

Trigon

STATEMENT OF QUALIFICATIONS



Professional Engineering Services Related
to the Design for the Rehabilitation of the
Transcontinental & Belle Lift Station (E8-1)
for Jefferson Parish

In Association with:



May 2021



Trigon Associates, llc
1515 Poydras Street, Suite 2200
New Orleans, Louisiana 70112
T. 504-585-5767 • F. 504-585-5747
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May 26, 2021

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

Re: Rehabilitation of the Transcontinental & Belle Lift Station (E8-1) - Resolution No. 137449

Dear Council Members:

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

Trigon is a Louisiana Small Business Enterprise (SBE) and a woman-owned business specializing in providing engineering, consulting and management services. Our principals have over 110 years of combined experience with applicable municipal and public works projects, most of it from the sewer, water, drainage/stormwater and transportation areas, including significant experience with federal, state, and local grant programs. Trigon is qualified to perform and successfully complete sewer-related projects for the Parish, with a few of our key qualifications as follows:

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

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

Sincerely,

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

Michelle Herbert
Chief Executive Officer

TEC Professional Services Questionnaire

A. Project Name and Advertisement Resolution Number:

Rehabilitation of the Transcontinental & Belle Lift Station (E8-1)
Resolution No. 137449

B. Firm Name & Address where Project work will be performed:



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

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

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

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

SAME AS ITEM C.

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

<u>3</u> Administrative	<u> </u> Estimators	<u> </u> Specification Writers
<u>1</u> Architects (Licensed)	<u> </u> Geologists	<u>1</u> Structural Engineers
<u> </u> Chemical Engineers	<u> </u> Geotechnical Engineers	<u> </u> Graduate Engineers
<u>7</u> Civil Engineers	<u> </u> Interior Designers	<u>2</u> Project Managers
<u>2</u> Construction Inspectors	<u>1</u> Landscape Architects	<u> </u> Clerical
<u> </u> Ecologists	<u> </u> Land Surveyor	<u>1</u> Grant/Funding Specialist
<u>1</u> Electrical Engineers	<u>1</u> Mechanical Engineers	<u> </u> Sanitary Engineers
<u>1</u> Engineer Intern	<u>1</u> Environmental Engineers	<u>8</u> Other
<u> </u> Professional Land Surveyors		<u>30</u> TOTAL

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

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

TEC Professional Services Questionnaire

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

1. N/A

2.

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

YES _____ NO _____

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

Name & Address:	Specialty:	Worked with Firm Before (Yes or No):
1. BFM Corporation, LLC 534 Williams Boulevard Kenner LA 70062 504-468-8800	Surveying	Yes
2. Eustis Engineering Services, LLC 3011 28th Street Metairie, LA 70002 (504) 834-0157	Geotechnical Engineering	Yes
3.		

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:

Name & Title:

Greg Kolenovsky, PE, PMP, PgMP
Vice President

Project Assignment:

Principal in Charge

Name of Firm with which associated:



Years' experience with this Firm:

12

Education: Degree(s)/Year/Specialization:

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

Active registration: Year first registered/discipline:

2002, Civil Engineer, Louisiana (also registered in AL, AR, FL, MS, OK, TX and D.C.)
2005, Project Management Professional (PMP), Project Management Institute
2010, Program Management Professional (PgMP), Project Management Institute

Other experience and qualifications relevant to the proposed Project:



Mr. Kolenovsky has over 25 years of planning; design; and project, program and construction management experience. He has significant experience in the management of sewer, water, 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 treatment, storage, and distribution projects. He has managed and executed a number of disaster recovery and hazard mitigation projects, including many related to sewer and 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

E. 9th Avenue Lift Station Replacement; Covington, LA. Review and QA/QC for site survey, preliminary and final design, bidding and construction phase services associated with the removal of the existing lift station pumps, rehabilitation of the wet well, installation of two (2) new submersible pumps, upgrades to the control panel and various site improvements such as new fencing and lighting.

TEC Professional Services Questionnaire

PROFESSIONAL IN CHARGE OF PROJECT:

Kolenovsky, continued.

Other experience and qualifications relevant to the proposed Project:

East Bank Wastewater Treatment Plant Return Activated Sludge (RAS) Pipeline and Pump Station Modifications, New Orleans, LA. Principal-in-Charge for Trigon's efforts for design of modifications to the discharge header in the North RAS Pump Station and replacement of the associated RAS pipeline to the raw sewage channel at the S&WB's 200 MGD East Bank WWTP. Also included permanent relocation of the infrastructure where sludge from the West Bank WWTP is received and processed.

FY 12 Sewer Pump Station Rehabilitation, Slidell, LA. Review and QA/QC for design of rehabilitation/replacement measures to six (6) sewer stations and associated force mains. Five were converted from suction-lift to submersible stations, and an existing submersible station was rehabilitated. Design included hazard mitigation items such as elevating electrical/controls above flood elevation. This work was funded by an EPA grant through the Lake Pontchartrain Basin Restoration Program.

FY14 Sewer System Rehabilitation; Slidell, LA. Project Manager for this project to reduce contamination in the Bayou Bonfouca and Bayou Vincent drainage basins caused by infiltration and inflow (I/I) and sanitary sewer overflows (SSOs), which end up in Lake Pontchartrain. A range of assessment and evaluation methods were used, including manhole inspections, smoke testing and CCTV inspection of gravity sewer lines. This work was partially funded by an EPA grant through the Lake Pontchartrain Basin Restoration Program.

Sewage Lift Station No. 24 Improvements; Buras, LA. Project manager/engineer for investigation and assessment of a three-pump, submersible sewage lift station damaged as a result of Hurricane Katrina. Flooding damaged various components, including, among other things, the power supply, electrical and controls systems, piping and valves. Developed physical improvement and capacity upgrade recommendations.

Hurricane Harvey Disaster Recovery for Wastewater Lift Stations; City of Houston, TX. Providing QA/QC review for detailed asset inventories, damage assessments, and documentation for 36 lift stations damaged during the Hurricane Harvey disaster. As the prime consultant, Trigon is responsible for overall project management and ensuring compliance with state and federal reimbursement guidelines. Trigon is also serving as a subconsultant providing similar services for 65 other lift stations throughout the City.

Al Yamoun and Qabatia Wastewater Treatment Plants, Lift Stations and Collection Systems, West Bank. Oversaw Trigon's efforts on the design of two (2) new wastewater treatment plants and associated sewage collection systems. The WWTPs will have capacities of approximately 5 MGD and 7 MGD, respectively. Primary process units designed by Trigon for each plant included influent pump stations, headworks, grit removal and classification, chlorine contact basins and effluent disc filters.

South Shore Basin Sewer Rehabilitation Design, New Orleans, LA. Served as technical advisor and Principal engineer on the design of multiple projects for the rehabilitation of sanitary sewerage facilities, including, manholes, gravity sewers and laterals via various trenchless and traditional excavated methods. This project resulted in approximately \$10-\$15 million in sewer rehabilitation construction.

Braithwaite WWTP and Lift Station Improvements; Plaquemines Parish, LA. Project Manager for engineering, design and construction services on this project, which generally included replacing an existing WWTP damaged by Hurricane Katrina and repairing associated lift stations.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Regina Cassanova, PE
Principal Engineer/Project Manager

Project Assignment:

Project Manager

Name of Firm with which associated:



Years' experience with this Firm:

9

Education: Degree(s)/Year/Specialization:

BS in Civil Engineering, University of New Orleans, 2003

Active registration: Year first registered/discipline:

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

Other experience and qualifications relevant to the proposed Project:



Ms. Cassanova is a Professional Engineer with over 20 years experience in the design and construction of municipal water and wastewater systems and treatment facilities. Additional skills include project management of design and construction projects, and program management related capital improvements. Prior to joining Trigon, she served as a process engineer for two (2) internationally recognized engineering firms within a Membrane National Technology Practice Group and a Water/Wastewater Treatment Plants specialty group. Ms. Cassanova has experience with projects in the United States, Australia, Haiti, Jordan, Libya and Palestine.

RELEVANT PROJECT EXPERIENCE

Braithwaite WWTP and Lift Station Improvements; Plaquemines Parish, LA. Project Engineer for engineering, design and construction services on this project, which generally included replacing an existing WWTP damaged by Hurricane Katrina and repairing associated lift stations.

East 9th Avenue Lift Station, Covington, LA. Project engineer for site survey, preliminary and final design, bidding and construction phase services associated with the removal of an existing lift station pumps, rehabilitation of the wet well, installation of two (2) new submersible pumps, upgrades to the control panel and various site improvements such as new fencing and lighting.

TEC Professional Services Questionnaire

Cassanova, continued.

Other experience and qualifications relevant to the proposed Project:

FY 12 Sewer Pump Station Rehabilitation, Slidell, LA. Project Manager for the design of rehabilitation/replacement measures to six (6) sewer stations and associated force mains. Five were converted from suction-lift to submersible stations, and an existing submersible station was rehabilitated. Design included hazard mitigation items such as elevating electrical/controls above flood elevation. This work was funded by an EPA grant through the Lake Pontchartrain Basin Restoration Program.

Improvements to Multiple Sewage Pumping/Lift Stations, Shreveport, LA. Design and construction services for the upgrade of two (2) sewage pumping stations. Agurs will be a 3-pump station with firm capacity of 3,000 gpm (4.3 MGD), and the station discharges through 8,000' of 24" force main. Lucas is a 3-pump station with firm capacity of 20,000 gpm (29 MGD), and the station discharges to a 48" force main that manifolds with other stations. Pumps in both stations are driven by VFDs. Permanent bypass structures were also being constructed at both stations to allow flow to be diverted around the stations. Included preparation of comprehensive O&M manuals for both stations.

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

Katrina-Related Sewer System Repairs, Slidell, LA. Project to develop construction specifications and drawings for repairs to gravity sewers throughout the City. Rehabilitation measures include excavated point repairs and cured-in-place pipe lining.

South Shore Basin Sewer Rehabilitation Design, New Orleans, LA. Design of multiple projects for the rehabilitation of sanitary sewerage facilities, including, manholes, gravity sewers and laterals via various trenchless and traditional excavated methods. The project resulted in approximately \$10-\$15 million in sewer rehabilitation construction.

Modifications to Return Activated Sludge PS and Pipeline, New Orleans, LA. Project manager and engineer of record for the design of modifications to the discharge header in the North RAS Pump Station and replacement of the associated RAS pipeline to the raw sewage channel at the Sewerage and Water Board of New Orleans' 200 MGD East Bank Sewage Treatment Plant. The RAS pipeline had experienced an unexpected breakage and the work was performed in an expedited manner to address the emergency situation. Also included permanent relocation of the infrastructure where sludge from another WWTP is received for treatment.

Multiple Pump Station (Highland Road – Kenilworth Parkway) Rehabilitation Project, City of Baton Rouge and Parish of East Baton Rouge, LA. Ms. Cassanova was the project manager/engineer for the City of Baton Rouge Multiple Pump Station (Highland Road – Kenilworth Parkway) Rehabilitation Project which was a part of the Baton Rouge SSO Program. The project included the rehabilitation of nine pump stations ranging in size from 375 to 5,150 gallons per minute (gpm) and design of two new pump stations with flows up to 9,725 gpm. Ms. Cassanova coordinated the design between four offices and four subconsultants. Opinion of Probable Construction Cost: \$10,000,000

Sewer System Evaluation and Rehabilitation Program, Sewerage and Water Board of New Orleans, LA. Assisted in execution of the \$630M EPA-mandated SSERP for the S&WB. Assisted Resident Engineers managing 11 construction contracts totaling \$23M in sewer rehab, which also included significant coordination with the City's DPW for restoration.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Lisbeth Nagrath, PE
Senior Engineer

Project Assignment:

Senior Project Engineer

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

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Education: Degree(s)/Year/Specialization:

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

Active registration: Year first registered/discipline:

2011, Civil Engineer, Louisiana

Other experience and qualifications relevant to the proposed Project:

Ms. Nagrath is a Professional Engineer with over 17 years experience that includes a range of design and civil/environmental engineering. She has worked on a variety of municipal infrastructure projects and facilities, including water distribution systems, wastewater collection systems, pump/booster stations and water/wastewater treatment plants. Additionally, Ms. Nagrath is experienced with environmental assessments, permitting and regulatory compliance matters.

RELEVANT PROJECT EXPERIENCE

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

TEC Professional Services Questionnaire

Nagrath, continued.

Other experience and qualifications relevant to the proposed Project:

East 9th Avenue Lift Station; Covington, LA. Project Manager for site survey, preliminary and final design, bidding and construction phase services associated with the removal of the existing lift station pumps, rehabilitation of the wet well, installation of two (2) new submersible pumps, upgrades to the control panel and various site improvements such as new perimeter fencing and site lighting.

FY12 Sewer Pump Station Rehabilitation; Slidell, LA. Project Engineer for rehabilitation/replacement measures to six (6) sewer stations. Five were converted from suction-lift to submersible stations, and an existing submersible station was rehabilitated. Design included hazard mitigation items such as elevating electrical/controls above flood elevation. Construction was completed recently in Summer of 2015.

Improvements to Multiple Sewage Pumping/Lift Stations; Shreveport, LA. Design support and construction phase services for the upgrade of two (2) sewage pumping stations. Agurs was upgraded to a 3-pump station with firm capacity of 3,000 gpm (4.3 MGD), and the station discharges through 8,000' of 24" force main. Lucas is a 3-pump station with firm capacity of 20,000 gpm (29 MGD), and the station discharges to a 48" force main that manifolds with other stations. Pumps in both stations are driven by VFDs, and Lucas has an on-site bar screen and odor control system. Permanent bypass structures were constructed at both stations to allow flow to be diverted around the stations, if necessary. Ms. Nagrath prepared comprehensive O&M manuals for the stations, including operating procedures for the City's operators.

East Bank Wastewater Treatment Plant Return Activated Sludge Pipeline and Pump Station Modifications; New Orleans, LA. Lead Project Engineer for design of modifications to the discharge header in the North RAS Pump Station and replacement of the associated 30-inch RAS pipeline to the raw sewage channel at the S&WB's 200 MGD EBSTP. Also included permanent relocation of the infrastructure where sludge from the WBSTP is received.

