M	\$11M

**PROJECT NO. 2**

<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>East 70th Street Water Main Relocation Design – Shreveport, LA</b></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>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
2013 (Actual)	\$400k	\$400k

**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**

<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>Highway 11 Water Line Improvements - Buras, LA</b></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>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
2012 (Actual)	\$35k	\$35k

**PROJECT NO. 4**

<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>District B Miscellaneous Water Improvements – Shreveport, LA</b></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>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
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. 5**

<p><b>Project Name, Location and Owner's contact information:</b></p>	<p><b>Nature of Firm's Responsibility:</b></p>	
<p><b>Water Hammer Hazard Mitigation Grant Program Project - New Orleans, LA</b></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&amp;WB) Carrollton Water Treatment Plant (WTP) complex as well as power supply infrastructure at the S&amp;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>	
<p><b>Completion Date (Actual or estimated):</b></p>	<p><b>Estimated Cost:</b></p>	
<p>Ongoing</p>	<p><b>Entire Project:</b> \$70M</p>	<p><b>Work for which Firm was Responsible:</b> \$20M</p>

**PROJECT NO. 6**

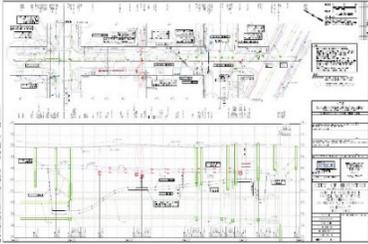
<p><b>Project Name, Location and Owner's contact information:</b></p>	<p><b>Nature of Firm's Responsibility:</b></p>	
<p><b>Water Line Replacement Program for the Read Blvd. East, Read Blvd. West, Village de Lest, Bayou St. John, Fairgrounds and St. Bernard Neighborhoods - New Orleans, LA</b></p> <p>Sewerage and Water Board of New Orleans                  Susan Diehl, Project Manager</p> 	<p>Trigon served as a major subconsultant under two (2) Prime contracts for the Sewerage and Water Board of New Orleans' citywide Water Line Replacement Program providing 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 this program was to repair/replace water lines on the East Bank of the City damaged as a result of floodwaters from Hurricane Katrina. The resulting water line replacements had 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; and ongoing City and S&amp;WB projects for street and sidewalk repairs, 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&amp;WB standards. Trigon also acted as a representative of the S&amp;WB on other City projects located within the assigned areas.</p>	
<p><b>Completion Date (Actual or estimated):</b></p>	<p><b>Estimated Cost:</b></p>	
<p>Ongoing</p>	<p><b>Entire Project:</b> \$7M</p>	<p><b>Work for which Firm was Responsible:</b> \$7M</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**

<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>Water Quality Master Plan – New Orleans, LA</b></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&amp;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&amp;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>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
2015 (Actual)	<b>Entire Project:</b> \$348k	<b>Work for which Firm was Responsible:</b> \$122k

**PROJECT NO. 8**

<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>Watermain Replacement in Mandell Place, Montrose, Westmoreland, and Courtland Place Subdivisions; Houston, TX.</b></p> <p>Houston Public Works                  Mumtaz Baig, Supervising Engineer                  832.395.2309</p> 	<p>As a major subconsultant, Trigon is providing design and engineering support services for the replacement of existing water lines, and in some cases the installation of new waterlines, throughout several neighborhoods of the City of Houston (COH).</p> <p>Trigon is preparing detailed plan and profile sheets for the new water line alignments and will assist the prime firm in coordination efforts for related work associated with the waterline construction. In total, Trigon is responsible for approximately 15,000 LF of water lines and is preparing 60%, 90% and 100% Final deliverables during the final design phase.</p>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
Ongoing (Actual)	<b>Entire Project:</b> \$2.1M	<b>Work for which Firm was Responsible:</b> \$100k

**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**

<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>Source Water Protection Plan (SWPP) for Drinking Water Treatment and Distribution Technical Optimization and Sustainability Support Services; Houston, TX</b></p> <p>Courtney O'Neill, PE, Vice President (AECOM, Prime Consultant) 206.388.6144</p>	<p>As a major subconsultant, Trigon supported efforts to finalize a Source Water Protection Plan (SWPP) and Wellhead Compliance Study for the City of Houston. Trigon's tasks on this project included determining and summarizing all applicable state (Texas) and federal (EPA) source water protection regulations; a 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. The inventory helped determine the basis for understanding where the community's source water and potential contaminants originate and establish source water protection strategies for these areas.</p>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
2022 (Actual)	\$49k	\$23k

**PROJECT NO. 10**

<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>Infrastructure Needs Program Phase II (INP II), Water Projects; West Bank and Gaza</b></p> <p>USAID/West Bank, Gaza Mission Anan Masri, COR 972-3-519-8622 <a href="mailto:amasri@usaid.gov">amasri@usaid.gov</a></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&amp;M) activities. Representative projects include:</p> <p><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.</p> <p><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.</p> <p><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>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
2018 (Actual)	\$92M	\$46M

**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 Professional Engineering Services for the Grand Isle Waterline Lowering Project in Jefferson Parish** (SOQ 23-008, Resolution No. 141453).

**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 and staff have over 300 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 waterline projects similar to the one proposed by this SOQ, 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 & 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, & West End, New Orleans, LA
- ▲ Water Line Replacement Program – Lakeview Groups 1 & 2, New Orleans, LA
- ▲ Water Line Replacement Program – 6 Areas, New Orleans, LA
- ▲ Highway 11 Water Line Improvements, Buras, LA
- ▲ Water Distribution System Assessment & Capital Improvement 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
- ▲ Wind Retrofit of Parish-Owned Facilities, Plaquemines Parish, LA
- ▲ Environmental Investigations/Soil Sampling for USACE, New Orleans, LA
- ▲ Comprehensive Utilities Hardening, Naval Air Station, Belle Chasse, LA



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

**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** have lived 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.



A sampling of **Trigon's** previous Jefferson Parish projects, as well as those of our members/staff have been involved with, include:

- ▲ Sewerage Capital Improvement Program, Jefferson Parish, LA
- ▲ NPDES Storm Water Permitting, Jefferson Parish, LA
- ▲ Water Asset Management Plan (Master Plan), Jefferson Parish, LA
- ▲ Sewerage System Operation and Maintenance Program, Jefferson Parish, LA
- ▲ Land Acquisition, Regulatory Compliance, Permitting, Grant Administration, Jefferson Parish, LA
- ▲ Cleary Avenue at Cypress Street, Jefferson Parish, LA
- ▲ Drainage and Roadway Improvements on Cleary Avenue at Cypress Street, Jefferson Parish, LA
- ▲ Design of Water Plant Safe Houses, Jefferson Parish, LA
- ▲ Storm Water Pollution Prevention Plans and Spill Prevention, Control and Countermeasures, Jefferson Parish, LA
- ▲ Water Distribution Modeling, Jefferson Parish, LA, and
- ▲ Multiple Hazard Mitigation/Disaster Recovery Home Elevation Grant Programs, Jefferson Parish, LA

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

**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.

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

**5. DBE PARTICIPATION**

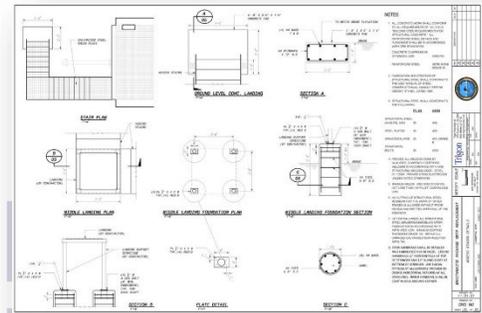


**Trigon** is certified as a Disadvantaged Business Enterprise (DBE) under the State of Louisiana's Unified Certification Program (UCP).

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** is a win for local small business!

**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.

**Trigon** is fully committed to providing the Parish with professional services in a timely manner that achieve agreed-upon goals and objectives.

**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
Farid Sadeghian, PE	Supervising Engineer	City of Houston, Wastewater Operations	832-395-4985
Dan Wagner	President	BLD Services, LLC	504-466-1344

**9. OUR COMMITMENT**



**Trigon** is fully committed to supporting Jefferson Parish and successfully executing the project proposed in 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: April 28, 2023



**UCP SEARCH RESULTS**[New Search](#)[Export to Excel](#)**Contractor****Business Type****Minority Type****License****Phone****FAX****E-Mail Address****Service Type****Owner****Certifying Agency****Work Type****TRIGON ASSOCIATES, LLC**

1515 POYDRAS ST., STE. 2200

NEW ORLEANS, LA 70112

HERBERT, MICHELLE

Louis Armstrong New Orleans International Airport

541618-Other Management Consulting Services

541618-Other Management Consulting Services

541330-Engineering Services

C74-Construction Management

White Women Owned Business

504-585-5767

504-585-5747

MHERBERT@TRIGONASSOCIATES.COM

ARCHITECTURE SERVICES, ENGINEERING SERVICES, PROFESSIONAL  
SERVICES, CONSTRUCTION

**BFM Corporation, LLC**  
Surveying Services

## TEC Professional Services Questionnaire

**A. Project Name and Advertisement Resolution Number:**

**Professional Engineering Services for the  
Grand Isle Waterline Lowering Project**  
SOQ 23-008 | Resolution No. 141453