Carrollton Basin Sewer Rehabilitation Design and Permitting, Sewerage & Water Board of New Orleans, LA. As Project Engineer, Ms. Nagrath coordinated the preparation of contract documents for 16 construction packages, which included comprehensive rehabilitation of gravity sewers by point repairs, service repairs, full line replacements, cured-in-place-pipe (CIPP) lining, and manhole rehabilitation. Efforts included GIS coordination, review of CCTV inspection data, defect coding, data analysis, conflict evaluation, quantity calculations, cost estimating, and construction contract document preparation. Additionally, Ms. Nagrath led permitting efforts for the 16 construction packages, which included Department of Public Works Service Cuts Permits and Orleans Levee District Permits. This work also included coordinating with Entergy and Cox Communications for utility reviews.

Sewer System Evaluation and Rehabilitation Program, New Orleans, LA. Project Manager for inspections and hydraulic testing of 75 S&WB sewage pumping stations.

South Shore Basin and Ninth Ward Basin Sewer Rehabilitation Design; New Orleans, LA. Design and construction phase services for the rehabilitation of sewer facilities in two sewerage basins of New Orleans – the South Shore Basin and the Ninth Ward Basin.

East Bank WWTP Effluent Pump Station Improvements; New Orleans, LA. Project Manager for the engineering, design and construction phase services for this project that involves improvements to Effluent Pump Station Modifications at the Sewerage & Water Board's 200 MGD East Bank Wastewater Treatment Plant (EBWWTP).

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Archana Sharma, PE, LEED AP
Project Engineer

Project Assignment:

Project Engineer

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

2

Education: Degree(s)/Year/Specialization:

MS, Environmental Engineering, University of Houston, 2007
B. Tech., Chemical Engineering, Anna University, India, 2005

Active registration: Year first registered/discipline:

2010, Civil Engineer: Texas, #107725
Leadership in Energy and Environmental Design (LEED) Accredited Professional

Other experience and qualifications relevant to the proposed Project:

Ms. Sharma has over 13 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 Master's degree in Environmental Engineering from the University of Houston. Archana is a licensed Professional Engineer in the State of Texas and a Leadership in Energy and Environmental Design Accredited Professional (LEED AP). Her project experience includes design and construction phase services for collection/distribution systems, pumping stations, water treatment plants and wastewater treatment plants, including process design, mechanical design and general civil engineering. She also has experience in the design of processes/facilities for reclaimed water from wastewater treatment plant effluent. She is well versed with regulatory requirements and has experience in developing permit applications and related documents and coordinating with the agencies for project permitting needs.

RELEVANT PROJECT EXPERIENCE

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

TEC Professional Services Questionnaire

Sharma, continued.

Other experience and qualifications relevant to the proposed Project:

Magnet and Westpark Lift Station Lift Station Renewal and Replacement Design, City of Houston; Houston, TX. Ms. Sharma served as a Lead Engineer and Engineer of Record for design of lift station improvements. She also served as the task manager and point of contact for interdisciplinary coordination among engineering support staff, vendors, sub-consultants and the client.

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 force mains to develop recommendations. She prepared Life cycle cost analysis for the alternatives to determine the most cost-effective recommendation.

Lift Station Abandonment and Diversion, City of Houston; Houston, TX. Ms. Sharma served as a Lead Engineer responsible for construction coordination. She reviewed vendor submittals and shop drawings, facilitated Requests for Information (RFIs) and created change order requests during construction.

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.

Disaster Mitigation for Wastewater Facilities Induced by Hurricane Harvey, Package 1 – Kingwood Area; City of Houston, TX. Ms. Sharma is serving as Project Manager for Trigon providing professional engineering services as a subconsultant related to consolidation options for wastewater treatment plants and collection systems in the Kingwood service area. The study area is comprised of three (3) wastewater treatment plants (WWTP), forty-four (44) lift stations (LS), two hundred and sixty-nine (269) miles of gravity sewers and twenty-two (22) miles of sanitary sewer force mains. In addition to managing Trigon's effort on the project, Ms. Sharma prepared preliminary engineering plans for new force mains to convey wastewater from existing Kingwood West WWTP (2 MGD), also known as the MUD #48 WWTP, and the Forest Cove WWTP (0.95 MGD) to the Kingwood Central Lift Station that pumps wastewater to the Kingwood Central WWTP (7 MGD). This consolidation option allows for elimination/decommission of Kingwood West and Forest Cove WWTP. Ms. Sharma developed plans, preliminary engineering report and Opinion of Probable Construction Cost Estimates (Class 5) for the project. Ms. Sharma also performed a review of applicable codes and regulations and hydraulic calculations for force main design to meet TCEQ velocity criteria for permitted capacity.

Wastewater Treatment Plant Improvements, Bridgestone Municipal Utility District; Houston, TX. Ms. Sharma served as the Project Manager and Engineer of Record for design of miscellaneous improvements at an existing wastewater treatment plant and onsite lift station. Responsible for designing the lift station bypass system necessary for the improvements, preparing sealed plans and specifications and bidding and construction coordination.

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

4

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 14 years experience. She has been responsible for process design, mechanical design and civil engineering, collaborating with multidisciplinary teams on municipal sewer systems, water treatment facilities and transmission 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

East 9th Avenue Lift Station, Covington, LA. Project Engineer for this project that consisted of replacing/converting an existing suction-lift sewage pumping station to a submersible pump station.

Modifications to Return Activated Sludge PS and Pipeline, New Orleans, LA. Project engineer for the design of modifications to the discharge header in the North RAS Pump Station and replacement of the associated RAS pipeline to the raw sewage channel at the S&WB's 200 MGD East Bank Sewage Treatment Plant. Also includes permanent relocation of the infrastructure where sludge from the West Bank Sewage Treatment Plant is received.

TEC Professional Services Questionnaire

Lyons-Villatoro, continued.

Other experience and qualifications relevant to the proposed Project:

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

East Bank Wastewater Treatment Plant Bleach Disinfection System, New Orleans, LA. Led efforts to design a bleach disinfection system to 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. Changes in the ability to receive gaseous chlorine via railway created the need for another disinfection method to be available for use at the WWTP.

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

Engineers Road/Cazalard Road Hazard Mitigation Drainage Improvements, Belle Chasse, LA. Project Engineer for preliminary and final design phases of this FEMA-funded HMGP project. Improvements generally consisted of new subsurface drainage, improving ditches and canals, replacing multiple culverts, and constructing a new drainage pump station to replace a temporary pump station.

Abita Nursery Drainage Study; St. Tammany Parish, LA. Project Engineer for a hydrologic and hydraulic (H&H) study of an approximately 130-acre area, inclusive of the Abita Nursery Subdivision and surrounding area. The area experienced nuisance flooding due to inadequate drainage, and this project aims to remedy the situation. Drainage infrastructure in the project area consisted primarily of a surface drainage system of ditches within the rights-of-way and culverts beneath numerous driveways and access roads into private property.

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

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

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

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Barry Breaux, EI
Engineering Intern

Project Assignment:

Engineering Support

Name of Firm with which associated:



Years' experience with this Firm:

3

Education: Degree(s)/Year/Specialization:

BS in Civil Engineering, Louisiana State University, 2017

Active registration: Year first registered/discipline:

2018, Engineering Intern, Louisiana

Other experience and qualifications relevant to the proposed Project:



Mr. Breaux is an environmental engineer intern with 5 years of experience from research, internships and design competitions prior to his joining Trigon 3 years ago. 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. Mr. Breaux now performs a range of engineering, design and general project support activities for Trigon. He is a member of the Louisiana Water Environmental Association, the National Society of Collegiate Scholars, and Engineers Without Borders.

RELEVANT PROJECT EXPERIENCE

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

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

TEC Professional Services Questionnaire

Breaux, continued.

Other experience and qualifications relevant to the proposed Project:

Hurricane Harvey Disaster Cost Recovery for Wastewater Lift Stations; City of Houston, TX. Mr. Breaux is providing engineering support services related to detailed asset inventories, damage assessments, and documentation for 36 lift stations damaged during the Hurricane Harvey disaster.

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

Site Plan Development for Daybrook Fisheries; Empire, LA. Trigon performed various services/projects for Daybrook Fisheries, Inc. at their processing facility in southern Plaquemines Parish, which is situated between the Mississippi River and the Buras Navigation Canal. One project consisted of development of a comprehensive site plan for the entire property, which generally included surveying the property; identifying all major property features such as buildings, equipment, storage tanks, docks, loading and unloading facilities, river intake pump station, river outfall, etc.; and creating a scale-drawing of the facility with identification of all features. Mr. Breaux provided services to check the survey data and incorporate it into the drawing(s), including site visits to verify the accuracy of information.

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

Modifications to Return Activated Sludge PS and Pipeline, New Orleans, LA. Provided engineering support services for the design of modifications to the discharge header in the North RAS Pump Station and replacement of the associated RAS pipeline to the raw sewage channel at the S&WB's 200 MGD East Bank Sewage Treatment Plant. Also included permanent relocation of the infrastructure where sludge from the West Bank Sewage Treatment Plant is received.

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

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

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Wagner Enrique
Designer

Project Assignment:

CADD

Name of Firm with which associated:

The logo for Trigon, featuring the word "Trigon" in a blue serif font with a small orange triangle above the letter 'i'.

Years' experience with this Firm:

9

Education: Degree(s)/Year/Specialization:

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

Active registration: Year first registered/discipline:

Other experience and qualifications relevant to the proposed Project:



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

RELEVANT PROJECT EXPERIENCE

East 9th Avenue Lift Station; Covington, LA. Designs for the removal of the existing lift station pumps, rehabilitation of the wet well, installation of two (2) new submersible pumps, upgrades to the control panel and various site improvements such as new perimeter fencing and site lighting.

TEC Professional Services Questionnaire

Enrique, continued.

Other experience and qualifications relevant to the proposed Project:

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.

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

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 underway in one area, design is ongoing in three, and design is anticipated to start in the remaining area later this year. Approximately \$12M to \$15M of construction is anticipated in these areas. Trigon is representing the owner for all work within these areas.

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.

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).

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:

7

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 23 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

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.

TEC Professional Services Questionnaire

Fleming, continued.

Other experience and qualifications relevant to the proposed Project:

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. Onsite Construction Inspector: Serving as Onsite Construction Inspector for 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. Construction is scheduled for completion in 2018.

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.

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.

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.

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.

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:	
1. FY12 SPS Rehabilitation; Slidell, LA City of Slidell Blaine Clancy, PE – City Engineer 985.646.4270 	Trigon was selected by the City of Slidell as the Prime Engineer for the assessment, design and construction of improvements of six (6) sewer pump stations. Five (5) were converted from suction-lift to submersible, while one (1) was an existing submersible that was fully rehabilitated. The wet wells of each station were renovated and coated in accordance with the City's standards and preferences. Replacement of the mechanical systems, electrical and control systems, and various site improvements was included. Electrical and control systems for the new stations were set above flood stage to mitigate the potential for damage and discharges due to future flood events. Trigon provided the following general services: design of improvements, site visits to verify field conditions and preparation of contract documents; bid phase services for the construction contract; construction phase services, including the pre-construction conference, technical review of submittals, responding to RFIs, and closeout procedures. The project is funded via a federal grant from the US EPA through the University of New Orleans and Lake Pontchartrain Basin Foundation.	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2015 (actual)	\$850k	\$850k

PROJECT NO. 2

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
2. E. 9th Avenue Lift Station Improvements; Covington, LA City of Covington Daniel P. Hill, PE – [Fmr]City Engineer 985.464.4270 	Trigon was selected by the City of Covington as the prime engineer for improvements to the E. 9th Avenue Lift Station (LS#4). This particular station was one of the City's oldest lift stations, and though it appeared to have sufficient hydraulic capacity, it is in need of various improvements. The project generally consisted of replacing the current station, converting it from a suction-lift arrangement to a submersible station, and improving the site for better operability, ease of maintenance and up-time in the event of an emergency. Efforts included site surveying, preliminary and final design, bidding and construction phase services associated with the removal of the existing lift station pumps, rehabilitation of the wet well, installation of two (2) new submersible pumps, upgrades to the control panel and various site improvements such as new perimeter fencing and site lighting. The new pumps were selected to provide consistency and standardization with other City lift stations, thereby improving maintenance requirements.	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2018 (Actual)	\$381k	\$381k

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

<p>Project Name, Location and Owner's contact information:</p>	<p>Nature of Firm's Responsibility:</p>	
<p>3. Effluent Force Main Evaluation/Study for WWTP No. 3; Kenner, LA</p> <p>City of Kenner - Jose Gonzalez, PE [former] Director of Public Works 504.736.6783</p> 	<p>Trigon was selected by the City of Kenner to perform concept phase services to identify and evaluate alternatives to enhance the reliability of the existing effluent force main through which treated wastewater is discharged from the Kenner Wastewater Treatment Plant No. 3 (WWTP) to the Mississippi River (River).</p> <p>The existing effluent force main was 48-inches in diameter and approximately 30 years old. The Effluent Pump Station within the WWTP was in the process of being upgraded and was intended to modify the pumping strategy to the effluent force main. The area of greatest concern along the force main route was where it travels under the Louis Armstrong New Orleans International Airport property, particularly an active runway.</p> <p>Through this force main study project, Trigon evaluated alternatives that would minimize the likelihood of and need for an emergency shut-down of the Airport operations.</p>	
<p>Completion Date (Actual or estimated):</p>	<p>Estimated Cost:</p>	
<p>2017 (Actual)</p>	<p>Entire Project:</p> <p>\$75k</p>	<p>Work for which Firm was Responsible:</p> <p>\$75k</p>

PROJECT NO. 4

<p>Project Name, Location and Owner's contact information:</p>	<p>Nature of Firm's Responsibility:</p>	
<p>4. East Bank Wastewater Treatment Plant RAS Line and Pump Station Modifications; New Orleans, LA</p> <p>Sewerage and Water Board of New Orleans Richard Leidy, PE WWTP Contract Operator 504.275.8591</p> 	<p>Trigon was selected to perform emergency design services for this project that involved improvements to Return Activated Sludge (RAS) facilities at the Sewerage & Water Board's 200 MGD East Bank Wastewater Treatment Plant (EBWWTP). One of two old 30-inch RAS lines ruptured in close proximity to two large clarifiers, causing the S&WB to install an above-grade temporary line on an emergency basis to maintain RAS operations. This project consisted of installing a new below-grade 30-inch PVC RAS line along a different alignment, which was supported by pile structures due to poor ground conditions at the WWTP. An approximately 200' section of 30-inch above-grade stainless steel piping was also designed for replacement, along with replacement/modification of the discharge header inside the associated RAS pump station.</p>	
<p>Completion Date (Actual or estimated):</p>	<p>Estimated Cost:</p>	
<p>2016 (Actual)</p>	<p>Entire Project:</p> <p>\$1,800k</p>	<p>Work for which Firm was Responsible:</p> <p>\$1,800k</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. 5

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>5. FY14 Sewer System Rehabilitation; Slidell, LA</p> <p>City of Slidell Blaine Clancy, PE – City Engineer 985.646.4270</p> 	<p>Trigon was a subconsultant on this project for the City of Slidell. The primary objective of this project was to reduce contamination in the Bayou Bonfouca and Bayou Vincent drainage basins caused by infiltration and inflow (I/I) and sanitary sewer overflows (SSOs), which end up in Lake Pontchartrain. This was accomplished by inspecting and evaluating the sewerage system, identifying damaged sewerage infrastructure, and developing rehabilitation recommendations that will be translated into construction documents to implement the repairs. The portion of the sewer system being evaluated included approximately 16 miles of sewer lines. A range of assessment and evaluation methods were used, including manhole inspections, smoke testing and CCTV inspection of gravity sewer lines.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2014 (actual)	\$100k (engineering fees)	\$14k (engineering fees)

PROJECT NO. 6

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>6. Improvements to Multiple Sewage Pumping/Lift Stations; Shreveport, LA</p> <p>City of Shreveport Barbara Featherston, PE – Director 318.673.7660</p> 	<p>Trigon was a subconsultant providing design support and construction phase services for improvements at the Lucas Sewage Pumping Station and Agurs Sewage Pumping Station, as well as multiple other sewer lift stations. The Lucas station was a 3-pump station with firm capacity of 20,000 gpm (29 MGD), and discharged into a 48-inch force main that manifolds with other stations. The Agurs Sewage Pumping Station was a 3-pump station with firm capacity of 3,000 gpm (4.3 MGD), and the station discharged through an 8,000 LF 24" force main. Both pumps were driven by variable frequency drives (VFDs) and a permanent bypass structure was constructed for each, allowing flow to be diverted around the station, if necessary. Trigon also performed construction phase services for various lift station improvement projects, including: Tou Don, Risinger & Sunset Lift Stations, Round Grove Lift Station, Broadmoor Lift Station, Sludge Field Effluent Lift Station, Pinecrest Lift Station, and Country Club Hills Lift Station.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2017 (Actual)	\$6M	\$1M

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

PROJECT NO. 7

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>7. Hurricane Harvey Disaster Recovery Lift Stations; Houston, TX</p> <p>Houston Public Works Farid Sadeghian - Supervising Engineer 832.395.4985</p> 	<p>Trigon is the prime consultant for the Hurricane Harvey Disaster Recovery for thirty-six (36) lift stations in the City of Houston. The project involves performing detailed asset inventories and damage assessments of facilities; reviewing existing documentation of damages; coordinating with relevant government entities; mobilizing technical staff to document and capture damages caused by the flood; preparing detailed cost estimates for repairs/replacement of damaged assets; conducting testing, analysis, and surveys as required; and providing periodic progress reports for tasks applicable to insurance and FEMA claims. Once the damage assessments and documentation are complete, Trigon will prepare a technical memorandum which details pre- and post-storm conditions, repair and replacement alternatives and costs; and mitigation alternatives for future disasters. The information contained within the technical memorandum will be used to prepare insurance and FEMA claim documentation. Trigon is also serving as a subconsultant providing similar services for 65 other lift stations throughout the City. Trigon is working on over 100 City of Houston Lift Stations as a part of these efforts, and is extremely familiar with City requirements.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
<p>2021</p>	Entire Project: \$800k	Work for which Firm was Responsible: \$800k

PROJECT NO. 8

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>8. Sewer System Evaluation and Rehabilitation Program; New Orleans, LA</p> <p>Sewerage and Water Board of New Orleans Joe Becker, PE – [fmr] Gen'l Superintendent 504.666.0282</p> 	<p>Trigon has served as a subconsultant to the program manager for this comprehensive Sewer System Evaluation and Rehabilitation Program (SSERP). Trigon's principals also previously served in key technical and management roles on this \$650M program since its inception in 1996, including roles such as Program Manager, Deputy Program Manager, Planning Manager, Design Manager, Construction Manager, Project Manager and Project Engineer, with a previous employer. The evaluation and planning phase of the SSERP included the development of a system-wide computerized hydraulic model, completion of short and long-term sewage flow monitoring programs, inspection and hydraulic evaluation of over 80 sewage pumping stations of various types and sizes, development of sewer rehabilitation guidelines and standards, the completion of numerous sanitary sewer evaluation studies throughout the city, development of capacity improvement measures and creation of a master plan and capital improvement program. The program also included construction management and resident inspection services for 20 sewage pumping stations and over 20 miles of new force mains. Trigon recently completed inspections and hydraulic testing of 75 sewage pumping stations.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
<p>2018 (Actual)</p>	Entire Project: \$200M	Work for which Firm was Responsible: \$10M

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

PROJECT NO. 9

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>9. Investigation of Sewer Pump Station 212; Slidell, LA</p> <p>City of Slidell Blaine Clancy, PE – City Engineer 985.646.4270</p> 	<p>The City implemented upgrades to Sewer PS 212 (designed by others), which generally consisted of converting an existing suction-lift type sewage pumping station to a submersible-type station.</p> <p>The new station was put into service around May 2009. Shortly after the newly-converted station became operational, the City started receiving complaints about noise (similar to that resulting from “water hammer”) from residents in an area where PS 212 was not believed to be discharging.</p> <p>Trigon Associates, LLC (Trigon) was asked to provide assistance to the City in investigation of the issue and developing recommendations. Subsequent to site visits and meetings with City staff.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2009 (Actual)	\$120k	\$120k

PROJECT NO. 10

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
<p>10. Sewage Lift Station No. 24 Improvements; Buras, LA</p> <p>Plaquemines Parish Government Ken Dugas, PE – Chief Engineer 504.297.5343</p> 	<p>Trigon performed engineering and design services to facilitate the repair of the City's collection system at various locations identified previously through CCTV inspections. Damage to the City's sanitary sewer system was a direct result of Hurricane Katrina. The system was partially clogged by silt and debris and required immediate attention and cleaning to prevent or minimize overflow of raw sewage. The sanitary sewer system also sustained damages that require point / service repairs, obstruction removals and cured-in-place pipe (CIPP) lining which were designed as part of this project. Trigon provided the following general services:</p> <ul style="list-style-type: none"> ▲ Design of improvements, including site visits to verify field conditions and preparation of contract documents (specifications and drawings) ▲ Bid phase services to support the City in successfully bidding and awarding the construction contract ▲ Construction phase services, particularly with respect to conducting the pre-construction conference, technical review of submittals, responding to requests for information/clarifications, and support to the City in contract closeout procedures (including final change order) 	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2011 (Actual)	\$116k	\$116k

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 provided Professional Engineering Services related to the Design for the Rehabilitation of the Transcontinental & Belle Lift Station (E8-1), Resolution No. 134689.

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

1. BACKGROUND AND EXPERIENCE OF THE FIRM



Trigon is a local woman-owned small business that is a State-certified Disadvantaged Business Enterprise (DBE), which offers engineering, consulting and management services. **Trigon's** principals have over 110 years of combined experience covering a wide range of public infrastructure, utilities and facility work, including **sewer, water, water resources, 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 sewer projects similar to those undertaken by the Parish, resulting in a strong team that has experience executing work of a very similar nature to what may be required. A few of our key qualifications are as follows:

Trigon would serve as prime consultant, will be fully responsible for contract and project execution, and will perform the majority of the work on any resulting contract(s). Additionally, our teaming partners for this work - **BFM Corporation, LLC (BFM)** and **Eustis Engineering, LLC (Eustis)** - will serve to complement and support Trigon throughout the project, providing necessary topographic surveying services and geotechnical engineering services, respectively. Their completed TEC Questionnaires are included in this Statement of Qualifications.

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:

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

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

- ▲ Sewerage Capital Improvement Program, Jefferson Parish, LA
- ▲ Sewer Pump Station Inspections, St. Bernard Parish, LA
- ▲ Sewerage System Hydraulic Model, St. Bernard Parish, LA
- ▲ Sewer System Evaluation and Rehabilitation Program, New Orleans, LA
- ▲ Post-Katrina Rehabilitation of Sewage Collection System, Slidell, LA
- ▲ East Bank Sewage Treatment Plant Evaluation, New Orleans, LA
- ▲ FY 08/09 Sewer Pump Station Rehabilitation, Slidell, LA
- ▲ Corrective Action Plan for East Bank Sewerage System (Master Plan), New Orleans, LA
- ▲ Emergency Sewer Pump Station Design, New Orleans, LA
- ▲ Emergency Sewer System Assessment Phase I and II, New Orleans, LA
- ▲ Sanitary Sewer Overflow Control Program, St. Bernard Parish, LA
- ▲ NPDES Storm Water Permitting, Jefferson Parish, LA
- ▲ Water Asset Management Plan (Master Plan), Jefferson Parish, LA
- ▲ Water Line Replacement Program – Lakeview Neighborhoods, Groups 1 & 2, New Orleans, LA



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

- ▲ Waterline Replacement Program –Lakewood, Navarre, and West End Neighborhoods, New Orleans, LA
- ▲ Cleary Avenue at Cypress Street, Jefferson Parish, LA
- ▲ Design of Water Plant Safe Houses, Jefferson Parish, LA
- ▲ Water Quality Master Plan, New Orleans, LA
- ▲ Storm Water Pollution Prevention Plans and Spill Prevention, Control and Countermeasures, Jefferson Parish, LA
- ▲ Water Hammer Hazard Mitigation Grant Program Project, New Orleans, LA
- ▲ Water Distribution Modeling, Jefferson Parish, LA
- ▲ Water Line Replacement Program – Lakeview Neighborhoods, Groups 1 and 2, New Orleans, LA
- ▲ Water Line Replacement Program – 6 Areas
- ▲ Highway 11 Water Line Improvements, Buras, LA
- ▲ Water Distribution System Assessment and Capital Improvement Plan (Master Plan), New Orleans, LA
- ▲ Post-Katrina Water Distribution System Assessment/Rehabilitation, New Orleans, LA
- ▲ Clean Water Atlanta (SSO/CSO) Program, Atlanta, GA
- ▲ Dura Water System Improvements, West Bank, Palestine
- ▲ Louis Morel Lane Infrastructure Improvements, Plaquemines Parish, LA
- ▲ Delta Aire Drive Infrastructure Improvements, Plaquemines Parish, LA
- ▲ Drainage and Roadway Improvements on East 70th Street Water Main Relocation Design, Shreveport, LA
- ▲ Barriere Road Retention Pond and Drainage Pump Station Improvements, Plaquemines Parish, LA
- ▲ Levee, Floodwall and Drainage Project/Construction Management, New Orleans, LA
- ▲ Drainage Master Plan, New Orleans, LA
- ▲ Land Acquisition, Regulatory Compliance, Permitting, Grant Administration, Jefferson Parish, LA
- ▲ Pump Station Control Panel Replacement, Slidell, LA
- ▲ Northshore Mall Area Pump Station and Force Main Improvements, Slidell, LA
- ▲ Post-Katrina Rehabilitation of Storm Drainage System, Slidell, LA
- ▲ Post-Katrina Emergency Debris Cleanup, New Orleans, LA
- ▲ Post-Katrina Emergency Storm Drain Cleaning, New Orleans, LA
- ▲ Streets Program/Construction Management, New Orleans, LA
- ▲ Wind Retrofit of Parish-Owned Facilities, Plaquemines Parish, LA
- ▲ Design and Construction Management Services for World's Fair, New Orleans, LA
- ▲ Environmental Investigations/Soil Sampling for USACE, New Orleans, LA
- ▲ Comprehensive Utilities Hardening, Naval Air Station, Belle Chasse, LA



3. LOCAL PRESENCE AND KNOWLEDGE



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

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

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

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

4. LITIGATION STATEMENT

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

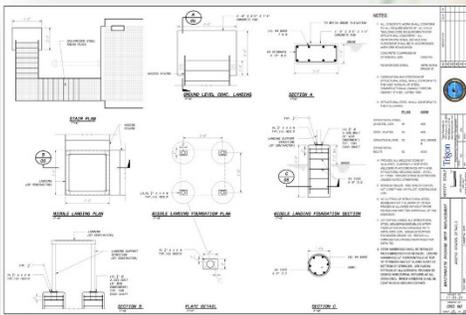
5. DBE PARTICIPATION



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

Additionally, **Trigon** is certified under other state and local DBE programs such as those utilized by both the City and Sewerage and Water Board of New Orleans. As such, any resulting work awarded to **Trigon** would be a win for small business and the Parish's DBE goals.

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 wastewater 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 Parish staff and make field visits to project sites as required to successfully complete the work.