**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
		<b>24 TOTAL</b>

\* 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:**

**BFM CORPORATION, LLC**  
Professional Land & Hydrographic Surveying

**Years experience with this Firm:**

41 years (Founding Principal of BFM in 1982); 56 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:

- *Location Survey for the 16-inch Water Line between Lafitte and Grand Isle, Jefferson Parish, LA*
- *Locate 16-inch Water Line between Valve Stations 18 and 24, Grand Isle, Jefferson Parish, LA*
- *Water Line Location Surveying, Grand Isle, Jefferson Parish, LA*
- *Fifi Island/Bayou Rigaud Water Line Location, Grand Isle, Jefferson Parish, LA*
- *Grand Isle Water Main Location, Jefferson Parish, LA*
- *Grand Isle Water Tower Site Project, Town of 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*
- *Lower Lafitte Waterline Stakeout, Jefferson Parish, LA*
- *Belle Chasse Waterline, Phase 2, Plaquemines Parish, LA*
- *Belle Chasse Water Plant Intake, Belle Chasse, Jefferson Parish, LA*
- *River Road Water Line, Waggaman, Jefferson Parish, LA*
- *River Road Water Line Replacement (Phase II), Jefferson Parish, LA*
- *Proposed Water Line Extension (Jordan Road), Vancleave, Jackson County, Mississippi*
- *Town of Jean Lafitte Drainage Improvements, Jefferson Parish, LA*
- *17th Street Canal Drainage Improvements, Jefferson/Orleans Parishes, LA*
- *Hickory Drainage Study, Jefferson Parish, LA*
- *DFIRM H&H Modeling, East Bank Basin, Jefferson Parish, LA*
- *18th Street Drainage Improvements (18th St from Division to W Esplanade Ave), Jefferson Parish, LA*
- *Johnson Street Drainage Improvements (Phases I & II), Jefferson Parish, LA*
- *Earhart and Clearview Interchange Drainage Study, Jefferson Parish, LA*
- *Canal "D" Drainage Improvements, Westwego Pump Station Nos. 1 & 2, Jefferson Parish, LA*
- *West Bank Expressway, Phase I Drainage Map, from Peters Rd to Manhattan Blvd, Jefferson Parish, LA*
- *Survey Update of the Marrero Pump Station, Marrero, Jefferson Parish, LA*
- *Coventry Drainage Pump Stations, River Ridge, Jefferson Parish, LA*
- *Marsh Island (Lafreniere Park), Metairie, Jefferson Parish, LA*
- *Boothville Water Treatment Plant, Plaquemines Parish, LA*
- *Roadway Surveys, Belle Chasse Barge Offloading Waterline Connection, Plaquemines Parish, LA*
- *St. Bernard Water Distribution System Line Replacement Project (Multiple Areas), St. Bernard Parish, LA*
- *Crown Point Drainage Flood Control Structures, Jefferson Parish, LA*
- *Hurricane Gustav Drainage Canal Repairs, East Bank, Jefferson Parish, LA*
- *Maplewood & Paillet HMGP Project, West Bank Subsurface Drainage Improvement Program Phase II, Jefferson Parish, LA*
- *Hilling Ditch Drainage Improvements, 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:**

6 years (became partial owner of BFM in 2017); 30 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)*

**Coventry Drainage Pump Stations, River Ridge, Jefferson Parish, LA.** BFM Corporation provided a Route Topographic Survey with Hydrographic Survey for the project, located in River Ridge, Louisiana. 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). The hydrographic survey extended 500 feet into the river from the water's edge. The full scope of the project also included research of public land records; location of property corners; establishing a baseline along the rear property line and; establishing Temporary Benchmarks. Existing improvements were located, as well as visible above ground utilities and those underground utilities with visible surface evidence. The survey further determined the depth, size, and type of pipes within surface observable drainage, sewerage, and water structures as established above. Trees were also located. Spot elevations were taken at 50 foot intervals within the Limits of Survey. (\$89,780 (fee); 2020)

**Lapalco Boulevard Bridge at Harvey Canal, (PW 2017-046-RBP; DOTD H.004396), Jefferson Parish, LA.** BFM Corporation provided extensive surveying services for a topographic survey and right-of-way (R/W) 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 include hydrographic topography/bathymetric surveying of the project area, the right-of-way determination, and subsurface utility engineering (SUE). Drone Surveying was utilized throughout the project. A Route Topographic Survey was also included as part of the scope, as was Subsurface Utility Engineering (SUE). (\$478,744 (fee); 2020)

**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)

**Bonnabel Canal, from W. Esplanade Avenue to Veterans Boulevard, Jefferson Parish, Metairie, LA.** The project, being executed for the Jefferson Parish Department of Capital Projects, involves establishing a baseline and setting Temporary Benchmarks. Scope includes location of improvements, utilities, and applicable trees. Spot elevations are included. The project is utilizing established Jefferson Parish GIS to show the apparent rights-of-way. The project involves 4100 lf of topographic survey along the Bonnabel Canal, from West Esplanade Avenue to Veterans Memorial Boulevard. (\$63,000 (fee); 2022)

## 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:**

15 years (joined BFM in 2008); 16 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 Rigaud Water Line Location, 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)

**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:**

5 years (joined BFM in 2018); 12 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).

**Coventry Drainage Pump Stations, River Ridge, Jefferson Parish, LA.** BFM Corporation provided a Route Topographic Survey with Hydrographic Survey for the project, located in River Ridge, Louisiana. 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). The hydrographic survey extended 500 feet into the river from the water's edge. The full scope also included research of public land records; location of property corners; establishing a baseline along the rear property line and; establishing Temporary Benchmarks. Existing improvements were located, as well as visible above ground utilities and those underground utilities with visible surface evidence. The survey further determined the depth, size, and type of pipes within surface observable drainage, sewerage, and water structures as established above. Trees were also located. Spot elevations were taken at 50 foot intervals within the Limits of Survey. (\$89,780 (fee); 2020)

**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

## TEC Professional Services Questionnaire

### Other experience and qualifications relevant to the proposed Project:

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

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 Bridge at Harvey Canal, (PW 2017-046-RBP; DOTD H.004396), Jefferson Parish, LA.** BFM Corporation provided extensive surveying services for a topographic survey and right-of-way (R/W) 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 include hydrographic topography/bathymetric surveying of the project area, the right-of-way determination, and subsurface utility engineering (SUE). Drone Surveying was utilized throughout the project. A Route Topographic Survey was also included as part of the scope, as was Subsurface Utility Engineering (SUE). (\$478,744 (fee); 2020)

**Bonnabel Canal, from W. Esplanade Avenue to Veterans Boulevard, Jefferson Parish, Metairie, LA.** The project, being executed for the Jefferson Parish Department of Capital Projects, involves establishing a baseline and setting Temporary Benchmarks. Scope includes location of improvements, utilities, and applicable trees. Spot elevations are included. The project is utilizing established Jefferson Parish GIS to show the apparent rights-of-way. The project involves 4100 lf of topographic survey along the Bonnabel Canal, from West Esplanade Avenue to Veterans Memorial Boulevard. (\$63,000 (fee); 2022)

**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)

**Power Boulevard at Vintage Drive, Kenner, Jefferson Parish, LA.** A survey update was provided by BFM, which was a continuation of a previous surveying project executed by the company. The scope of work included updating or addition of topographic survey at the intersection of Vintage Drive and Power Boulevard, and shooting two cross sections along the canal adjacent to a proposed bridge location. BFM further located the waterline, new monument along Power Boulevard, and located the monument of Lot 7 and adjacent property line along Janice Street and Vintage Boulevard. (\$11,390 (fee); 2019)

## 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:**

9 years (joined BFM in 2014); 17 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.

**Belle Chasse Waterline, Phase 2, Plaquemines Parish, LA.** BFM executed a topographic survey for the project. The scope of services for the project included establishing a baseline and an on-site temporary benchmark with additional TBMs at 500 foot intervals along the project route. Elevations were taken along the baseline at intervals defined in the limits of the survey and at breaks in grade. Improvements within the designated limits of survey were plotted; as were above-ground utilities and those underground utilities with visible surface evidence. Boundary corners were located along the route to assist in determining widths of any existing rights of way. (\$53,357 (fee); 2015)

**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 (approximately 14,000 linear feet plus 50-foot intersections). This project was part of the Louisiana Department of Health and Hospitals (LDHH) Clean Drinking Water loan program. The scope of work executed by BFM included establishing a baseline parallel with the right of way, setting TBMs, and plotting spot elevations. Improvements and utilities were located and plotted within the designated limits of survey. Boundary corners were located along the route in order to assist in determining widths of any existing rights of way. Trees on site (over 4-inches in diameter) were further located. (\$84,700 (fee); 2015)

## 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:**

15 years (joined BFM in 2008); 46 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.