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
Joseph Becker, PE	[fmr] General Superintendent	Sewerage and Water Board of New Orleans	504-666-0282
M. Ron Spooner, PE	Chief of Engineering	Sewerage and Water Board of New Orleans	504-865-0650
Bob Moeinian, PE	[fmr] City Engineer	City of Covington	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
Barbara Featherston, PE	Director	City of Shreveport, LA, Dept. of Water & Sewerage	318-673-6592
Ken Dugas, PE	Parish Engineer	Plaquemines Parish Government	504-297-5343
Jonah Arceneaux, EI	Project Manager	Plaquemines Parish Government	504-382-9975
Dan Wagner	President	BLD Services, LLC	504-466-1344

9. OUR COMMITMENT

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

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



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

Signature: *Michelle Herbert* Print Name: Michelle Herbert
 Title: Chief Executive Officer Date: May 26, 2021

BFM Corporation, LLC
Surveying

TEC Professional Services Questionnaire

A. Project Name and Advertisement Resolution Number:

Professional Engineering Services related to the Design of the
Rehabilitation of the Transcontinental & Belle Lift Station (E8-1)
 SOQ 21-008 | Resolution No. 137449

B. Firm Name & Address where Project work will be performed:



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:

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

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 _____**

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:

39 years (Founding Principal of BFM in 1982); 54 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:

- Sewer Lift Station L-11-1, Saddler Road at Westbank Expressway, Marrero, Jefferson Parish, LA
- Sewer Lift Station F8-3, Metairie, Jefferson Parish, LA
- Destrehan Lift Station Upgrades, Jefferson Parish, LA
- Destrehan Lift Station Upgrades, Jefferson Parish, LA
- Sewer Lift Station L-13-6, Ehret Road, Marrero, Jefferson Parish, LA
- 5th & 9th Sewer Lift Station Upgrades, Harvey, Jefferson Parish, LA
- Lift Station E3-2 (Elmwood & Citrus), Metairie, Jefferson Parish, LA
- Saddler Street Sewer Lift Station, Marrero, Jefferson Parish, LA
- Lift Station No. 6 Improvements, City of Harahan, Jefferson Parish, LA
- Lift Station F7-12 (Grace King and Rockford), Metairie, Jefferson Parish, LA
- Lift Station K-11-3, Marrero, Jefferson Parish, LA
- Lift Station F7-13B (SCIP Project No. D55102), Jefferson Parish, LA
- Lift Station E5-4, Jefferson Parish, LA
- Lift Station F1-1, Elmwood Industrial Park Subdivision, Jefferson Parish, LA
- Causeway and Scott Sewer Lift Station Rehabilitation, Jefferson Parish, LA
- Lift Station C4-1A (N. Sibley and Boone), Metairie, Jefferson Parish, LA
- Lift Station F1-1, Elmwood Industrial Park Subdivision, Jefferson Parish, LA
- Kennedy Heights Sewer Lift Station, Jefferson Parish, LA
- N-12-1 (41st & Gardere Canal) Lift Station, Jefferson Parish, LA
- Cleary Avenue & West Napoleon Lift Station & Force Main, Jefferson Parish, LA
- Rehabilitation of D8-3 Lift Station (Purdue Drive & 37th Street), Metairie, Jefferson Parish, LA
- N-12-1 (41st & Gardere Canal) Lift Station, Jefferson Parish, LA
- Route Topographic (including Lift Station/Force Main) Surveying Services, Jefferson Parish, LA
- Lift Station D4-2 and Proposed D4-2B Surveying Services, Metairie, Jefferson Parish, LA
- Lakeside Mall Lift Station Servitude, Jefferson Parish, LA
- Emergency Generators for Sewer Lift Stations and Helios and West Napoleon Pump Stations, Jefferson Parish, LA
- Elizabeth & Utica Sewerage Lift Station, Jefferson Parish, LA
- Lapalco Boulevard Bridge at Harvey Canal, Jefferson Parish, LA
- DOTD H.010570, LA 49, Williams Boulevard, Kenner, Jefferson Parish, LA
- Latigue Road Extension, Jefferson Parish, LA
- Destrehan Avenue Bike Path (Patriot Street to Chadwood Drive), Harvey, Jefferson Parish, LA
- Metairie Road Smart Growth: Causeway Boulevard and Metairie Road, Metairie, Jefferson Parish, LA
- Avenue D Drainage Improvements (Phase VIII: Allo Street), Metairie, Jefferson Parish, LA
- Power Boulevard at Vintage Drive, Kenner, Jefferson Parish, LA
- Ames Boulevard Rehabilitation, Jefferson Parish, LA
- Green Acres Road, Metairie, Jefferson Parish, LA
- Veterans Memorial Boulevard - Westbound, Jefferson Parish, LA
- Hector Avenue Route Topographic Survey, Gretna, Jefferson Parish, LA
- Cousins Boulevard Extension (Phase I), Harvey, Jefferson Parish, LA
- Little Farms Avenue, Jefferson Parish, LA
- Lift Station No. 6 Improvements, City of Harahan, Jefferson Parish, LA
- Lapalco Boulevard Turn Lane (Lapalco Boulevard at Baratavia Boulevard), Jefferson Parish, LA
- Baratavia Boulevard Turn Lane Project, Marrero, 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:

4 years (became partial owner of BFM in 2017); 28 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)

Sewer Lift Station L-11-1, Saddler Road at Westbank Expressway, Marrero, Jefferson Parish, LA.

BFM provided surveying services for Sewer Lift Station L-11-1 (Saddler Road at Westbank Expressway) on the West Bank of Jefferson Parish in Marrero, a continuation of a previous surveying project. The new contract involved a boundary survey with servitude acquisition, updating the boundary and creating servitude, as provided by the client, which was used to create the final survey. (\$4,140 (fee); 2020)

Lift Station F8-3, Metairie, Jefferson Parish, LA.

For the project (located at West Esplanade Avenue & Houma Boulevard, in the Dreyfous Tract), BFM executed a topographic survey; scope included two TBMs (Temporary Benchmarks), three point ties, and location of improvements within limits & monuments to establish apparent rights-of-way (ROW). Baseline was set parallel to West Esplanade Avenue. (\$11,890 (fee); 2019)

Lift Station No. 6 Improvements, City of Harahan, Jefferson Parish, LA.

BFM prepared a Route Topographic Survey of the project site in Harahan, which included portions of Wilson Street and Grove Avenue. The full scope plan & profile included all services, utilities, properties, elevations and items necessary to perform any and all engineering and construction work. (\$24,190 (fee); 2018)

Destrehan Lift Station Upgrades, Jefferson Parish, LA.

BFM provided a full boundary survey update of the 2700 Destrehan Lift Station Upgrade project; the scope included establishing two TBMs (Temporary Benchmarks) on or near the project site and location of existing improvements within the designated Limits of Survey. This also included location of visible above-ground utilities and those underground utilities with visible surface evidence. (SCIP Project Number:D3564) (\$5,750 (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)

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)

Lift Station E3-2 (Elmwood & Citrus), Metairie, Jefferson Parish, LA.

BFM prepared a topographic survey of the project site. (\$10,866 (fee); 2018)

Saddler Street Sewer Lift Station, Marrero, Jefferson Parish, LA.

BFM provided topographic surveying services for the project, located near the West Bank Expressway Access Road. (\$5,715 (fee); 2018)

Lift Station F7-13B (SCIP Project No. D55102), Jefferson Parish, LA.

BFM provided topographic surveying services in relation to improvements at Lift Station F7-13B, located at the intersection of Stefano Street and Wanda Lynn Drive in Garden Subdivision, Metairie. (\$4,770 (fee); 2018)

Lift Station E5-4, Jefferson Parish, LA.

BFM provided topographic surveying services for the project site, located at Transcontinental and West Metairie. (\$6,530 (fee); 2018)

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:

13 years (joined BFM in 2008); 14 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.

Lift Station D4-2 and Proposed D4-2B Surveying Services, Metairie, Jefferson Parish, LA. BFM provided boundary and topographic surveying services for the existing Lift Station, D4-2, and the proposed Lift Station, D4-2B, to be located at the corner of Olga Avenue and Howard Avenue in Metairie. BFM also provided Right-of-Way to Right-of-Way of associated streets and sites of the existing and proposed lift stations. (\$22,860 (fee); 2016)

Sewer Lift Station L-11-1, Saddler Road at Westbank Expressway, Marrero, Jefferson Parish, LA. BFM provided surveying services for Sewer Lift Station L-11-1 (Saddler Road at Westbank Expressway) on the West Bank of Jefferson Parish in Marrero, a continuation of a previous surveying project. The new contract involved a boundary survey with servitude acquisition, updating the boundary and creating servitude, as provided by the client, which was used to create the final survey. (\$4,140 (fee); 2020)

Rehabilitation of D8-3 Lift Station (Purdue Drive & 37th Street), Metairie, Jefferson Parish, LA. BFM provided topographic surveying services for the project. (\$11,216 (fee); 2016)

N-12-1 (41st & Gardere Canal) Lift Station, Jefferson Parish, LA. BFM provided boundary and topographic surveying services for the project. (2016)

TEC Professional Services Questionnaire

Other experience and qualifications relevant to the proposed Project:

John Philip Thayer (continued)

Emergency Generators for Sewer Lift Stations and Helios and West Napoleon Pump Stations, Jefferson Parish, LA. BFM prepared topographic surveys at the Helios PS and at the West Napoleon PS for the placement of emergency generators. (\$5,888 (fee); 2012)

Lakeside Mall Lift Station Servitude, Jefferson Parish, LA. BFM prepared a survey of the area needed for the replacement of a lift station on Severn Avenue. (\$2,540 (fee); 2015)

Route Topographic (including Lift Station/Force Main) Surveying Services, Jefferson Parish, LA. BFM provided boundary and topographic surveys for the project, which involved a force main survey involving Veterans Boulevard, between the Suburban Canal and North Hullen Street (lift station improvements). Both full and partial route surveys were executed. (\$20,000 (fee); 2016)

Lift Station E5-4, Jefferson Parish, LA. BFM provided topographic surveying services for the project site, located at Transcontinental and West Metairie. (\$6,530 (fee); 2018)

Lift Station F1-1, Elmwood Industrial Park Subdivision, Jefferson Parish, LA. BFM's surveying services for the project involved a topographic survey of Lift Station F1-1 located at the intersection of Plantation road and Toler Street. (\$4,880 (fee); 2018)

Lift Station F7-13B (SCIP Project No. D55102), Jefferson Parish, LA. BFM provided topographic surveying services in relation to improvements at Lift Station F7-13B, located at the intersection of Stefano Street and Wanda Lynn Drive in Garden Subdivision, Metairie. (\$4,770 (fee); 2018)

Elizabeth & Utica Sewerage Lift Station, Jefferson Parish, LA. BFM executed a topographic survey for the project. (\$10,500 (fee); 2012)

N-12-1 (41st & Gardere Canal) Lift Station, Jefferson Parish, LA. BFM provided topographic and boundary surveying services for Lift Station N-12-1 (located at 41st Street & the Gardere Canal) in Jefferson Parish. (\$2,724 (fee); 2016)

Cleary Avenue & West Napoleon Lift Station & Force Main, Jefferson Parish, LA. BFM provided topographic surveying services for the project. (\$9,116 (fee); 2016)

Kennedy Heights Sewer Lift Station, Jefferson Parish, LA. BFM provided topographic surveying services for the project. (\$4,520 (fee); 2017)

Lift Station C4-1A (N. Sibley and Boone), Metairie, Jefferson Parish, LA. BFM executed a topographic survey for the project. (\$3,660 (fee); 2017)

Causeway and Scott Sewer Lift Station Rehabilitation, Jefferson Parish, LA. BFM provided topographic surveying services for the project. (\$5,610 (fee); 2017)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Gary J. Lambert, Jr., LSI
Project Manager/Drafting Supervisor

Project Assignment:

Project Manager/Drafting Supervisor

Name of Firm with which associated:

BFM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

3 years (joined BFM in 2018); 3 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:

2019, Survey Intern, Louisiana, LSI.0000694

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).

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)

Destrehan Lift Station Upgrades, Jefferson Parish, LA. BFM provided a full boundary survey update of the 2700 Destrehan Lift Station Upgrade project; the scope included establishing two TBMs (Temporary Benchmarks) on or near the project site and location of existing improvements within the designated Limits of Survey. This also included location of visible above-ground utilities and those underground utilities with visible surface evidence. (SCIP Project Number:D3564) (\$5,750 (fee); 2019)

Lift Station F8-3, Metairie, Jefferson Parish, LA. For the project (located at West Esplanade Avenue & Houma Boulevard, in the Dreyfous Tract), BFM executed a topographic survey; scope included two TBMs (Temporary Benchmarks), three point ties, and location of improvements within limits & monuments to establish apparent rights-of-way (ROW). Baseline was set parallel to West Esplanade Avenue. (\$11,890 (fee); 2019)

TEC Professional Services Questionnaire

Other experience and qualifications relevant to the proposed Project:

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

Sewer Lift Station L-11-1, Saddler Road at Westbank Expressway, Marrero, Jefferson Parish, LA.

BFM provided surveying services for Sewer Lift Station L-11-1 (Saddler Road at Westbank Expressway) on the West Bank of Jefferson Parish in Marrero, a continuation of a previous surveying project. The new contract involved a boundary survey with servitude acquisition, updating the boundary and creating servitude, as provided by the client, which was used to create the final survey. (\$4,140 (fee); 2020)

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)

Destrehan Lift Station Upgrades, Jefferson Parish, LA. BFM provided a full boundary survey update of the 2700 Destrehan Lift Station Upgrade project. (\$11,710 (fee); 2019)

Hanson City Task II Force Main, Kenner, LA. BFM provided Subsurface Utility Engineering (SUE) surveying services for the project. The SUE process includes non-destructive surface geophysical methods which determine the presence of subsurface utilities and to mark their horizontal position on the ground surface. Vacuum excavation techniques are used to expose & record the precise horizontal and vertical position of the assets. A conflict matrix is also created to evaluate and compare collected utility information with project plans, identify conflicts and propose solutions. (\$33,500 (fee); 2019)

Chateau Transfer Station Force Main, City of Kenner, LA. BFM's scope involved updating the topographic survey update for portions of Chateau Transfer Station Force Main (an update from a previous BFM surveying project). (\$13,110 (fee); 2019)

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

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)

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)

Metairie Road Smart Growth: Causeway Boulevard and Metairie Road, Metairie, Jefferson Parish, LA. BFM prepared a topographic survey of the project site for the Metairie Road Smart Growth Program. This included Metairie Road beneath the Causeway Boulevard Overpass. BFM established a baseline parallel to Metairie Road, set up two temporary benchmarks (TBMs), and located all existing improvements. Cross sections for the project area were taken on a 25 ft. grid within established limits. (\$12,660 (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:



Years experience with this Firm:

7 years (joined BFM in 2014); 15 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.

Lift Station No. 6 Improvements, City of Harahan, Jefferson Parish, LA. BFM prepared a Route Topographic Survey of the project site in Harahan, which included portions of Wilson Street and Grove Avenue. The full scope plan & profile included all services, utilities, properties, elevations and items necessary to perform any and all engineering and construction work. (\$24,190 (fee); 2018)

Lift Station F8-3, Metairie, Jefferson Parish, LA. For the project (located at West Esplanade Avenue & Houma Boulevard, in the Dreyfous Tract), BFM executed a topographic survey; scope included two TBMs (Temporary Benchmarks), three point ties, and location of improvements within limits & monuments to establish apparent rights-of-way (ROW). Baseline was set parallel to West Esplanade Avenue. (\$11,890 (fee); 2019)

Sewer Lift Station L-11-1, Saddler Road at Westbank Expressway, Marrero, Jefferson Parish, LA. BFM provided surveying services for Sewer Lift Station L-11-1 (Saddler Road at Westbank Expressway) on the West Bank of Jefferson Parish in Marrero, a continuation of a previous surveying project. The new contract involved a boundary survey with servitude acquisition, updating the boundary and creating servitude, as provided by the client, which was used to create the final survey. (\$4,140 (fee); 2020)

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:

13 years (joined BFM in 2008); 44 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.

Lift Station D4-2 and Proposed D4-2B Surveying Services, Metairie, Jefferson Parish, LA. BFM provided boundary and topographic surveying services for the existing Lift Station, D4-2, and the proposed Lift Station, D4-2B, to be located at the corner of Olga Avenue and Howard Avenue in Metairie. BFM also provided Right-of-Way to Right-of-Way of associated streets and sites of the existing and proposed lift stations. (\$22,860 (fee); 2016)

Lift Station No. 6 Improvements, City of Harahan, Jefferson Parish, LA. BFM prepared a Route Topographic Survey of the project site in Harahan, which included portions of Wilson Street and Grove Avenue. The full scope plan & profile included all services, utilities, properties, elevations and items necessary to perform any and all engineering and construction work. (\$24,190 (fee); 2018)

Lift Station F8-3, Metairie, Jefferson Parish, LA. For the project (located at West Esplanade Avenue & Houma Boulevard, in the Dreyfous Tract), BFM executed a topographic survey; scope included two TBMs (Temporary Benchmarks), three point ties, and location of improvements within limits & monuments to establish apparent rights-of-way (ROW). Baseline was set parallel to West Esplanade Avenue. (\$11,890 (fee); 2019)

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:

31 years (joined BFM in 1990); 31 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.

Emergency Generators for Sewer Lift Stations and Helios and West Napoleon Pump Stations, Jefferson Parish, LA. BFM prepared topographic surveys at the Helios PS and at the West Napoleon PS for the placement of emergency generators. (\$5,888 (fee); 2012)

Lift Station D4-2 and Proposed D4-2B Surveying Services, Metairie, Jefferson Parish, LA. BFM provided boundary and topographic surveying services for the existing Lift Station, D4-2, and the proposed Lift Station, D4-2B, to be located at the corner of Olga Avenue and Howard Avenue in Metairie. BFM also provided Right-of-Way to Right-of-Way of associated streets and sites of the existing and proposed lift stations. (\$22,860 (fee); 2016)

N-12-1 (41st & Gardere Canal) Lift Station, Jefferson Parish, LA. BFM provided boundary and topographic surveying services for the project. (\$7,048 (fee); 2016)

Elizabeth & Utica Sewerage Lift Station, Jefferson Parish, LA. BFM executed a topographic survey for the project. (\$10,500 (fee); 2012)

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:

B^FM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

7 years (joined BFM in 2014); 20 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:

Lift Station C4-1A (N. Sibley and Boone), Metairie, Jefferson Parish, LA. BFM executed a topographic survey for the project. (\$3,660 (fee); 2017)

Lasalle Rest Room Building, Jefferson Parish, LA. BFM prepared a boundary survey (with topographic services) for the project, elements of which included TBM (Temporary Benchmarks), location of visible/ below ground surface (BGS) utilities, research of record drawings, pipe location & determination of sizes/types, trees and other natural elements, etc. BFM further provided a construction benchmark (CBM) and all drawings (AutoCAD) as outlined. Later services included location of sewer manholes and lift station. (\$9,420 (fee); 2017)

Causeway and Scott Sewer Lift Station Rehabilitation, Jefferson Parish, LA. BFM provided topographic surveying services for the project. (\$5,610 (fee); 2017)

Lift Station F1-1, Elmwood Industrial Park Subdivision, Jefferson Parish, LA. BFM's surveying services for the project involved a topographic survey of Lift Station F1-1 located at the intersection of Plantation road and Toler Street. (\$4,880 (fee); 2018)

Kennedy Heights Sewer Lift Station, Jefferson Parish, LA. BFM provided topographic surveying services for the project. (\$4,520 (fee); 2017)

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:



Years experience with this Firm:

2 years (joined BFM in 2019); 22 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.

Sewer Lift Station L-11-1, Saddler Road at Westbank Expressway, Marrero, Jefferson Parish, LA. BFM provided surveying services for Sewer Lift Station L-11-1 (Saddler Road at Westbank Expressway) on the West Bank of Jefferson Parish in Marrero, a continuation of a previous surveying project. The new contract involved a boundary survey with servitude acquisition, updating the boundary and creating servitude, as provided by the client, which was used to create the final survey. (\$4,140 (fee); 2020)

Sewer Lift Station F8-3, W. Esplanade Avenue at Houma Boulevard, Metairie, Jefferson Parish, LA. BFM's services involved a boundary survey with servitude acquisition (updating boundary and creating servitude, which was provided by the client and utilized to create the final survey). The project was located on the East Bank of Jefferson Parish in the Dreyfous Tract region. (\$2,970 (fee); 2021)

River to Lake Bike Path, Monticello Canal & Dankin Street, Jefferson and Orleans Parish Line, LA. BFM executed a topographic survey of the Bike Path along Jefferson/Orleans Parish Line, north of Airline Drive to River Road at the Monticello Canal and Dakin Streets. (\$108,000 (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:

10 years (joined BFM in 2011); 30 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.

Sewer Lift Station F8-3, W. Esplanade Avenue at Houma Boulevard, Metairie, Jefferson Parish, LA. BFM's services involved a boundary survey with servitude acquisition (updating boundary and creating servitude, which was provided by the client and utilized to create the final survey). The project was located on the East Bank of Jefferson Parish in the Dreyfous Tract region. (\$2,970 (fee); 2021)

Rehabilitation of D8-3 Lift Station (Purdue Drive & 37th Street), Metairie, Jefferson Parish, LA. BFM provided topographic surveying services for the project. (\$11,216 (fee); 2016)

N-12-1 (41st & Gardere Canal) Lift Station, Jefferson Parish, LA. BFM provided topographic and boundary surveying services for Lift Station N-12-1 (located at 41st Street & the Gardere Canal) in Jefferson Parish. (\$2,724 (fee); 2016)

Causeway and Scott Sewer Lift Station Rehabilitation, Jefferson Parish, LA. BFM provided topographic surveying services for the project. (\$5,610 (fee); 2017)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Shaun Clements
CADD Technician

Project Assignment:

CADD Technician

Name of Firm with which associated:

B_FM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

3 years (joined BFM in 2018); 6 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:

Ms. Clements college work resulted in a GPA of 4.0, earning her Valedictorian status. She also was the recipient of the Highest Honors and Perfect Attendance Awards.

Lift Station F8-3, Metairie, Jefferson Parish, LA. For the project (located at West Esplanade Avenue & Houma Boulevard, in the Dreyfous Tract), BFM executed a topographic survey; scope included two TBMs (Temporary Benchmarks), three point ties, and location of improvements within limits & monuments to establish apparent rights-of-way (ROW). Baseline was set parallel to West Esplanade Avenue. (\$11,890 (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)

Destrehan Lift Station Upgrades, Jefferson Parish, LA. BFM provided a full boundary survey update of the 2700 Destrehan Lift Station Upgrade project; the scope included establishing two TBMs (Temporary Benchmarks) on or near the project site and location of existing improvements within the designated Limits of Survey. This also included location of visible above-ground utilities and those underground utilities with visible surface evidence. (SCIP Project Number:D3564) (\$5,750 (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:

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:

3 years (joined BFM in 2018); 36 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.

Lift Station F8-3, Metairie, Jefferson Parish, LA. For the project (located at West Esplanade Avenue & Houma Boulevard, in the Dreyfous Tract), BFM executed a topographic survey; scope included two TBMs (Temporary Benchmarks), three point ties, and location of improvements within limits & monuments to establish apparent rights-of-way (ROW). Baseline was set parallel to West Esplanade Avenue. (\$11,890 (fee); 2019)

Destrehan Lift Station Upgrades, Jefferson Parish, LA. BFM provided a full boundary survey update of the 2700 Destrehan Lift Station Upgrade project; the scope included establishing two TBMs (Temporary Benchmarks) on or near the project site and location of existing improvements within the designated Limits of Survey. This also included location of visible above-ground utilities and those underground utilities with visible surface evidence. (SCIP Project Number:D3564) (\$5,750 (fee); 2019)

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Dawn Hoffman
Researcher/Archivist

Project Assignment:

Researcher/Archivist

Name of Firm with which associated:

BFM CORPORATION, LLC
Professional Land & Hydrographic Surveying

Years experience with this Firm:

12 years (joined BFM in 2009); 24 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:

Lift Station F8-3, Metairie, Jefferson Parish, LA. For the project (located at West Esplanade Avenue & Houma Boulevard, in the Dreyfous Tract), BFM executed a topographic survey; scope included two TBMs (Temporary Benchmarks), three point ties, and location of improvements within limits & monuments to establish apparent rights-of-way (ROW). Baseline was set parallel to West Esplanade Avenue. (\$11,890 (fee); 2019)

Lift Station No. 6 Improvements, City of Harahan, Jefferson Parish, LA. BFM prepared a Route Topographic Survey of the project site in Harahan, which included portions of Wilson Street and Grove Avenue. The full scope plan & profile included all services, utilities, properties, elevations and items necessary to perform any and all engineering and construction work. (\$24,190 (fee); 2018)

Destrehan Lift Station Upgrades, Jefferson Parish, LA. BFM provided a full boundary survey update of the 2700 Destrehan Lift Station Upgrade project; the scope included establishing two TBMs (Temporary Benchmarks) on or near the project site and location of existing improvements within the designated Limits of Survey. This also included location of visible above-ground utilities and those underground utilities with visible surface evidence. (SCIP Project Number:D3564) (\$5,750 (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)

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>Sewer Lift Station L-11-1, Saddler Road at Westbank Expressway, Marrero, Jefferson Parish, Louisiana</p> <p>Richard C Lambert, Consulting Engineers 900 W Causeway Approach Mandeville LA 70471</p> <p>Franz J. Zemmer, P.E., 985-727-4440 fzemmer@rclconsultants.com</p>	<p>BFM provided surveying services for Sewer Lift Station L-11-1 (Saddler Road at Westbank Expressway) on the West Bank of Jefferson Parish in Marrero, a continuation of a previous surveying project. The new contract involved a boundary survey with servitude acquisition, updating the boundary and creating servitude, as provided by the client, which was used to create the final survey.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2021 02 (FEB)	N/A	\$4,140 (fee)

PROJECT NO. 2

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Lift Station No. 6 Improvements, City of Harahan, Jefferson Parish, Louisiana</p> <p>AIMS Group, Inc. 4421 Zenith Street Metairie LA 70001</p> <p>Harold J. DeLeo, 504-887-7045</p>	<p>BFM prepared a Route Topographic Survey of the project site in Harahan, which included portions of Wilson Street and Grove Avenue. The full scope plan & profile included all services, utilities, properties, elevations and items necessary to perform any and all engineering and construction work.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2018 04 (APR)	N/A	\$24,190 (fee)

TEC Professional Services Questionnaire

PROJECT NO. 3		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Sewer Lift Station F8-3, W. Esplanade Avenue at Houma Blvd., Metairie, Jefferson Parish, Louisiana</p> <p>Richard C Lambert, Consulting Engineers 900 W Causeway Approach Mandeville LA 70471</p> <p>Franz J. Zemmer, P.E., 985-727-4440 fzemmer@rclconsultants.com</p>	<p>BFM's services involved a boundary survey with servitude acquisition (updating boundary and creating servitude, which was provided by the client and utilized to create the final survey). The project was located on the East Bank of Jefferson Parish in the Dreyfous Tract region.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2021 01 (JAN)	N/A	\$2,970 (fee)

PROJECT NO. 4		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Destrehan Lift Station Upgrades, Jefferson Parish, Louisiana</p> <p>Principal Engineering 1011 N Causeway Blvd Suite 19 Mandeville LA 70471</p> <p>Henry I. DiFranco Jr. P.E., 985-624-5001 henry@pi-aec.com</p>	<p>BFM provided a full boundary survey update of the 2700 Destrehan Lift Station Upgrade project; the scope included establishing two TBMs (Temporary Benchmarks) on or near the project site and location of existing improvements within the designated Limits of Survey. This also included location of visible above-ground utilities and those underground utilities with visible surface evidence.</p> <p>(Lot S-2; Harvey Canal Property, portion of T-14-S, R-23 & 24-E, Plan of a Resubdivision of Parcel S-1 Into Lots S-2, S-3, and S-4 from 1982). (SCIP Project Number:D3564)</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2019 08 (AUG)	N/A	\$5,750 (fee)

TEC Professional Services Questionnaire

PROJECT NO. 5		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Destrehan Lift Station Upgrades, Jefferson Parish, Louisiana</p> <p>Principal Engineering 1011 N Causeway Blvd Suite 19 Mandeville LA 70471</p> <p>Henry DiFranco, 985-624-5001 henry@pi-aec.com</p>	<p>BFM provided a full boundary survey update of the 2700 Destrehan Lift Station Upgrade project.</p> <p>(Lot S-2; Harvey Canal Property, portion of T-14-S, R-23 & 24-E, Plan of a Resubdivision of Parcel S-1 Into Lots S-2, S-3, and S-4 from 1982). (SCIP Project Number:D3564)</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2019 08 (AUG)	N/A	\$11,710 (fee)

PROJECT NO. 6		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Sewer Lift Station L-13-6, Ehret Road, Marrero, Jefferson Parish, Louisiana</p> <p>H. Davis Cole & Associates, Inc. 1340 Poydras Street Suite 1850 New Orleans LA 70112</p> <p>David Martin, P.E., 504-836-2020</p>	<p>BFM's surveying scope involved topographic and boundary surveying services.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2019 02 (FEB)	N/A	\$8,790 (fee)

TEC Professional Services Questionnaire

PROJECT NO. 7		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Lift Station F8-3, Metairie, Jefferson Parish, Louisiana</p> <p>Richard C Lambert, Consulting Engineers 900 W Causeway Approach Mandeville LA 70471</p> <p>Franz J. Zemmer, P.E., 985-727-4440 fzemmer@rclconsultants.com</p>	<p>For the project (located at West Esplanade Avenue & Houma Boulevard, in the Dreyfous Tract), BFM executed a topographic survey; scope included two TBMs (Temporary Benchmarks), three point ties, and location of improvements within limits & monuments to establish apparent rights-of-way (ROW). Baseline was set parallel to West Esplanade Avenue.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2019 10 (OCT)	N/A	\$11,890 (fee)

PROJECT NO. 8		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>5th & 9th Sewer Lift Station Upgrades, Harvey, Jefferson Parish, Louisiana</p> <p>Professional Engineering & Environmental Consultants (PEEC), Inc. 1065 Muller Parkway, Suite B Westwego LA 70094</p> <p>Jeff Meyers, 504-347-1900</p>	<p>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.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2019 01 (JAN)	N/A	\$6,790 (fee)