**Locate 16-inch Water Line between Valve Station 18 and Valve Station 24, Grand Isle, Jefferson Parish, LA.** The purpose of the survey was to locate the 16-inch water line between Valve Station 18 and Valve Station 24. Survey probing was done utilizing a jet probe system developed by BFM Corporation and the locations were made with RTN (Real Time Network) GPS. The Real Time Network is maintained by Louisiana State University and allowed for sub-centimeter level accuracy with GPS. This data was included with deliverables in AutoCAD DWG format and in ASCII text format for integration into the Parish GIS system. (\$133,444 (fee); 2014)

**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 (approximately 14,000 linear feet plus 50-foot intersections). This project was part of the Louisiana Department of Health and Hospitals (LDHH) Clean Drinking Water loan program. The scope of work executed by BFM included establishing a baseline parallel with the right of way, setting TBMs, and plotting spot elevations. Improvements and utilities were located and plotted within the designated limits of survey. Boundary corners were located along the route in order to assist in determining widths of any existing rights of way. Trees on site (over 4-inches in diameter) were further located. (\$84,700 (fee); 2015)

## 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:**

33 years (joined BFM in 1990); 33 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.

**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. The topographic survey involved the route along River Road from the common boundary line between Jefferson Parish and St. Charles Parish easterly along River Road to 200 feet east of its intersection with Rivet Boulevard on the west bank of Jefferson Parish. The survey extended from right of way to right of way along River Road. (\$43,211 (fee); 2012)

**Location Survey for the 16-inch Water Line between Lafitte and Grand Isle, Jefferson Parish, LA.** BFM located the 16-inch water line in the exposed areas from Sta. 0+00 on the north bank of Bayou Rigolettes to the south bank of Bayou Rigaud in Grand Isle, Louisiana. In a previous project for the Parish (BFM Proj 7317; Fifi Island/Bayou Rigaud Water Line Location in 2010), BFM located both the upper & lower portions of the 16-inch water line. This left the approximate location of the area previously located on Fifi Island; 138,776 feet or 25.79 miles. For the survey, probing was done utilizing a jet probe system developed by BFM Corporation and the locations were made with RTN (Real Time Network) GPS. The Real Time Network is maintained by Louisiana State University and allowed for sub-centimeter level accuracy with GPS. This data was included with deliverables in AutoCAD DWG format and in ASCII text format for integration into the Parish GIS system. (\$363,080 (fee); 2013)

## 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:**

9 years (joined BFM in 2014); 22 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:**

4 years (joined BFM in 2019); 24 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:**

**BFM CORPORATION, LLC**  
Professional Land & Hydrographic Surveying

**Years experience with this Firm:**

12 years (joined BFM in 2011); 32 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.

**Locate 16-inch Water Line between Valve Station 18 and Valve Station 24, Grand Isle, Jefferson Parish, LA.** The purpose of the survey was to locate the 16-inch water line between Valve Station 18 and Valve Station 24. The length of this segment was approximately 57,400 feet. Survey probing was done utilizing a jet probe system developed by BFM Corporation and the locations were made with RTN (Real Time Network) GPS. The Real Time Network is maintained by Louisiana State University and allowed for sub-centimeter level accuracy with GPS. This data was included with deliverables in AutoCAD DWG format and in ASCII text format for integration into the Parish GIS system. BFM further prepared an estimate for the Parish to provide a location survey for the water line after it was lowered. (\$133,444 (fee); 2014)

**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:**

**BFM CORPORATION, LLC**  
Professional Land & Hydrographic Surveying

**Years experience with this Firm:**

5 years (joined BFM in 2018); 8 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:**

**BFM CORPORATION, LLC**  
Professional Land & Hydrographic Surveying

**Years experience with this Firm:**

5 years (joined BFM in 2018); 38 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.

**Coventry Drainage Pump Stations, River Ridge, Jefferson Parish, LA.** BFM Corporation provided a Route Topographic Survey with Hydrographic Survey for the project, located in River Ridge, Louisiana. 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). The hydrographic survey extended 500 feet into the river from the water's edge. The full scope of the project also included research of public land records; location of property corners; establishing a baseline along the rear property line and; establishing Temporary Benchmarks. Existing improvements were located, as well as visible above ground utilities and those underground utilities with visible surface evidence. The survey further determined the depth, size, and type of pipes within surface observable drainage, sewerage, and water structures as established above. Trees were also located. Spot elevations were taken at 50 foot intervals within the Limits of Survey. (\$89,780 (fee); 2020)

## 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:**

14 years (joined BFM in 2009); 26 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:**

**Locate 16-inch Water Line between Valve Station 18 and Valve Station 24, Grand Isle, Jefferson Parish, LA.** The purpose of the survey was to locate the 16-inch water line between Valve Station 18 and Valve Station 24. The length of this segment was approximately 57,400 feet. Survey probing was done utilizing a jet probe system developed by BFM Corporation and the locations were made with RTN (Real Time Network) GPS. The Real Time Network is maintained by Louisiana State University and allowed for sub-centimeter level accuracy with GPS. This data was included with deliverables in AutoCAD DWG format and in ASCII text format for integration into the Parish GIS system. BFM further prepared an estimate for the Parish to provide a location survey for the water line after it was lowered. (\$133,444 (fee); 2014)

**Belle Chasse Waterline, Phase 2, Plaquemines Parish, LA.** BFM executed a topographic survey for the project. The scope of services for the project included establishing a baseline and an on-site temporary benchmark with additional TBMs at 500 foot intervals along the project route. Elevations were taken along the baseline at intervals defined in the limits of the survey and at breaks in grade. Improvements within the designated limits of survey were plotted; as were above-ground utilities and those underground utilities with visible surface evidence. Boundary corners were located along the route to assist in determining widths of any existing rights of way. (\$53,357 (fee); 2015)

**Iris Avenue Water Line Replacement, Jefferson Parish, LA.** BFM provided topographic surveying services for the Iris Avenue Water Line Replacement. This included the area of Iris Avenue from River Road to Jefferson Highway, on Lance Street and Jeanette Streets from Iris A venue to Brooklyn A venue. As executed, the surveys extended from right of way to right of way. (\$18,493 (fee); 2011)

## 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><b>Location Survey for the 16-inch Water Line between Lafitte and Grand Isle, Grand Isle, Jefferson Parish, Louisiana</b></p> <p><b>Jefferson Parish Department of Capital Projects</b> 1221 Elmwood Park Blvd, Suite 906 Jefferson LA 70123</p> <p><b>Reda M. Youssef, P.E., Director,</b> 504-736-6833</p>	<p>BFM located the 16-inch water line in the exposed areas from Sta. 0+00 on the north bank of Bayou Rigolettes to the south bank of Bayou Rigaud. In a previous project for the Parish (BFM 7317; Fifi Island/Bayou Rigaud Water Line Location, 2010), BFM located both the upper &amp; lower portions of the 16-inch water line. This left the approx. location of the area previously located on Fifi Island; 138,776 feet or 25.79 miles. For the survey, probing was done utilizing a jet probe system developed by BFM Corporation and the locations were made with RTN (Real Time Network) GPS; the RTN is maintained by LSU and allowed for sub-centimeter level accuracy with GPS. Data was delivered in AutoCAD DWG format and in ASCII text format for integration into the Parish GIS system.</p>	
<b>Completion Date (Actual or estimated):</b>	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2013	N/A	\$363,080 (fee)

### PROJECT NO. 2

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p><b>Locate 16-inch Water Line between Valve Station 18 and Valve Station 24, Grand Isle, Jefferson Parish, Louisiana</b></p> <p><b>Jefferson Parish Water Department</b> 1221 Elmwood Park Blvd Ste 909 Jefferson LA 70123</p> <p><b>R. Douglas Vincent, P.E., 504-838-4363</b> JPWater@jeffparish.net</p>	<p>The purpose of the survey was to locate the 16-inch water line between Valve Station 18 and Valve Station 24. The length of this segment was approximately 57,400 feet. Survey probing was done utilizing a jet probe system developed by BFM Corporation and the locations were made with RTN (Real Time Network) GPS. The Real Time Network is maintained by Louisiana State University and allowed for sub-centimeter level accuracy with GPS. This data was included with deliverables in AutoCAD DWG format and in ASCII text format for integration into the Parish GIS system. BFM further prepared an estimate for the Parish to provide a location survey for the water line after it was lowered.</p>	
<b>Completion Date (Actual or estimated):</b>	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2014	N/A	\$133,444 (fee)

## TEC Professional Services Questionnaire

<b>PROJECT NO. 3</b>		
<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>Belle Chasse Water Plant Intake,</b> Belle Chasse, Jefferson Parish, Louisiana</p> <p><b>Kyle Associates, LLC</b> 638 Village Lane North Mandeville LA 70471</p> <p><b>Phil O. Nelson, P.E., 985-727-9377</b> pnelson@kyleassociates.net</p>	<p>BFM Corporation provided bathymetric, boundary and topographic surveying services for the project. Improvements on the site were located, as well as visible above-ground utilities &amp; 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>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
July 2016	N/A	\$14,804 (fee)

<b>PROJECT NO. 4</b>		
<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>Lower Lafitte Waterline Stakeout,</b> Jefferson Parish, Louisiana</p> <p><b>CB&amp;I</b> 2424 Edenborn Avenue Suite 450 Metairie LA 70001</p> <p><b>Gene S. Gillen, P.E., 504-832-4881</b> gene.gillen@cbi.com</p>	<p>BFM Corporation provided surveying services associated with the location of a 16 inch plastic waterline in the Barataria Waterway as part of the Lower Lafitte Shoreline Stabilization project. BFM provided stakeout surveying for the project, staking the water line every 50 feet (with 4 ft. wooden stakes). Certain areas were very deep and the line was not accurately located in this area. BFM set markers where approximate locations were based on the areas where the line was found.</p>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
January 2017	N/A	\$38,205 (fee)