TEC Professional Services Questionnaire

PROJECT NO. 9		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Lift Station D4-2 and Proposed D4-2B Surveying Services, Metairie, Jefferson Parish, Louisiana</p> <p>Principal Engineering 1011 N. Causeway Blvd Suite 19 Mandeville LA 70471</p> <p>Courtney I. Dickerson, P.E., 985-624-5001 courtney@pi-aec.com</p>	<p>BFM provided boundary and topographic surveying services for the existing Lift Station, D4-2, and the proposed Lift Station, D4-2B, to be located at the corner of Olga Avenue and Howard Avenue in Metairie. BFM also provided Right-of-Way to Right-of-Way of associated streets and sites of the existing and proposed lift stations.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2016 10 (OCT)	N/A	\$22,860 (fee)

PROJECT NO. 10		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Route Topographic (including Lift Station/Force Main) Surveying Services, Jefferson Parish, Louisiana</p> <p>Linfield, Hunter & Junius, Inc. 3608 18th Street, Suite 200 Metairie LA 70002</p> <p>Sergio Girau, 504-833-5300 lhj@lhjunius.com</p>	<p>BFM provided boundary and topographic surveys for the project, which included a force main survey involving Veterans Boulevard, between the Suburban Canal and North Hullen Street (lift station improvements). Both full and partial route surveys were executed.</p>	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2016 12 (DEC)	N/A	\$20,000 (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><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

PROFESSIONAL TRAINING AND EXPERIENCE

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

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

Our capabilities include the following and more:

- **Topographic Surveys** (*determine relative positions & elevations of natural & man-made features*)
- **Drone Surveying** (*detailed multi-acre data-capturing surveying*)
- **Bathymetric / Hydrographic Surveys** (*determine shoreline and depths of bodies of water*)

TEC Professional Services Questionnaire

N. continued.

- **Property, Boundary, and Right-of-Way Surveys** (*preparation of Legal Descriptions, property, and ROW maps to define project boundaries and for acquisition of property*)
- **Maps, Cross-Sections, and Data Sets** (*plan drawings, maps, diagrams, and data sets*)
- **3D Laser Scanning** (*unify raw data & model*)
- **Benchmarks** (*establishment of permanent, temporary, and construction benchmarks*)
- **Construction-Related Surveying** (*all types*)
- **Builder's Package** (*Boundary Survey & Construction Benchmark, Certificates including Form Board, Top of Slab, & Final FEMA Elevation*)
- **ALTA Surveys** (*American Land Title Association-compliant surveys*)

Project work (property, utilities, rights-of-way, etc.) routinely involves **extensive records & related research** as an element of successful completion, as well as coordination with the client, agency or department. BFM has personnel in place to make sure this is done correctly and expeditiously.

Our **Survey Field Crews** are equipped with Leica Viva & 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'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 fly with payload for 20 minutes and 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** provide the ability to process and model for any design purpose. High definition scanner data is processed using software from Leica and Autodesk. Furthermore, 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 has the ability to perform **automated bathymetry** to handle any **hydrographic surveying** task. For large rivers and bodies of water, BFM is equipped with Teledyne Odom Hydro Solutions' Hydro Trac Single Beam Echo Sounder. For smaller bodies of water, BFM uses SL20 Remote Controlled Boat equipped with CEE Scope Dual Channel Echo Sounder. The firm uses Hypack Software to process collected data. Further, BFM has the ability to execute multi-beam scans, side scans and magnetometer upon request.

TEC Professional Services Questionnaire

N. continued.

PERSONNEL

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.

WORKLOAD & ABILITY TO MEET PROJECT DEADLINES

BFM 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. Further, 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.

EXPERIENCE WITH JEFFERSON PARISH

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.

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.

LITIGATION STATEMENT

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.

PAST PERFORMANCE ON PUBLIC CONTRACTS / REFERENCES

Since 1982, BFM has worked with virtually every municipality in the region. We enjoy a high repeat-business rate with all our municipal & private clients. Further, we offer the following specific references for contact:

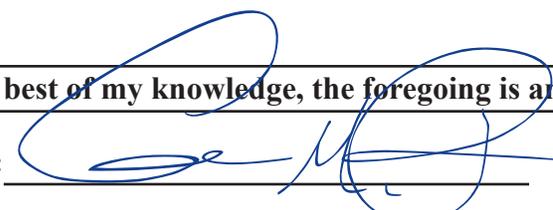
- **Mark R. Drewes, P.E.**, Director, Jefferson Parish Public Works Department (504-736-6783 | JPPW@jeffparish.net)
- **Neil Schneider, CCM, P.E.**, Director, Capital Projects, Jefferson Parish Public Works Department (504-736-6783 | JPPW@jeffparish.net)
- **Tom Schreiner**, Deputy CAO, Public Works & Capital Projects, City of Kenner (504-468-7515 | tschreiner@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)
- **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.

OWNERSHIP

BFM Corporation, LLC is majority woman-owned by Cassandra Poché (51%). Chad M. Poché, P.E., Executive Vice President holds 40% and Ralph P. Fontcuberta, Jr., PLS, Executive Vice President and company co-founder, has 9%.

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: May 5, 2021

Eustis Engineering, LLC
Geotechnical Engineering

TEC Professional Services Questionnaire

A. Project Name and Advertisement Resolution Number:																																
SOQ 21-008 Provide Professional Engineering Services – Design for Rehab of Transcontinental & Belle Lift Station																																
B. Firm Name & Address where Project Work Will be Performed:																																
Eustis Engineering L.L.C.																																
3011 28 th Street, Metairie, Louisiana 70002																																
C. Name, title and contact information of Principal, as defined in Section 2-926 of the Jefferson Parish Code of Ordinances, who is a registered, licensed architect, professional engineer, or surveyor in the State of Louisiana:																																
Gwendolyn P. Sanders, P.E. / President / 504-834-0157 / gsanders@eustiseng.com																																
D. Name and contact information of employee who is a registered and licensed architect, professional engineer, or surveyor in the State of Louisiana in the applicable discipline. A subcontractor may be substituted here only if the advertised Project requires more than one discipline.																																
Gwendolyn P. Sanders, P.E. / President / 504-834-0157 / gsanders@eustiseng.com																																
E. Please provide the number of employees whose primary function corresponds with each category:																																
<table style="width: 100%; border: none;"> <tr><td style="width: 33%;">7 Administrative</td><td style="width: 33%;">Estimators</td><td style="width: 33%;">_____ Specification Writers</td></tr> <tr><td>_____ Architects (Licensed)</td><td>1 Geologists</td><td>_____ Structural Engineers</td></tr> <tr><td>_____ Chemical Engineers</td><td>13 Geotechnical Engineers</td><td>1 Graduate Engineers</td></tr> <tr><td>_____ Civil Engineers</td><td>_____ Interior Designers</td><td>_____ Project Managers</td></tr> <tr><td>_____ Construction Inspectors</td><td>_____ Landscape Architects</td><td>7 Clerical</td></tr> <tr><td>_____ Ecologists</td><td>_____ Land Surveyor</td><td>_____ Grant/Funding Specialist</td></tr> <tr><td>_____ Electrical Engineers</td><td>_____ Mechanical Engineers</td><td>_____ Sanitary Engineers</td></tr> <tr><td>4 Engineer Intern</td><td>_____ Environmental Engineers</td><td>48 Other</td></tr> <tr><td>_____ Professional Land Surveyors</td><td></td><td>_____ TOTAL</td></tr> <tr><td></td><td></td><td>81</td></tr> </table>	7 Administrative	Estimators	_____ Specification Writers	_____ Architects (Licensed)	1 Geologists	_____ Structural Engineers	_____ Chemical Engineers	13 Geotechnical Engineers	1 Graduate Engineers	_____ Civil Engineers	_____ Interior Designers	_____ Project Managers	_____ Construction Inspectors	_____ Landscape Architects	7 Clerical	_____ Ecologists	_____ Land Surveyor	_____ Grant/Funding Specialist	_____ Electrical Engineers	_____ Mechanical Engineers	_____ Sanitary Engineers	4 Engineer Intern	_____ Environmental Engineers	48 Other	_____ Professional Land Surveyors		_____ TOTAL			81		
7 Administrative	Estimators	_____ Specification Writers																														
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_____ Ecologists	_____ Land Surveyor	_____ Grant/Funding Specialist																														
_____ Electrical Engineers	_____ Mechanical Engineers	_____ Sanitary Engineers																														
4 Engineer Intern	_____ Environmental Engineers	48 Other																														
_____ Professional Land Surveyors		_____ TOTAL																														
		81																														
F. Is this submittal is a JOINT-VENTURE? Please check: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>																																
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.

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. None.		
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, administrative, and engineering staff. More employees can be added, as necessary, to complete any project.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:	
Name & Title:	
Benjamin M. Cody, P.E. / Principal Engineer	
Project Assignment:	
Project Manager	
Name of Firm with which Associated:	
Eustis Engineering L.L.C.	
Years' Experience with This Firm:	
20	
Education: Degree(s)/Year/Specialization:	
Master of Science / 1999 / Civil Engineering Bachelor of Science / 1996 / Civil Engineering	
Active Registration: Year First Registered/Discipline:	
Louisiana: 2002/Registered Professional Engineer Florida: 2001/Registered Professional Engineer Alabama: 2001/Registered Professional Engineer	Mississippi: 2007/Registered Professional Engineer Texas: 2014/Registered Professional Engineer Arkansas: 2014/Registered Professional Engineer
Other Experience and Qualifications Relevant to the Proposed Project:	
<p>From 1993 to 1994, Mr. Cody worked with Eustis Engineering as a soil technician. Since that time, he has completed his education and achieved the level of professional engineer.</p> <p>After leaving Eustis Engineering in 1994, Mr. Cody worked as an engineering technician with the Sewerage and Water Board of New Orleans and as a student laboratory coordinator at Tulane University's Department of Civil Engineering. Mr. Cody also assisted in teaching the introductory soil mechanics laboratory sessions.</p> <p>For more than a year, he worked as a graduate research assistant at Tulane. At that time, he was responsible for the design, construction, and implementation of bench scale testing system in contaminated soil remediation.</p> <p>From 1998 until 2001, Mr. Cody worked for engineering firms in Florida. He performed such duties as soil evaluation and engineering recommendations for projects of varying sizes including multi-story structures, bridges, and roadways. He performed Phase I environmental site assessments as well as geotechnical sensor installation.</p> <p>In 2001, he returned to the New Orleans area and to Eustis Engineering as a Project Engineer and now serves as a project manager and Principal Engineer with the firm. Since his return, Mr. Cody has performed a wide variety of engineering services including geotechnical project management, engineering design, engineering during construction, and dynamic pile testing. Private sector projects have varied from small private and commercial structures to multi-story high-rise structures, storage tanks, and other industrial facilities. Public projects have included roads and bridges, port facilities, government buildings and facilities, schools, and hurricane protection system improvements.</p> <p>Some of Mr. Cody's project experience, shown in this submittal, includes the following.</p> <ul style="list-style-type: none"> • Jefferson Parish, Jung and Falcone Lift Station Upgrades (K-11-3), New Sanitary Lift Station, Marrero, Louisiana, Eustis Engineering Project No. 23819: Engineering analyses included excavation recommendations; 	

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

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

dewatering and pressure relief; lateral earth pressures; allowable soil bearing values; allowable pile load capacities; and settlement estimates.

- **City of Kenner, Lift Station No. 4102, Airline Highway and Minden Avenue, Jefferson Parish, Louisiana, Eustis Engineering Project No. 22317:** The focus of this project was a valve pit planned adjacent to the existing lift station. After performing a geotechnical exploration and associated laboratory testing, engineering analyses and recommendations were provided comprising dewatering and pressure relief; lateral movement and settlement of the adjacent ground surface; bottom preparation of the lift station; allowable pile load capacities; estimates of settlement; and differential settlement estimates.
- **City of Kenner, Sewer Capital Improvement Program, Sewage Pumping Station Upgrade, 31st Street and Jasper Street Lift Station, Kenner, Louisiana, Eustis Engineering Project Nos. 21834 and 22559:** Mr. Cody was Project Engineer for this work. A new below-grade submersible lift station was proposed to replace the existing lift station. After drilling a boring and performing laboratory tests on samples obtained from the boring, the client was provided with estimates of settlement, allowable soil bearing values, and allowable load capacities for timber piles. Recommendations for both rigid and flexible pavements, a temporary restraining system, and foundation construction procedures were also provided.
- **Sewerage & Water Board of New Orleans - Wastewater Rehabilitation Program at Multiple Sewer Pump Station Sites, New Orleans, Louisiana, Eustis Engineering Project Nos. 20701 and 22393:** Geotechnical information was obtained for seven sewer pump stations. Borings were drilled and engineering analyses performed for each location. Later, engineering during construction services were provided for six of the original seven locations. These services included temporary retaining structure review, dynamic pile testing, wave equation analyses of piles (WEAP), vibration monitoring, and observation during the cutting of concrete cores. Mr. Cody served as a project engineer with a particular focus on WEAP analyses.
- **Ascension Parish Government - Hillaryville Wastewater Treatment Plant, Pump Station, and Effluent Force Main, Hillaryville, Louisiana, Eustis Engineering Project Nos. 23149 (.01, .02, .03):** Mr. Cody was project manager for these geotechnical explorations. A proposed pump station and effluent force main required design input. Services included a geotechnical exploration, laboratory testing, engineering analyses, foundation recommendations, and pile load capacities. When the wastewater treatment plant was up for replacement, similar tasks were performed, as well as design services including submittal review and participation in design team meetings.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Gwendolyn P. Sanders, P.E. / President
Project Assignment:
Principal Engineer
Name of Firm with which Associated:
Eustis Engineering L.L.C.
Years' Experience with This Firm:
28
Education: Degree(s)/Year/Specialization:
Bachelor of Science/1990/Civil Engineering Master of Science/1992/Civil Engineering
Active Registration: Year First Registered/Discipline:
Louisiana: 1997/Civil Engineering Mississippi: 2003/Civil Engineering Texas: 2020/Civil Engineering
Other Experience and Qualifications Relevant to the Proposed Project:
<p>Mrs. Sanders began her professional career with Eustis Engineering in 1993. Over the past 28 years, she has worked her way up through the ranks of the engineering department as an Associate Engineer, Project Engineer, Project Manager, and Engineering Manager. In 2020, Mrs. Sanders became Eustis Engineering's first woman president. As president, she is responsible for day-to-day business operations of the corporation. These include quality, safety, marketing, and long-term strategic growth. She also still actively participates in the engineering design and review processes.</p> <p>Considering her experience with Eustis Engineering, a leading Gulf Coast geotechnical firm, Mrs. Sanders has extensive experience in soft soils and working on projects in coastal Louisiana. She has been directly and indirectly involved in numerous projects throughout the Gulf Coast region, particularly in the Greater New Orleans area. Mrs. Sanders has been involved in and managed every aspect of a geotechnical engineering project, namely developing appropriate scopes of work for projects, planning and coordinating the field investigation, assigning laboratory testing, performing geotechnical engineering analyses, preparing detailed reports with engineering analyses and recommendations, reviewing reports prepared by other professionals, and consulting with clients. A majority of her work experience has dealt with identifying soil properties, developing criteria for design of foundations, and determining an appropriate foundation to support the structure under consideration.</p> <p>In 2017, Mrs. Sanders served as program advisor for the Deep Foundations Institute's 42nd annual conference. That same year, she was named one of the 50 Women of the Year by New Orleans' City Business. Mrs. Sanders is currently serving as an associate member of the American Society of Civil Engineer's Standards Committee for the Design and Construction of Foundations. She has a keen eye for detail and is a stickler for quality. Her work ethic and quality, combined with her communication skills, translate to Mrs. Sanders' ability to deliver successful geotechnical engineering projects to her clients.</p>

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

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 six contained within this submittal.