## TEC Professional Services Questionnaire

<b>PROJECT NO. 5</b>		
<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>Belle Chasse Waterline, Phase 2,</b> Plaquemines Parish, Louisiana</p> <p><b>Kyle Associates, LLC</b> 638 Village Lane North Mandeville LA 70471</p> <p><b>Franklin Kyle, 985-727-9377</b></p>	<p>BFM executed a topographic survey for the project. The scope of services for the project included establishing a baseline and an on-site temporary benchmark with additional TBMs at 500 foot intervals along the project route. Elevations were taken along the baseline at intervals defined in the limits of the survey and at breaks in grade. Improvements within the designated limits of survey were plotted; as were above-ground utilities and those underground utilities with visible surface evidence. Boundary corners were located along the route to assist in determining widths of any existing rights of way.</p>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
June 2015	N/A	\$53,357 (fee)

<b>PROJECT NO. 6</b>		
<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>St. Bernard Water Distribution System Line Replacement Project (Multiple Areas),</b> St. Bernard Parish, Louisiana</p> <p><b>Meyer Engineers Ltd.</b> 4937 Hearst St. Ste. B Metairie LA 70001</p> <p><b>Ana Theriot, P.E., 504-885-9892</b></p>	<p>BFM Corporation provided surveying services at three locations for the replacement of the St. Bernard Parish water distribution system, including Reunion (from River Bend to Louis), Rowley (from Judge Perez to Parish), and Livingston (from Jean Lafitte to Packenham). The scope of work involved establishing a baseline, setting temporary benchmarks (TBMs), and taking elevations (as well as spot elevations). Improvements were located and plotted within the designated limits of survey. The location of visible above ground utilities and those underground utilities with visible surface evidence was also plotted. Boundary corners were located along the route in order to assist in determining widths of any existing rights of way. Trees on site (over 4-inches in diameter) were further located. Deliverables included plan and profile sheets and electronic field roll in AutoCAD DWG format, with cross-section sheets provided.</p>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
January 2016	N/A	\$64,104 (fee)

## TEC Professional Services Questionnaire

<b>PROJECT NO. 7</b>		
<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>River Road Water Line Replacement (Phase II)</b>, Jefferson Parish, Louisiana</p> <p><b>Digital Engineering</b> 527 W Esplanade Ave Ste 200 Kenner LA 70065</p> <p><b>Frank T. Liang, P.E.</b>, 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 Willwood Drive (approximately 14,000 linear feet plus 50-foot intersections). This project was part of the Louisiana Department of Health and Hospitals (LDHH) Clean Drinking Water loan program. The scope of work executed by BFM included establishing a baseline parallel with the right of way, setting TBMs, and plotting spot elevations. Improvements and utilities were located and plotted within the designated limits of survey. Boundary corners were located along the route in order to assist in determining widths of any existing rights of way. Trees on site (over 4-inches in diameter) were further located.</p>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
June 2015	N/A	\$84,700 (fee)

<b>PROJECT NO. 8</b>		
<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>Fisher Basin Alignment Extension (Fisher/Lafitte Tidal Protection Alignment)</b>, Jefferson Parish, Louisiana</p> <p><b>Brown Cunningham Gannuch</b> 3012 26th Street Metairie LA 70002</p> <p><b>Ann Sprinston</b>, 504-454-3866 asprinston@ardurragroup.com</p>	<p>BFM provided topographic, bathymetric, and boundary surveying services for the project. The scope of services included extension of the project baseline along the shoreline of Bayou Barataria and towards LA45. The topographic survey was executed with sufficient intermittent shots to establish grade, and located all topographic features that could interfere with the proposed floodwalls and levee. Cross sections were also taken, with hydrographic surveys continuing out into the water and terminating at the thalweg. Overall, the surveying and mapping included sufficient topographic surveys and cross sections necessary to design, layout, access, construct, and perform the work.</p>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
April 2015	N/A	\$12,197 (fee)

## TEC Professional Services Questionnaire

<b>PROJECT NO. 9</b>		
<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>River Road Water Line</b>, Waggaman, Jefferson Parish, Louisiana</p> <p><b>Digital Engineering</b> 527 W Esplanade Ave Ste 200 Kenner LA 70065</p> <p><b>Frank T. Liang, P.E.</b>, 504-468-7515 fliang@deii.net</p>	<p>As requested by the Project Engineer, BFM provided water line location &amp; general surveying services for the project, which extended from the St. Charles Parish line to Rivet Boulevard in Waggaman. The topographic survey involved the route along River Road from the common boundary line between Jefferson Parish and St. Charles Parish easterly along River Road to 200 feet east of its intersection with Rivet Boulevard on the west bank of Jefferson Parish. The survey extended from right of way to right of way along River Road.</p>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
November 2012	N/A	\$43,211 (fee)

<b>PROJECT NO. 10</b>		
<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>Iris Avenue Water Line Replacement</b>, Jefferson Parish, Louisiana</p> <p><b>Lambert Engineers, LLC</b> 650 Poydras Street, Suite 2025 New Orleans LA 70130</p> <p><b>Dennis Lambert, P.E.</b>, 504-529-7687</p>	<p>BFM Corporation provided topographic surveying services for the Iris Avenue Water Line Replacement. This included the area of Iris Avenue from River Road to Jefferson Highway, on Lance Street and Jeanette Streets from Iris A venue to Brooklyn A venue. As executed, the surveys extended from right of way to right of way.</p>	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
May 2011	N/A	\$18,493 (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**, provides services to public & private concerns throughout Louisiana and the Gulf South. For over 40 years, BFM has provided surveying services covering all facets of engineering, construction, and forensics; topographic, and hydrographic, as well as drone-based surveying and high-definition laser scanning.

**BFM Corporation 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**
- **Maps, Cross-Sections, and Data Sets**
- **3D Laser Scanning**

## TEC Professional Services Questionnaire

N. continued.

- **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 provides **bathymetric surveying** to handle any **hydrographic surveying** tasks. For large rivers and bodies of water, we are 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. We use 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.**

### **CRITERIA 2 • 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.

## TEC Professional Services Questionnaire

N. continued.

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 3 • 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 4 • 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.

### **CRITERIA 5 • 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 6 • 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.

## TEC Professional Services Questionnaire

N. continued.

### CRITERIA 7 • 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 Dept.**

(504-736-6783 | JPPW@jeffparish.net)

**José A. Gonzales, CAO, City of Kenner**

(504-468-4090 | jgonzalez@kenner.la.us)

**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)

**Khalid L. Saleh, PhD, Capital Program Administrator, City of New Orleans Dept. of Public Works**

(504-658-8000 | khsaleh@nola.gov)

**Ben Lapine, Acting Director, Department of Sewerage, Jefferson Parish**

(504-736-6661 | JPSewerage@jeffparish.net)

**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.

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: \_\_\_\_\_

April 21, 2023

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      09/30/2024

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      09/30/2024

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      03/31/2024

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 10/12/2022 to 10/12/2023 .

Certification No. 9551

Stephanie Hartman,  
Director, Small Business Services

**Eustis Engineering, LLC**  
Geotechnical Engineering

**TEC Professional Services Questionnaire**

**A. Project Name and Advertisement Resolution Number:**

SOQ 23-008, Resolution No. 141453  
Professional Engineering Services for the Grand Isle Waterline Lowering Project

**B. Firm Name & Address:**

**Eustis Engineering L.L.C.**  
3011 28<sup>th</sup> 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](mailto: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.**

Sean Walsh, P.E. / Vice President and Engineering Manager / 504-834-0157 / [swalsh@eustiseng.com](mailto:swalsh@eustiseng.com)

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

<u>  8  </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> 16  </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>  2  </u> Engineer Intern	<u>      </u> Environmental Engineers	<u> 40  </u> <b>Other</b>
<u>      </u> Professional Land Surveyors		<u> 75  </u> <b>TOTAL</b>

**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.

## 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

**Project Assignment:**

Project Principal

**Name of Firm with which Associated:**

**Eustis Engineering L.L.C.**

**Years' Experience with This Firm:**

30

**Education: Degree(s)/Year/Specialization:**

Master of Science / 1992 / Engineering

Bachelor of Science / 1990 / Civil Engineering

**Active Registration: Year First Registered/Discipline:**

Louisiana: 1997 / Civil Engineering

Mississippi: 2003 / Engineering

Texas: 2020 / Engineering

**Other Experience and Qualifications Relevant to the Proposed Project:**

Mrs. Gwendolyn P. Sanders began her professional career with Eustis Engineering in 1993. Over the past 30 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 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 investigations, assigning laboratory testing, performing geotechnical engineering analyses, preparing detailed reports with engineering analyses and recommendations, reviewing reports prepared by other professionals, coordinating construction phase services, 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 42<sup>nd</sup> 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. In 2022, she was recognized as the Outstanding Civil Engineer of the Year by both the New Orleans Branch and Louisiana Section of the American Society of Civil Engineers (ASCE). 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

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

- Entergy Louisiana, LLC – Caminada Subdivision Replacement, LA Highway 1, Grand Isle (Jefferson Parish), Louisiana (19621, 24904.00-.02)
- State of Louisiana – Grand Isle State Park, Phase I and Phase II Improvements, Jefferson Parish, Louisiana (24093.00, .01)
- City of Biloxi – Infrastructure Repair Program, Biloxi, Mississippi (G0059, G0479)
- Plaquemines Parish – East Bayou Road, Water Main Extension, Plaquemines Parish, Louisiana (22523, 22911)
- Premier Environmental, LLC - Proposed Waterline Crossing, Pointe à la Hache, Louisiana (23817)

## TEC Professional Services Questionnaire

<b>KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:</b>
<b>Name &amp; Title:</b>
Sean G. Walsh, P.E. / Engineering Manager and Vice President (Engineering)
<b>Project Assignment:</b>
Project Manager
<b>Name of Firm with which Associated:</b>
<b>Eustis Engineering L.L.C.</b>
<b>Years' Experience with This Firm:</b>
10
<b>Education: Degree(s)/Year/Specialization:</b>
Master of Science / 2010 / Civil Engineering Bachelor of Science / 2007 / Civil Engineering
<b>Active Registration: Year First Registered/Discipline:</b>
Louisiana: 2013 / Civil Engineering
<b>Other Experience and Qualifications Relevant to the Proposed Project:</b>
<p>For his first five years after graduation, Mr. Sean G. Walsh 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-walls, I-walls, L-walls, and braced 'A-Frame' walls); downdrag and settlement analyses; settlement induced bending 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</p>

## KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

### Name & Title:

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

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 client 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 ten years have developed exponentially with the variety of projects that have crossed his desk. Regarding this submittal, Mr. Walsh has been directly involved with the following projects:

- Entergy Louisiana, LLC – Horizontal Directional Drilling for Utility Replacements, Grand Isle, South of LA Highway 1, Jefferson Parish, Louisiana (24719)
- State of Louisiana – Grand Isle State Park, Phase I and Phase II Improvements, Jefferson Parish, Louisiana (24093.00, .01)
- Grand Isle Independent Levee District - Breakwater Protection Project, Proposed Rock Dike Alignment, Cheniere-Caminada to Bayou Thunder, Jefferson and Lafourche Parishes, Louisiana (23808.00, .01)
- Ascension Parish Government – Construction Permit Support, Utilities Water Treatment Plant, Donaldsonville, Louisiana (24297)
- Premier Environmental, LLC - Proposed Waterline Crossing, Pointe à la Hache, Louisiana (23817)

## TEC Professional Services Questionnaire

<b>KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:</b>
<b>Name &amp; Title:</b>
Shaun R. Simon, P.E.
<b>Project Assignment:</b>
Project Manager
<b>Name of Firm with which Associated:</b>
<b>Eustis Engineering L.L.C.</b>
<b>Years' Experience with This Firm:</b>
23
<b>Education: Degree(s)/Year/Specialization:</b>
Master of Science / 2003 / Civil Engineering Bachelor of Science / 2000 / Civil Engineering
<b>Active Registration: Year First Registered/Discipline:</b>
Louisiana: 2004 / Civil Engineering
<b>Other Experience and Qualifications Relevant to the Proposed Project:</b>
<p>Since joining Eustis Engineering in 2000, Mr. Simon has been responsible for the analyses and design of numerous types of geotechnical foundations and applications. The types of analyses necessary for these projects include allowable soil bearing values, allowable pile/shaft load capacities for various types of piles and drilled shafts, settlement analyses, and pavement designs. He has provided recommendations for utility pipe bedding and base preparation as well as excavation support to meet OSHA and site requirements. He is experienced at lateral pile load analyses; anchored and cantilever sheetpile wall analyses using the U.S. Army Corps of Engineers' CWALSHT program; analyzing effects of drag loads on deep foundations; and slope stability analyses using the Method of Planes and Method of Slices. He is proficient in soil/foundation modeling programs such as LPILE® and GROUP® by Ensoft Inc., and Slope/W by GeoStudio. Mr. Simon specializes in the evaluation of heavy loadouts over Mississippi River/Atchafalaya Basin levees as part of the permitting process through USACE, CPRA, and regional Levee Boards. In addition to performing the engineering analyses, his responsibilities have included planning and coordinating field and laboratory personnel, preparation of reports with foundation recommendations, and consultations with clients.</p> <p>Mr. Simon has also performed both static and dynamic cone penetrometer tests (CPTs) with our piezocone penetrometer. In addition, he has performed pore water dissipation testing using CPT. He interprets cone penetrometer data and incorporates these data with boring data for use in geotechnical designs.</p> <p>Having become a Branch Manager/Project Manager in 2005, Mr. Simon has provided project management, oversight, and training to several entry-level associate engineers and project engineers. His responsibilities have also included development of appropriate scopes of work for projects and development of proposals for various geotechnical engineering projects. Mr. Simon also provides upper-level project review from both a technical level and risk assessment.</p> <p>Within this submittal, Mr. Simon has involvement in the following projects:</p> <ul style="list-style-type: none"><li>• Entergy Louisiana, LLC – Horizontal Directional Drilling for Utility Replacements, Grand Isle, South of LA Highway 1, Jefferson Parish, Louisiana (24719)</li><li>• City of Westwego – Geotechnical Engineering Analyses, The WHARF Waterline, Wetlands Harbor Activities Recreational Facility (24498)</li></ul>

<b>KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:</b>
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<b>Name &amp; Title:</b>
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Shaun R. Simon, P.E.

- City of Pascagoula – Ingalls Avenue Improvements, Desoto Street and Market Street, Jackson County, Mississippi (G0465)

PROJECT NO. 01		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p><b>Entergy Louisiana, LLC</b>  <b>Caminada Substation</b>  <b>Grand Isle, Louisiana</b>  <b>Eustis Engineering Project</b>  <b>Nos. 19621, 24904.00-.02</b></p> <p><b>Contact Information:</b>  Entergy Louisiana, LLC through  Dashiell Corporation  12301 Kurland Drive  Houston, Texas 77034  Josh Baker, P.E. @ 713-558-6770</p>	<p>In 2007, Eustis Engineering was asked to complete a geotechnical investigation for a new Entergy substation in Grand Isle, Louisiana. The geotechnical investigation included:</p> <ul style="list-style-type: none"> <li>• a general reconnaissance of the project site;</li> <li>• a subsurface exploration including two exploratory borings to a depth of 60 feet below existing grade;</li> <li>• laboratory testing of all selected soil samples obtained from the exploratory borings;</li> <li>• an engineering analysis and evaluation of the acquired data from the exploration and testing programs;</li> <li>• a field resistivity test; and</li> <li>• a summary of our findings and recommendations in a written report.</li> </ul> <p>In 2022, the substation was replaced because of damages during Hurricane Ida. Being that Eustis Engineering previously completed the geotechnical exploration at the site, we were asked to complete geotechnical engineering analyses for the development of the replacement substation. An existing wet well was demolished at the site using an open-cut excavation, but the base slab and supporting piles remained from the 2007 design. As a result, the new substation was offset to avoid those piles; however, some of the piles supporting the prior substation also remained in place and would be close to the new pile foundations. The replacement planned for a total of 372 timber piles.</p> <p>Eustis Engineering made recommendations for the new foundation and pile spacing, and provided the timber pile capacities, temporary bearing capacities, and refusal criteria. It was also requested by the contractor that Eustis Engineering provide additional field activities, comprising dynamic pile testing and pile installation observation services. We submitted a site specific safety plan and completed safety training to comply with the owner's requirements.</p>	
<p><b>Completion Date</b>  <b>(Actual or Estimated)</b></p>	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
<p>11/2022 (A)</p>	<p>Unknown</p>	<p>\$38,800</p>

**PROJECT NO. 02**

<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p style="text-align: center;"><b>Entergy Louisiana, LLC</b>  <b>Horizontal Directional Drilling for</b>  <b>Utility Requirements</b>  <b>South of LA Highway 1</b>  <b>Jefferson Parish, Louisiana</b>  <b>Eustis Engineering Project No. 24719</b></p> <p style="text-align: center;"><b>Contact Information:</b>  Entergy Louisiana, LLC Through  M.G. Dyess, LLC  7159 Highway 35  Bassfield, Mississippi 39421  Walt Clark @ 601-943-6663</p>	<p>Eustis Engineering performed a geotechnical exploration for horizontal directional drilling (HDD) to be performed as part of emergency utility repairs due to damage resulting from Hurricane Ida in 2021. The HDD for the utility replacements encompassed approximately 8 miles in length along Louisiana State Highway 1 (LA Highway 1) between Fourchon and Grand Isle in Jefferson Parish, Louisiana.</p> <p>The exploration for the utility repairs included the drilling of 22 soil borings to determine subsoil conditions and stratification and to obtain samples of the various substrata. The borings were each drilled to a depth of 80 feet below the existing ground surface using a truck-mounted, rotary-type drill rig. In several of the borings, sampling was conducted using a thin-wall Shelby tube sampling barrel to obtain undisturbed samples. In the remaining borings, sampling and testing were completed during the performance of Standard Penetration Tests (SPTs). Upon completion of the drilling operations, the borings were grouted with a cement-bentonite grout mix in accordance with regulatory requirements.</p> <p>Groundwater conditions were also evaluated at the time of the field exploration. These observations were made either in selected boreholes or within auger borings drilled adjacent to select boring locations. The borings and auger borings used for groundwater observations were drilled, without the addition of water or drilling fluids, to the depth below the existing ground surface where free water was initially encountered. Two locations were allowed to remain open, and observations conducted at 24 or 48-hours.</p> <p>M.G. Dyess, LLC was provided with a data report including the boring location plan and boring logs. Laboratory testing was not included in our scope of service for this project due to the expedited construction schedule to facilitate the emergency restoration. Rather, the logs of the borings were based on the visual observations conducted during the field operations. These data were utilized by M.G. Dyess to design their HDD program for the area.</p>	
<b>Completion Date</b> <b>(Actual or Estimated)</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for Which Firm Was Responsible:</b>
03/2022 (A)	Unknown	\$70,750