- **Cheval Point Subdivision - Lift Station, LA Highway 327, Baton Rouge, Louisiana, Eustis Engineering Project Nos. 22953 and 23692:** Development of geotechnical design recommendations for a retaining structure at the proposed lift station, a dewatering well point system for construction of the lift station, and a permanent hydrostatic pressure relief system.
- **Bellevue Country Estates - Phases IV, V, and VI, Pavements, Lake, and Sewer Lift Station, Paulina, Louisiana, Principal Engineering Project No. 1511, Eustis Engineering Project No. 23451:** Engineering analyses and recommendations included suitability of excavated soil from the proposed lake site for use in other construction areas; the need for an adequate liner along the bottom and side slopes throughout the lake; the need for erosion control after the lake's construction; general site preparation; allowable soil bearing values for the sewer lift station; allowable pile load capacities for treated ASTM D25 quality timber piles for the lift station; stability of the lift station against bearing capacity failure and hydrostatic uplift; etc.
- **Jefferson Parish, Lift Station G8-2, Tolmas Drive and West Esplanade Avenue, Metairie, Louisiana, Eustis Engineering Project No. 22583:** This project required use of at-rest pressures to determine the structural requirements for any buried structures; stability analyses of the structure against hydrostatic uplift; base preparation recommendations for the valve pit foundation; allowable soil bearing values; allowable pile load capacities; settlement estimates; excavation and dewatering recommendations; etc.
- **Town of Henderson - Sewer Improvements, North of Interstate 10, Pump Station, Henderson, Louisiana, Eustis Engineering Project No. L0462:** Engineering analyses included estimates of allowable soil bearing values, geotextile use, lateral earth pressure, uplift pressure of the wet well, settlement, excavations, dewatering, and pressure relief of the temporary retaining structures.
- **Sewerage & Water Board of New Orleans - Wastewater Rehabilitation Program at Multiple Sewer Pump Station Sites, New Orleans, Louisiana, Eustis Engineering Project Nos. 20701 and 22393:** Geotechnical information was obtained for seven sewer pump stations. Borings were drilled and engineering analyses performed for each location. Later, engineering during construction services were provided for six of the original seven locations. These services included temporary retaining structure review, dynamic pile testing, wave equation analyses of piles, vibration monitoring, and observation during the cutting of concrete cores.
- **Sewerage & Water Board of New Orleans - Modifications to East Bank, Wastewater Treatment Plant, Construction of Monoliths 118-120, Orleans Parish, Louisiana, Eustis Engineering Project No. 22627:** Two important pipelines were unable to be relocated for this project. Therefore, an evaluation was performed to analyze the impacts of pile driving on these pipes, with an emphasis on reducing vibrations at the sewer force mains during driving. Available data and pile installation techniques were evaluated to provide estimates of allowable pile load capacities and estimates of minimum distances between pile driving operations and existing sewer force mains.

PROJECT NO. 1

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

PROJECT NO. 2

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

Nature of Firm's Responsibility:

**Cheval Point Subdivision
Lift Station
LA Highway 327
Baton Rouge, Louisiana
Eustis Engineering Project Nos.
22953 and 23692**

Cheval Point Development, LLC
Suite 3B
9191 Siegen Lane
Baton Rouge, Louisiana 70810
Wesley Daniel @ 225-279-5410

Cheval Point Subdivision was a 57-acre site on LA Highway 327 approximately 175 feet landward of the left descending bank of the Mississippi River levee. Because of the site's location, several government agencies were included in the permitting process.

Eustis Engineering was requested by the owner to perform a technical review of the latest permit plans. Eustis Engineering was also asked to provide geotechnical design recommendations for a retaining structure at the proposed lift station, a dewatering well point system for construction of the lift station, and a permanent hydrostatic pressure relief system.

Our scope of services included cone penetration tests (CPTs) at the proposed location of a new sanitary sewer lift station to evaluate the subsoil conditions at the site. Two static CPTs were made by Eustis Engineering, one to 21 feet and one to 76 feet below the existing ground surface. During the CPTs, pore pressure dissipation tests were conducted at various depths by halting the penetration and measuring the decay of pore water pressure with time. Measurements of pore pressure decay were taken for a minimum of 1,000 seconds at each test depth. The rate of excess pore pressure dissipation was measured and plotted versus time to estimate the horizontal coefficient of consolidation.

Based on our interpretation of the CPT results as well as soil borings and CPT results from past projects performed by our firm and the U.S. Army Corps of Engineers for this project, we developed recommendations for construction of a retaining structure, recommendations for a permanent pressure relief system, and estimates for a temporary pressure relief system.

Following our technical review of the general civil engineer's recent permit plans, Eustis Engineering's recommendations and estimates were to be incorporated into the engineer's project plans for a formal resubmission to the Pontchartrain Levee District.

Eustis Engineering presented a conceptual plan for construction of the proposed lift station. This plan was based on lift station construction using a sheetpile retaining structure and providing hydrostatic pressure relief both during construction and for the design life of the completed lift station. Our conceptual plan was based on providing one of two methods of hydrostatic pressure relief by using either (1) a conventional active system of pressure relief wells or (2) a soil improvement solution by jet grouting. These conceptual solutions were based on design criteria to resist hydrostatic heave and seepage during and after construction.

PROJECT NO. 2		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
	<p>As part of the project, Eustis Engineering also installed two temporary "Casagrande" type, open standpipe piezometers, one within and one outside the retaining structure. The purpose of the piezometers was to monitor excess hydrostatic pressure of the transition and aquifer strata at the retaining structure.</p> <p>Eustis Engineering remained on site during construction providing construction oversight associated with the lift station.</p>	
Completion Date (Actual or Estimated)	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
April 2018 (Actual)	Unknown	\$63,400



PROJECT NO. 3

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> Bellevue Country Estates Phases IV, V, and VI Pavements, Lake, and Sewer Lift Station Paulina, Louisiana Principal Engineering Project No. 1511 Eustis Engineering Project No. 23451 </p> <p align="center"> Landcraft Homes, L.L.C. Post Office Box 2470 LaPlace, Louisiana 70069 Joseph M. Scontrino III @ 985-651-3007 </p>	<p>Bellevue Country Estates in Paulina, Louisiana, was built in phases in a relatively level sugarcane field that included drainage ditches and an access road. Phases IV, V, and VI of the 81-lot development included the construction of nearly 4,000 feet of roadway pavements, a 7-ft deep lake, and a 16-ft deep sewer lift station. The lift station was to consist of a 6-ft diameter wet well with an invert located approximately 15 feet below the ground surface and the bottom slab at 16 feet. The lift station would be constructed using 6-ft diameter reinforced concrete pipe (weighing approximately 1,850 lb/lf).</p> <p>When our personnel arrived on site, they discovered standing water and soft ground conditions. After performing seven auger borings, we received authorization from the owner to use a track mounted rig instead of the planned truck mounted rig. We drilled three undisturbed soil test borings and the eighth auger boring. One soil boring was drilled to a depth of 60 feet near the location of the proposed sewer lift station, and the other two borings were drilled to depths of 15 feet each near the proposed lake. Auger borings were drilled to depths of 8 feet along the proposed roadway alignment.</p> <p>Soil mechanics laboratory tests were performed on samples collected in the field. In conjunction with the soil borings and laboratory test results, engineering analyses were made to determine recommendations regarding the suitability of excavated soil from the proposed lake site for use in other construction areas; the need for an adequate liner along the bottom and side slopes of the lake; the need for erosion control after the lake's construction; general site preparation including drainage during and after construction; subgrade preparation and stabilization for proposed roadways; select backfill and structural fill and its compaction; pavement recommendations for flexible and rigid pavements; allowable soil bearing values for the sewer lift station; allowable pile load capacities, in compression and tension, for various sizes and embedments of treated ASTM D25 quality timber piles for the lift station; stability of the lift station against a bearing capacity failure and hydrostatic uplift; estimates of settlement and differential settlement due to fill placement and between pile/grade supported features; and the use of temporary retaining structures as well as dewatering and pressure relief during construction of the sewer lift station.</p>	
<p align="center">Completion Date (Actual or Estimated)</p>	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
<p align="center">March 2017 (Actual)</p>	Unknown	\$9,000

PROJECT NO. 4

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

PROJECT NO. 5

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

PROJECT NO. 6

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

Nature of Firm's Responsibility:

**City of Kenner
Sewer Capital Improvement Program
Sewage Pumping Station Upgrade
31st Street and Jasper Street Lift Station
Jefferson Parish, Louisiana
Eustis Engineering Project Nos.
21834 and 22559**

City of Kenner
Department of Public Works Through
Design Engineering, Inc.
Suite 205
3330 West Esplanade Avenue
Metairie, Louisiana 70002
John Holtgreve @ 504-836-2155

Construction was to consist of a new wet well 20 to 25 feet below the existing ground surface, a valve pit 6 to 8 feet below the existing ground surface, and an electrical panel located at the ground surface. The wet well and valve pit would each have a 12' x 12' pad. The electrical panel would have a 2' x 5' pad. Both shallow foundation systems and treated timber piles were being considered for support of the project features.

One undisturbed soil test boring was made at the site. The boring was drilled to a depth of 80 feet below the existing ground surface. Upon completion of the drilling operations, the boring was backfilled in accordance with current regulatory requirements and the pavement patched. GPS coordinates of the boring were obtained using a handheld device.

Soil mechanics laboratory tests, performed on samples obtained from the boring, were used to evaluate the physical properties of the various substrata.

Engineering analyses, based on the soil boring and laboratory test results, were made to determine recommendations regarding site preparation and drainage, pipe bedding, estimates of allowable soil bearing values, estimates of allowable load capacities for timber piles, estimates of settlement, a temporary restraining system, and foundation construction procedures as well as recommendations for rigid and flexible pavements.

Eustis Engineering also provided construction materials testing services for this project. Those services included:

- soil mechanics laboratory tests including moisture content, Atterberg limits, mechanical analysis, and standard Proctor;
- inplace density tests on sand, limestone, and crushed concrete for use as structural backfill, bedding, and base course;
- visual and physical inspection of more than 1,620 feet of timber piles;
- pile logging during installation;
- performance of vibration and acoustical monitoring during pile installation;
- review of asphalt and concrete mix designs intended for use on the project;
- visual and physical inspection of concrete placed for the lift station slab, seal slab, foundation slab, skid foundation, tank bottom, manhole, electrical pad, sidewalk, and roadway;

PROJECT NO. 6		
Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
	<ul style="list-style-type: none"> • compressive strength tests on concrete cylinders made during the above inspection; and • the coring and inspection of asphalt. 	
Completion Date (Actual or Estimated)	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
April 2015 (Actual)	Unknown	\$19,300



PROJECT NO. 7

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> Town of Henderson Sewer Improvements North of Interstate 10 Pump Station Henderson, Louisiana Eustis Engineering Project No. L0462 </p> <p> Town of Henderson, Louisiana Post Office Box 595 Henderson, Louisiana 70517 Sherbin Collette @ 337-228-7109 </p>	<p>Sewer improvements were planned for the Town of Henderson, Louisiana. A new pump station, comprising a wet well and valve pit, would be constructed on North Barn Road.</p> <p>Plans called for the wet well to be supported by an 18-in. thick concrete mat underlain by 12 inches of limestone bedding. It would be constructed of precast, reinforced concrete pipe sections having outside diameter dimensions of 72 inches with a square mat foundation having plan dimensions of 9.3' x 9.3'. The excavation for the wet well would be made to a depth of 21.5 feet below the existing ground surface.</p> <p>The adjacent valve pit would be constructed of precast, reinforced concrete pipe sections having outside diameter dimensions of 60 inches. Drawings indicated the valve pit would be supported by a 12-in. thick concrete mat underlain by 12 inches of limestone bedding. The valve pit would require excavation to an approximate depth of 6 feet below the existing ground surface. Plans also indicated the valve pit mat foundation would have plan dimensions of 7' x 7'.</p> <p>One soil boring was made to a depth of 60 feet using a truck mounted rotary type drill rig for the purpose of evaluating subsoil conditions and stratification, and to obtain samples of the various substrata. Soil mechanics laboratory tests consisted of natural water content, unit weight, unconfined compression shear, and unconsolidated undrained triaxial compression shear. In addition, Atterberg liquid and plastic limits tests were performed on selected soil samples.</p> <p>Engineering analyses, based on the soil boring and laboratory tests, were made to determine recommendations regarding site preparation; estimates of allowable soil bearing values; geotextile use, lateral earth pressure, and uplift pressure of the wet well; settlement, excavations, dewatering, and pressure relief of the temporary retaining structures (for cost estimating purposes only); and construction monitoring.</p>	
<p align="center">Completion Date (Actual or Estimated)</p>	<p align="center">Estimated Cost:</p>	
<p align="center">August 2016 (Actual)</p>	<p align="center">Entire Project:</p> <p align="center">Unknown</p>	<p align="center">Work for Which Firm Was Responsible:</p> <p align="center">\$7,200</p>