PROJECT NO. 03			
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:		
<p style="text-align: center;"><b>State of Louisiana</b>  <b>Grand Isle State Park</b>  <b>Phase I and II Improvements</b>  <b>Jefferson Parish, Louisiana</b>  <b>Eustis Engineering Project</b>  <b>Nos. 24093.00, .01</b></p> <p style="text-align: center;"><b>Contact Information:</b>  State of Louisiana – CPRA  Through GIS Engineering, L.L.C.  Post Office Box 820  Galliano, Louisiana 70354  Laura L. Barnes, P.E. @ 985-219-1048</p>	<p>This project consisted of repairs and upgrades to existing roads and parking lots damaged by repeated flooding. For the existing three-mile park roadway system, the repairs would include milling, overlaying, and full depth patching of pavement areas where sections had failed. In the three parking areas, repairs would include pulverizing the existing asphalt parking areas, and adding base course and an asphalt overlay to raise the parking area grades to above normal tide elevations.</p> <p>Eustis Engineering's field investigation included the performance of seven direct-push type borings and two pavement cores using one of our Geoprobe® rigs to identify the subsurface soils, stratifications, and pavement conditions at the site, and to obtain samples of the various strata encountered. The borings were performed to depths varying between 8.5 and 9 feet below the asphalt surface, and the pavement cores were performed to depths of 2.5 and 3.3 feet. Laboratory testing services included the performance of visual classification and natural water content determinations to aid in the classification of the soil samples.</p> <p>Engineering analyses were performed for groundwater management including temporary and permanent drainage; site preparation including demolition and removal of existing slabs or pavements, subgrade preparation, recommended structural fill and its compaction, etc.; and recommended flexible pavement components and thicknesses meeting Section 502 of the <u>Louisiana Standard Specifications for Roads and Bridges</u>.</p> <p>Phase II of the project focused on reconstruction of a rock jetty and deep foundation design for the extension of a fishing pier at the Grand Isle Park. Eustis Engineering's field exploration comprised two marine-based soil borings to obtain samples of the various strata encountered at the rock jetty and fishing pier. The borings extended to depths of 50 and 100 feet below the mudline.</p> <p>Soil mechanics laboratory tests included natural water content, unit weight, unconfined compression shear, unconsolidated undrained triaxial compression shear, Atterberg limits determinations, and grain size distributions.</p> <p>Proposed fishing pier upgrades comprise an extension of the existing pier into the Gulf of Mexico by approximately 400 feet. Eustis Engineering developed estimates of allowable axial and lateral pile load capacities to support the new pier foundations. We also provided estimates of allowable soil bearing capacities, deep-seated stability assessments, and general construction recommendations for the reconstruction of a rock jetty at the site.</p>		
	<b>Estimated Cost:</b>		
	<b>Completion Date (Actual or Estimated)</b>	<b>Entire Project:</b>	<b>Work for Which Firm Was Responsible:</b>
	06/2021 (A)	Unknown	\$44,000

**PROJECT NO. 04**

**Project Name, Location, and Owner's Contact Information:**

**Nature of Firm's Responsibility:**

**Grand Isle Independent Levee District  
Breakwater Protection Project  
Proposed Rock Dike Alignment  
Cheniere-Caminada to Bayou Thunder  
Jefferson and Lafourche Parishes, Louisiana  
Eustis Engineering Project  
Nos. 23808.00, .01**

**Contact Information:**  
Grand Isle Independent Levee District  
Through GIS Engineering, L.L.C.  
Post Office Box 820  
Galliano, Louisiana 70354  
Kyle Galloway @ 985-219-1000

The proposed rock dike alignments were planned along Bayou Thunder (Location 1), Bay St. Honore/Caminada Bay (Location 2), and Bay Ronfleur (Location 3) in Jefferson and Lafourche Parishes, Louisiana. The alignments were to span approximately 20,243 linear feet along the three locations. Location 1 was to be approximately 10,681 linear feet; Location 2 approximately 5,297 linear feet, and Location 3 approximately 4,265 linear feet. The rock dike crown was planned to be at el 4.5 (NAVD 88) with a 3-ft width and a side slope of 3H:1V for construction. A geotextile reinforcement between the existing mudline and the rock fill was proposed as part of the construction. Construction of the rock dike would take place in two lifts.

Eustis Engineering's scope of service included the drilling of ten undisturbed soil borings extending to a depth of 50 feet each below the existing ground surface. All borings were completed with a drill rig mounted on a marsh buggy. Upon completion of the drilling operations, the borings were grouted with a cement-bentonite grout in accordance with the requirements of the State of Louisiana.



Samples collected in the field were returned to Eustis Engineering's laboratory where they were subjected to a series of soil mechanics laboratory tests. Testing included natural water content, unit weight, unconfined compression shear, unconsolidated undrained triaxial compression shear, Atterberg limits determinations, and percent passing the No. 200 sieve. In order to define the compressibility characteristics and stress history of the soils along the rock dike alignments, several consolidation tests were performed on undisturbed samples collected from the borings. Engineering analyses associated with the project and performed by our design team included:

- settlement analyses to address the consolidation of the foundation soils over time;

**PROJECT NO. 04**

<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
	<ul style="list-style-type: none"> <li>• estimated settlements associated with the rock fill and its ongoing submergence;</li> <li>• stability analyses of the rock dikes using GEOSLOPE International's SLOPE/W's slope stability program and Spencer's Method of Analysis; and</li> <li>• construction recommendations considering such factors as water levels, mud waves, staged rock dike construction, and maintenance.</li> </ul> <p>After completing the geotechnical exploration, Eustis Engineering was asked to present geotechnical engineering recommendations for an alternative design comprising a lightweight aggregate core (LWAC) with a riprap rock veneer to serve together as breakwater protection. Our scope of services included evaluation and design recommendations related to the LWAC alternative. Our scope of service also included evaluation of the rock dike placement adjacent to a flotation canal with dredging to el -4 (NAVD 88). The alternative was presented in an effort to reduce the amount of rock material needed for construction, assuming the LWAC in the cross-section would be beneficial from a slope stability standpoint and a settlement standpoint.</p> <p>Engineering analyses for this alternative design included settlement analyses and deep-seated global stability analyses based on furnished typical cross-sections. Our analyses evaluated potential geometries for a bank line rock dike using undrained shear strengths and following Spencer's Method of Slices. Riprap dike construction was also discussed as part of our recommendations.</p>	
<b>Completion Date (Actual or Estimated)</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for Which Firm Was Responsible:</b>
12/2018 (A)	Unknown	\$92,000

**PROJECT NO. 05**

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> <b>City of Westwego</b>  <b>The WHARF Waterline</b>  <b>Wetlands Harbor Activities</b>  <b>Recreational Facility</b>  <b>Westwego, Louisiana</b>  <b>Eustis Engineering Project No. 24498</b> </p> <p> <b>Contact Information:</b>                      City of Westwego Through                      APTIM                      4171 Essen Lane                      Baton Rouge, LA 70809                      Gene Gillen @ 225-987-7170                 </p>	<p>The City of Westwego planned the installation of two 6-in. diameter ductile iron utility casings across the West Bank and Vicinity (WBV) Hurricane and Storm Damage Risk Reduction System (HSDRRS) Levee, as part of the Wetlands Harbor Activities Recreational Facility (WHARF) project. The WBV HSDRRS Levee is operated and maintained by the Southeast Louisiana Flood Protection Authority – West, West Jefferson Levee District. The project location is in Westwego, Louisiana at the vicinity of Levee Station 804+52.</p> <p>Eustis Engineering L.L.C.'s scope of service included a review of existing soil boring data previously obtained through a Freedom of Information Act (FOIA) request. Boring logs near the project site obtained from the FOIA request were used by our project team to develop soil design parameters to use for the current project. Our team performed engineering analyses to provide settlement estimates to confirm the post-construction pipeline inverts will remain above el 14 (NAVD 88) at the crown of the levee. Eustis Engineering also performed slope stability analyses to evaluate existing conditions and pipe cover fill in accordance with the HSDRRS Design Guidelines, dated June 2012, for the proposed levee crossing considering Q-case (undrained) soil design parameters for the following water surface elevations: design hurricane still water level (SWL), project grade level (PGL), construction grade level (CGL), and low water level (LWL) hurricane conditions.</p> <p>Low water level non-hurricane conditions were also evaluated by our design team for S-case (drained) soil design parameters. The SWL, PGL, CGL, and LWL elevations for the project site were determined from information obtained through the FOIA request. In addition, Eustis Engineering compiled copies of calculations for inclusion in a letter report suitable for presentation to the U.S. Army Corps of Engineers with the Section 408 permit application. These analyses were submitted as summary printouts and as native files to facilitate the agency review.</p> <p>The results of the settlement and stability analyses establish that the proposed permit plans meet the design requirements. Thus, the City of Westwego is anticipating receiving permit approval to proceed with these improvements and implement the utility crossings.</p>	
<p align="center"><b>Completion Date</b> <b>(Actual or Estimated)</b></p>	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
<p align="center">02/2021 (A)</p>	<p align="center">Unknown</p>	<p align="center">\$13,700</p>

**PROJECT NO. 06**

**Project Name, Location, and Owner's Contact Information:**

**Nature of Firm's Responsibility:**

**City of Pascagoula  
Ingalls Avenue Improvements  
Desoto Street and Market Street  
Jackson County, Mississippi  
Eustis Engineering Project No. G0465**

**Contact Information:**  
City of Pascagoula through  
Necaise Brothers Construction Co., Inc.  
21040 Coastal Parkway  
Gulfport, Mississippi 39503  
Mr. James Necaise @228-328-4274

Utility improvements were proposed along Ingalls Avenue from Desoto Street to Market Street in Pascagoula, Mississippi. The proposed utility replacement work would require full-depth removal of the existing pavement. It would also require trench excavations to depths of approximately 13 feet below the existing pavement surface for utility installation along the 3,500 linear feet of roadway alignment. The design daily traffic was estimated to be 5,500 vehicles per day. Approximately 10% of the traffic consisted of heavy trucks.

While in the field, Eustis Engineering L.L.C.'s personnel drilled cores and performed auger borings and dynamic cone penetration tests (DCPTs). Seven pavement cores were made using a standard coring machine and a 4-in. diameter bit. The cores were performed from the existing pavement to depths up to 11 inches. A description and thickness of each pavement layer were noted at each location by our soil technician.

At each of the auger boring locations, representative soil samples were collected directly from the flights of the auger for every foot of depth or at every stratum change during the initial auger boring and by continuous sampling with a macro-core (MC5) sampler when the borings were advanced to the planned depths where possible.

The DCPTs were performed at the same respective locations as the cores and auger borings. The DCPTs were performed to depths of 4 feet below the pavement surface in general accordance with ASTM D6951. Penetration resistances for the DCPTs were recorded in terms of the number of blows from a fixed weight falling a fixed distance advancing the cone a measured distance. Plots of estimated CBR values versus depth and accumulated blows versus depth for each DCPT were presented in our report.

Once we completed the field portion of the project, we performed soil mechanics laboratory tests on samples collected in the field. Testing in Eustis Engineering's laboratory included visual classification, natural water content, organic content, and percent passing the U.S. Standard No. 200 mesh sieve. These tests were used to aid in our classification of the subsoils for preparation of the boring logs.

Our next step included the development of engineering analyses and recommendations for the project. General construction recommendations developed by our staff included:

- site preparation encompassing drainage during and after construction and demolition recommendations of existing structures and pavements not to be included in the final design;

**PROJECT NO. 06**

<b>PROJECT NO. 06</b>		
<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
	<ul style="list-style-type: none"><li>• trenching and excavation requirements in accordance with OSHA standards for open cut excavations, dewatering, and trench bottom preparation;</li><li>• pipe bedding and backfill placement associated with utility improvements including recommended backfill materials and compaction requirements;</li><li>• subgrade preparation for new roadway pavements including placement and compaction of recommended materials; and</li><li>• components and thicknesses for flexible pavements in accordance with the AASHTO Guide for Design of Pavement Structures.</li></ul>	
<b>Completion Date (Actual or Estimated)</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for Which Firm Was Responsible:</b>
10/2020 (A)	Unknown	\$6,000

**PROJECT NO. 07**

<b>PROJECT NO. 07</b>		
<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p><b>City of Biloxi Infrastructure Repair Program Biloxi, Mississippi Eustis Engineering Project Nos. G0059 and G0479</b></p> <p><b>Contact Information:</b> City of Biloxi Through Necaise Brothers Construction Co., Inc. 21040 Coastal Parkway Gulfport, Mississippi 39503 James Necaise @ 228-328-4274</p>	<p>Eustis Engineering was contacted to perform a geotechnical investigation for Phase 2 of the infrastructure repair program for the City of Biloxi in Mississippi. This portion of the program focused on the existing sewer system beginning at St. Michael's Catholic Church.</p> <p>The scope of our investigation for Phase 2 included the drilling of 52 soil borings to depths ranging from 15 to 40 feet below existing grade. The borings were made to determine subsurface conditions and stratification and to obtain samples of the various substrata. The soil samples we retrieved were preserved and transported to one of our accredited laboratories for testing. We performed soil mechanics laboratory tests to evaluate the shear strength and relative compressibility of the subsoils encountered.</p> <p>At the time of the field investigation, information was not available regarding detailed utility improvements. Therefore, only drilling and laboratory testing were performed and submitted via a data report.</p> <p>In 2021, Eustis Engineering returned to the Infrastructure Repair Program, this time providing construction materials testing for the same location. Specific services provided include concrete inspection, concrete compressive strength testing, and nuclear field density testing.</p>	
<b>Completion Date (Actual or Estimated)</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for Which Firm Was Responsible:</b>
Ongoing	Unknown	\$79,500 to date

**PROJECT NO. 08**

<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p align="center"><b>Ascension Parish Government Construction Permit Support Utilities Water Treatment Plant Donaldsonville, Louisiana Eustis Engineering Project No. 24297</b></p> <p align="center"><b>Contact Information:</b> Ascension Parish Government Through Owen and White, Inc. Post Office Box 66396 Baton Rouge, LA 70896 David Kozan @ 225-926-5125</p>	<p>The project scope comprised construction of two steel circular contact clarifiers within an existing sedimentation basin. This process required removal of the basin wall and resloping of the area. Additionally, it necessitated a deep temporary excavation in order to successfully tie into an existing 16-in. pipeline and install an additional 12-in. pipeline.</p> <p>Eustis Engineering was tasked with performing geotechnical engineering analyses to meet permitting requirements with the Lafourche Basin Levee District; the U.S. Army Corps of Engineers (USACE); and the State of Louisiana, Coastal Protection and Restoration Authority. We had previously performed a geotechnical exploration close to the project site and were able to use that data for these analyses, rendering new geotechnical exploration unnecessary. We also completed a Freedom of Information Act (FOIA) request to obtain additional data for reference in our evaluations.</p> <p>Our analyses centered on the potential for seepage, heave, and levee instability resulting from excavated cuts made to provide access to the necessary plumbing work and included:</p> <ul style="list-style-type: none"> <li>• an analysis of the design methodology;</li> <li>• subsoil conditions for seepage analyses;</li> <li>• assumptions regarding levee geometry;</li> <li>• landside permeabilities and thicknesses;</li> <li>• distance to effective seepage entrance and width of levee;</li> <li>• distance to effective seepage exit;</li> <li>• seepage analyses results; and</li> <li>• deep-seated global stability analyses by the USACE's Lower Mississippi Valley Division Method of Planes and Spencer's Method of Slices.</li> </ul> <p>We summarized our results in a letter report that included a calculations package to facilitate the agency review.</p>	
<p align="center"><b>Completion Date (Actual or Estimated)</b></p>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for Which Firm Was Responsible:</b>
<p align="center">02/2020 (A)</p>	<p align="center">Unknown</p>	<p align="center">\$9,000</p>

**PROJECT NO. 09**

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> <b>Plaquemines Parish</b>  <b>East Bayou Road</b>  <b>Water Main Extension</b>  <b>Plaquemines Parish, Louisiana</b>  <b>Eustis Engineering Project</b>  <b>Nos. 22523 and 22911.00, .01</b> </p> <p> <b>Contact Information:</b>                      Plaquemines Parish Government Through                      Burk-Kleinpeter, Inc.                      4176 Canal Street                      Suite 200                      New Orleans, Louisiana 70119                      Robert Bredberg @ 504-486-5901                 </p>	<p>A 12-in. diameter water main was to be installed across the Intracoastal Waterway paralleling the Algiers Canal. Eustis Engineering was contracted to evaluate the potential impact of fill placed on the levee to cover the new water main at the site in Plaquemines Parish. Using geotechnical data obtained from the U.S. Army Corps of Engineers, Eustis Engineering performed stability analyses of the fill placed to cover the pipeline.</p> <p>Engineering analyses completed by Eustis Engineering's design team indicated the proposed water main crossing the east bank and west bank levees may be covered with 2 to 3 feet of embankment fill as proposed while maintaining a minimum factor of safety against global stability failure. We analyzed the stability of the existing east bank and west bank levees and the banks of the canal, under the additional load of the proposed pipe cover fill, using the USACE's Lower Mississippi Valley Division's Method of Planes software.</p> <p>Our design team also evaluated potential settlement of the east bank and west bank levees at the proposed pipeline crossing assuming 3 feet of fill would be placed on top of the levees.</p> <p>Eustis Engineering made recommendations regarding site preparation, drainage during construction, clearing and stripping, subgrade preparation, embankment fill for the pipeline cover, fill compaction, and quality control during construction.</p> <p>Finally, Eustis Engineering was requested to perform supplemental engineering analyses to address comments specific to the geotechnical aspects of the permit application.</p> <p>For both the initial letter report and supplemental letter report, we provided a summary of our analyses results and included native files to facilitate agency review.</p>	
<p align="center"><b>Completion Date</b> <b>(Actual or Estimated)</b></p> <p align="center">09/2019 (A)</p>	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
	<p align="center">Unknown</p>	<p align="center">\$19,000</p>

**PROJECT NO. 10**

<b>Project Name, Location, and Owner's Contact Information:</b>	<b>Nature of Firm's Responsibility:</b>	
<p align="center"> <b>Premier Environmental, LLC</b>  <b>Proposed Waterline Crossing</b>  <b>Pointe à la Hache, Louisiana</b>  <b>Eustis Engineering Project No. 23817</b> </p> <p align="center"> <b>Contact Information:</b>  Premier Environmental, LLC  629 Village Lane South  Mandeville, Louisiana 70471  Doyle Johnson @ 985-626-8758 </p>	<p>This project consisted of installing an 8-in. waterline across the New Orleans to Venice Reach C levee (back levee) and under LA Highway 39 in Plaquemines Parish, Louisiana. The client proposed excavating a 10' × 10' × 10' jack-and-bore pit between LA Highway 39 and the protected side levee toe. Eustis Engineering was retained to support Premier Environmental, LLC's permit application for this endeavor, specifically by providing stability analyses associated with the jack-and-bore pit.</p> <p>Relevant geotechnical data were sourced from a previous exploration by Eustis Engineering adjacent to the current site, supplemented with data obtained from the U.S. Army Corps of Engineers (USACE) via a Freedom of Information Act Request (FOIA). This data indicated, but could not conclusively confirm, the existence of a sand core beneath the levee centerline and a sand stratum at the levee toe. Therefore, we performed two sets of analyses to evaluate the sensitivity of the requests to these potential elements.</p> <p>The stability analyses were performed by our design team using the USACE's Stability with UPLIFT program based on the Lower Mississippi Valley Division's Method of Planes, in conjunction with hand calculations using the soil design parameters that we deemed to show the most critical results. The geotechnical analyses performed by our team included an evaluation of global stability for the existing levee conditions considering the alternate stratigraphies, critical soil design parameters, the jack-and-bore pit, and potential heave.</p> <p>We transmitted our results in a summary report along with electronic files in their native format to facilitate agency review of the permit package.</p>	
<p align="center"><b>Completion Date</b> <b>(Actual or Estimated)</b></p>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for Which Firm Was Responsible:</b>
<p align="center">08/2018 (A)</p>	<p align="center">Unknown</p>	<p align="center">\$2,800</p>

**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-seven 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 single two-man office to approximately 115 individuals in five offices, 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-effective and timely manner.

*Eustis Engineering is headquartered in Metairie, Louisiana, with branch offices in Baton Rouge and Lafayette.* We also operate branch offices in Gulfport, Mississippi and 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, downhole vane, and Geoprobe®);
- soil mechanics laboratory tests;
- field instrumentation and monitoring;
- non-destructive testing of piles and shafts including dynamic pile testing, crosshole 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
Unique Entity Identifier (UEI)	R83MG9NLTMS4
CAGE Code	4MOP2
Firm License - Louisiana	EF.0003558
Firm License - Mississippi	2078
Firm Registration – Texas	13895

Eustis Engineering has worked on over 28,000 projects since its inception. This work history gives our engineering staff unparalleled familiarity with the foundation conditions in the Gulf Coast. *Included in this experience is over 800 projects performed for the Jefferson Parish Government and over 2,650 projects within Jefferson Parish for other owners/clients on both the east and west banks of the parish.*

## ENGINEERING SERVICES

Eustis Engineering has engineering capabilities to fulfill the requirements of nearly any project, including development of new sites and retrofits of existing sites. As evidenced by the included project write-ups in this package, our experience with utility relocations have included explorations to facilitate horizontal directional drilling (HDD) operations; jack-and-bore operations and utility trenching/excavation. We can develop geotechnical recommendations for temporary retaining structures/cofferdams to support these excavations, including sheet pile tips for cantilever and braced walls. We evaluate earth pressures, potential heave and dewatering, and bedding requirements.

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 includes estimates of vertical capacity for groups. We also perform lateral analyses of individual piles and pile groups using LPILE® and GROUP® software.

We perform settlement studies including estimates of settlement and time-rate of settlement with and without wick drains to enhance consolidation. 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.

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.

### Engineering Staffing

Our engineering staff has 16 master's degrees in Civil Engineering, Engineering, Engineering Management, Geology, 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, is very important to Eustis Engineering. Our engineers also regularly present at technical conferences. We encourage and fund our staff for these activities and programs.

Employee	Education	Experience	
		Years with Eustis Engineering	Total Years
<b>Professional Engineers (P.E.)</b>			
Benjamin M. Cody	M.S. / Civil Engineering	21	25
Brian A. Deschamp	B.S. / Civil & Environmental Engineering	11	11
	B.A. / Business Administration		
James J. Hance	M.S. / Civil Engineering	19	23
	M.B.A. / Business Administration		
Chad L. Held	M.S. / Civil Engineering	32	32
Matthew K. Morales	B.S. / Civil Engineering	14	14
Tomas K. Morales	B.S. / Civil Engineering	9	9

Travis R. Richards	M.S. / Engineering	17	24
	M.S. / Engineering Management		
	Coastal Engineering Certificate		
Chad D. Roe	M.S. / Civil Engineering	0	10
Gwendolyn P. Sanders	M.S. / Engineering	30	30
Sanjay S. Shahji	M.S. / Civil Engineering	0.5	17
Shaun R. Simon	M.S. / Civil Engineering	23	23
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	5	5
Henry C. Worley	M.S. / Engineering	5	6.5
	Coastal Engineering Certificate		
<b>Engineering Interns (E.I.)</b>			
Patrick T. Duckworth	M.S. / Civil Engineering	2	2
<b>Engineering Graduates</b>			
Alvaro E. Carvajal	B.S. / Civil Engineering	.5	.5
Joseph P. DiGiovanni	B.S. / Civil Engineering	0	0
Lesley L. Reitmeyer	B.S. / Civil Engineering	14	14
<b>Geologists</b>			
Matthew J. Blasini, G.I.T.	B.S. / Geology	4	5
Andrew A. Herr	B.S. / Geology	0	1
Nathan A. Quick, P.G.	M.S. / Geology	1.5	6.5
<b>Total Years of Experience</b>		<b>233.5</b>	<b>278.5</b>

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

### **Cone Penetration Testing Capabilities**

Eustis Engineering owns two dedicated track-mounted Cone Penetration Testing (CPT) rigs and operates four other multi-purpose rigs capable of performing CPTs. Operators are either specifically trained engineering technicians or engineers who perform 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 CPTs and using CPT technology since the early 2000s.

A CPT can be accomplished rapidly with four or five being performed in the same time frame as a standard geotechnical boring; therefore, CPTs are 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 use 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 responses 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 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 crosshole/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. We also have portable units that can be used inside structures planned for retrofit/renovations.

### Field Exploration Personnel

We can provide up to eight 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	James Cordes	Rene Davidson	Eric Held	James Lubben	George Reitmeyer	Lawrence Rome	Michael Whipkey
Hand Auger Borings	X	X	X	X	X	X	X	X
General Type (3-in. Diameter Borings)	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	
Undisturbed Type (5-in. Diameter Borings)	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	
Location Information (Latitude, Longitude)		X	X	X	X		X	X
Set Permanent Benchmarks		X	X	X	X		X	
Install Instrumentation		X	X	X	X		X	
Cone Penetration Tests				X		X		
Geoprobe Sampling	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 and downhole vanes 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**

In addition to our drill rigs, Eustis Engineering owns and operates a vibracore that can be attached to small equipment to access remote locations. We also 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 D 6951.

## **Drone Capabilities**

Eustis Engineering utilizes small Unmanned Aerial Systems (sUAS), more commonly known as "drones," to enhance our services. We use 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 the production of boring logs and data entry.

Eustis Engineering has also 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 provides Eustis Engineering's team members access to a data source via connected applications or a web portal, increasing collaboration and

efficiency. 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 the efficient development of 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 qualified technicians to sample construction materials and 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	Concrete	Concrete
Masonry	Masonry	Soil
Soil	Spray Fire-Resistive Material	Spray Fire-Resistive Material

Our laboratory in Houston, Texas, has capabilities in the areas of Aggregate, Concrete, Masonry, and Soil and is currently pursuing accreditation through A2LA.

To further show 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. Timmy Holleman, dedicated Quality Control Manager, oversees the calibration of our equipment and maintenance of our quality system. The

biggest reward of our quality system is knowing our clients are confident our testing laboratories produce the highest quality results and conform to state and national standards.

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

**Signature:**   
**Title:** President

**Print Name:** Gwendolyn P. Sanders, P.E.  
**Date:** 17 April 2023

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

<b>Name:</b>	<b>Public Address:</b>
Eustis Engineering L.L.C.	Eustis Engineering L.L.C. c/o Kathy D. LeRouge 3011 28th Street Metairie, Louisiana 70002

**License/Certificate Information w/ Supervision**

<b>License</b>	<b>Status</b>	<b>First Issuance Date</b>	<b>Expiration Date</b>	<b>Supervisor(s)</b>
EF.0003558	Active	09/13/2006	03/31/2025	Mr. Benjamin Mcmillan Cody # PE.0030292 ; Mr. Travis Russell Richards # PE.0030992



# Trigon

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