PROJECT NO. 8

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p>Sewerage & Water Board of New Orleans Wastewater Rehabilitation Program at Multiple Sewer Pump Station Sites New Orleans, Louisiana Eustis Engineering Project Nos. 20701 and 22393</p> <p>Sewerage & Water Board of New Orleans Through Design Engineering, Inc. Suite 205 3330 West Esplanade Avenue Metairie, Louisiana 70002 John Holtgreve @ 504-836-2155</p>	<p>This project required geotechnical information for seven sewer pump stations with plan dimensions of approximately 18' x 22'. The structures would be located approximately 7 feet below existing grade and would be supported on driven pile foundations. Piling under consideration included treated timber and square, prestressed, precast concrete piles.</p> <p>An elevated 8' X 15' electrical platform would be supported at grade on a 10' x 15' foundation slab. The total weight of the platform with roof and live loads was 68 kips. Roof uplift would create a net tension load of 17 kips on the platform. The distributed uniform loading on the 10' x 15' foundation slab was estimated to be 453 psf (not including the weight of the foundation slab).</p> <p>The existing pump stations were pile supported. At five of the seven pump station sites, specific information was provided by Design Engineering, Inc., for influent and discharge pipe depths, and for new and existing foundation depths below existing grade. We estimated pipe and foundation depths at the remaining two pump stations. New pipe diameters were estimated to range from 12 to 18 inches.</p> <p>Seven undisturbed soil test borings were drilled for the project. Six borings were made to depths of 100 feet, and one terminated at a depth of 85 feet below the existing ground surface. The undisturbed borings were made with a truck mounted Failing 3600 wet rotary type drill rig. Upon completion of the drilling operations, the borings were backfilled with cement-bentonite grout in accordance with current regulatory requirements. Soil mechanics laboratory tests, performed on samples obtained from the borings, were used to evaluate the physical properties of the subsoils.</p> <p>Engineering analyses, based on the soil borings and laboratory tests, were performed to develop recommendations regarding site preparation, placement and compaction of fill, allowable soil bearing values, allowable pile load capacities, and estimated settlement. Construction recommendations were also provided for excavations and dewatering.</p> <p>Eustis Engineering provided professional geotechnical engineering services during construction for six of the pump stations previously analyzed for the design phase of the project. Our services included a review of temporary retaining structures (sheetpile walls), dynamic pile testing, wave equation analyses of pile driving methods, vibration monitoring, and observation services during the cutting of concrete cores.</p>	
<p align="center">Completion Date (Actual or Estimated)</p>	<p align="center">Estimated Cost:</p>	
<p align="center">November 2015 (Actual)</p>	<p align="center">Entire Project:</p>	<p align="center">Work for Which Firm Was Responsible:</p>
	<p align="center">Unknown</p>	<p align="center">\$62,800</p>

PROJECT NO. 9

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:
<p>Ascension Parish Government Hillaryville Wastewater Treatment Plant Pump Station, and Effluent Force Main Hillaryville, Louisiana Eustis Engineering Project Nos. 23149 (.01, .02, .03)</p> <p>Ascension Parish Government Through MSMM Engineering, LLC Suite 220 4640 South Carrollton Avenue New Orleans, Louisiana 70119 Mardia Manish @ 504-570-6098</p>	<p>Improvements, specifically an 8-ft diameter wet well and valve pit, were proposed to the existing pump station at the Hillaryville Wastewater Treatment Plant in Hillaryville, Louisiana. The top of the slab for the proposed wet well would be installed to approximate el -3.5 and the top of the slab for the valve pit would be installed to approximate el 5. The net bearing intensity of the wet well would be 250 psf; the bearing intensity of the valve pit would be less than the soil excavated for the pit.</p> <p>One 5-in. diameter undisturbed soil boring was made at the pump station location within the existing Hillaryville Wastewater Treatment Plant. One 3-in. diameter undisturbed soil boring was made near the intersection of Marchand School Road and River Road (LA Highway 942). Both were drilled with truck mounted wet rotary equipment to depths of 75 feet and 80 feet, respectively, below the existing ground surface. Upon completion of drilling, the holes were grouted in accordance with current regulatory requirements. Additional data were obtained from the U.S. Army Corps of Engineers, New Orleans District, using the Freedom of Information Act request. This information contained pertinent USACE slope stability plates and levee cross-sections for the left descending bank near Mississippi River Mile 171.4 AHP. Soil mechanics laboratory tests, primarily consisting of natural water content, unit weight, and unconfined compression shear, or unconsolidated undrained triaxial compression shear, were used to evaluate the physical properties of the various substrata.</p> <p>Based on the available soil boring and laboratory test data, engineering analyses and foundation recommendations included estimated allowable soil bearing values to sustain the structural loads of the mat-supported wet well and valve pit; sheetpile and bracing recommendations to maintain stability of the excavations; dewatering and pressure relief; lateral movement and settlement of the adjacent ground surface; analysis of temporary retaining structures; lateral earth pressures; recommended bedding and structural fill associated with the construction of the wet well and valve pit foundations; estimates of settlement and differential settlement associated with the project; allowable soil bearing values for the proposed pipe rack footings and access bridge abutment; and global and local stability analyses associated with these same structures.</p> <p>After completing the initial investigation, Eustis Engineering was requested to evaluate preliminary allowable single pile load capacities to aid in project construction budget estimates. Using available data, our engineers completed preliminary estimates of single pile load capacities, in compression and tension, for treated ASTM D25 quality timber piles.</p> <p>Shortly thereafter, Eustis Engineering was asked to provide additional geotechnical services, this time for the replacement of the wastewater treatment plant. The project was to consist of buildings proposed on</p>

PROJECT NO. 9

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
	<p>grade; reinforced and partially buried concrete tanks; a pump station with an approximate 20-ft depth; asphalt roadways within the site; and buried piping. New features would include an influent pump station and effluent pump station, an effluent force main, headworks, aeration basins, a sludge area controller, a chlorine disinfection unit, an aerobic digester, a filter press building, administrative building, and a maintenance building.</p> <p>The field exploration included three undisturbed borings between 80 and 100 feet below the existing ground surface; ten auger borings to depths of 8 feet; and 11 cone penetration tests to 80 feet. The field investigation was followed by the performance of soil mechanics laboratory tests to classify the subsoils and determine their relative compressibility.</p> <p>Engineering analyses and recommendations for this portion of the project included:</p> <ul style="list-style-type: none"> • ground water management; • site preparation including subgrade preparation, recommended structural fill and its compaction, and estimated fill settlement; • excavation and dewatering recommendations as well as recommendations with regard to lateral movement and settlement of the adjacent ground surface; • earth and water pressures (at-rest, active, passive, uplift); • site preparation associated with below grade structures including base preparation, material separation, and bedding recommendations; • pipeline recommendations including material separation, recommended bedding/backfill materials and their compaction, and settlement estimates; • shallow foundation recommendations including allowable soil bearing values for footings and settlement estimates; • mat foundation recommendations including allowable soil bearing values, net applied pressure intensity, and settlement estimates; • allowable pile load capacities for treated timber, timber composite, and precast concrete piles; • pile settlement estimates due to structural loads and fill placement; • pile installation recommendations; and • recommendations for flexible and rigid pavements. <p>Finally, Eustis Engineering participated in design team meetings and performed requested submittal reviews.</p>	
Completion Date (Actual or Estimated)	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
August 2020 (Actual)	Unknown	\$45,200

PROJECT NO. 10

Project Name, Location, and Owner's Contact Information:	Nature of Firm's Responsibility:	
<p align="center"> Sewerage & Water Board of New Orleans Modifications to East Bank Wastewater Treatment Plant Construction of Monoliths 118-120 Orleans Parish, Louisiana Eustis Engineering Project No. 22627 </p> <p> Sewerage & Water Board of New Orleans Through Integrated Management Services 126 East Amite Street Jackson, Mississippi 39201 Tommy Avant @ 901-968-9194 </p>	<p>Eustis Engineering was contracted to provide geotechnical engineering analyses for the construction of three monoliths at the East Bank Wastewater Treatment Plant in New Orleans. The construction of these monoliths had been postponed due to their close proximity to two pipelines. Initial plans had called for the relocation of these pipelines. However, due to the condition of the lines, relocation proved to be unfeasible. Leaks in these lines had been repaired by the installation of a pipe liner within each pipe.</p> <p>The proximity of construction activities and the condition and importance of these pipelines meant alternative methods of installing piles had to be explored to reduce vibrations at the sewer force mains during pile driving operations. The options being evaluated for this project included:</p> <ul style="list-style-type: none"> • using steel H-piles in lieu of concrete piles, • installing piles vertically rather than on a batter, • installing piles with the aid of predrilling, and • determining how far the piles would need to be spaced from the existing sewer force main to reduce vibrations. <p>Recommendations were based on review of available data from previous exploration and construction, estimates of allowable pile load capacities for steel H-piles, evaluation of pile installation techniques (such as predrilling), and estimates of minimum distances between pile driving operations and existing sewer force mains.</p>	
<p align="center">Completion Date (Actual or Estimated)</p> <p align="center">August 2014 (Actual)</p>	Estimated Cost:	
	Entire Project:	Work for Which Firm Was Responsible:
	<p align="center">Unknown</p>	<p align="center">\$6,000</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.		



TEC Professional Services Questionnaire

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-five years later*, our personnel and equipment occupy 40,000+ square feet of space in five locations.

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

Eustis Engineering is headquartered in Metairie, Louisiana, less than five miles from the project location at the intersection of Transcontinental Drive and Belle Drive. We also operate branch offices in Lafayette and Baton Rouge, Louisiana; in Gulfport, Mississippi; and in Houston, Texas. Our offices and staff collaborate seamlessly using Microsoft Teams and other virtual platforms.

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

- exploration (drilling of soil borings and cone penetration testing),
- soil mechanics laboratory tests,
- field instrumentation and monitoring,
- dynamic pile testing and non-destructive testing of piles/shafts,
- geotechnical engineering design, and
- construction quality control and materials testing services.

Eustis Engineering has worked on more than 25,000 projects since its inception. Over 4,000 of these projects were located in Jefferson Parish, and more than 1,000 have involved sewer systems in some capacity. This work history gives our engineering staff unparalleled familiarity with the foundation conditions in the Greater New Orleans area. Our engineers have provided geotechnical services at various levels in 22 states and one dozen foreign countries throughout the years.

ENGINEERING

Eustis Engineering has engineering capabilities to fulfill the requirements of nearly any project. We have developed pile capacity and bearing capacity analyses for projects throughout the coastal areas of the United States. We consider net and gross allowable bearing pressures in the design of below grade features. 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.

We perform settlement studies including estimates of settlement and time-rate of settlement, including the effects of drawdown on adjacent features. We evaluate appropriate backfills and bedding, and provide recommendations for their placement and compaction.

Our capabilities extend to performance of deep-seated global stability analyses for structures using Spencer's Method as coded in SLOPE/W and the LMVD Method of Planes as coded in UPLIFT. These programs are also used for the design and verification of levees, reinforced embankments, revetments, channel slopes, and open excavations. Our staff

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

evaluates local and global stability of temporary and permanent retaining structures. We provide recommendations for dewatering and pressure relief during construction and operation of below grade structures.

In our practice, Eustis Engineering has developed methodologies associated with the estimates of negative skin friction on pile foundations. The methods are the current state of practice. The extension of these methods is an evaluation of settlement induced bending moment (SIBM). Eustis Engineering is also utilizing a numerical model program SIGMA/W in association with the rigorous settlement program Settle3.

Finally, Eustis Engineering has performed seepage analyses for evaluation of heave, uplift, and piping. We use EM 1110-2-1913, EM 1110-2-1901, and DNR 1110-1-400 for manual calculations that consider blanket theory for earthen embankments and levees. We also use SEEP/W for a computer model and typically compare the results of manual calculations to the SEEP/W model as a quality assurance procedure.

Staffing

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

Employee	Education	Experience	
		Years with Eustis Engineering	Total Years
Professional Engineers (P.E.)			
Benjamin M. Cody	M.S. / Civil Engineering	20	24
Brian A. Deschamp	B.S. / Civil & Environmental Engineering	9	9
	B.A. / Business Administration		
James J. Hance	M.S. / Civil Engineering	18	22
	M.B.A. / Business Administration		
Chad L. Held	M.S. / Civil Engineering	30	30
David J. Indest	M.S. / Civil Engineering	20	20
Matthew K. Morales	B.S. / Civil Engineering	12	12
Travis R. Richards	M.S. / Engineering	15	22
	M.S. / Engineering Management		
	Coastal Engineering Certificate		
Gwendolyn P. Sanders	M.S. / Engineering	28	28
Shaun R. Simon	M.S. / Civil Engineering	21	21
Patrick A. Thurmond	M.S. Engineering Management	6	6
	M.S. / Civil Engineering		
	Coastal Engineering Certificate		
Sean G. Walsh	M.S. / Civil Engineering	9	14
Benjamin G. Weinberg ⁽¹⁾	B.S. / Civil & Environmental Engineering	1	8
	M.B.A. / Business Administration		

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

Employee	Education	Experience	
		Years with Eustis Engineering	Total Years
Henry C. Worley	B.S. / Civil Engineering	3	5
	Coastal Engineering Certificate		
Engineering Interns (E.I.)			
Patrick T. Duckworth	M.S. / Civil Engineering	1	1
Lars A. Erickson	B.S. / Civil & Environmental Engineering	5	5
	Coastal Engineering Certificate		
Tomas K. Morales ⁽³⁾	B.S. / Civil Engineering	8	8
Joel R. Smith	B.S. / Civil Engineering	1	5
James M. Williams ⁽²⁾	M.S. / Civil Engineering	3	3
Engineering Graduates			
Lesley L. Reitmeyer	B.S. / Civil Engineering	12	12
Sean T. Smith ⁽³⁾	B.S. / Civil Engineering	5	5
Geologists			
Matthew J. Blasini	B.S. / Geology	1	2
Total Years of Experience		228	262

- (1) P.E. outside Louisiana.
- (2) Passed P.E. Exam, licensure pending one more year of experience.
- (3) Long Term Subcontractor

Cone Penetration Testing Capabilities

Eustis Engineering owns two dedicated track mounted CPT rigs and operates four other multi-purpose rigs that can perform CPTs. Operators are either specifically trained engineering technicians or engineers who perform the field operations utilizing the CPT equipment. Engineers with specialized knowledge and experience operating the rigs evaluate the sounds and produce the CPT logs. Five of our CPT rigs can be placed on a cargo buggy, shallow draft barge, or airboat to access coastal marsh or open water.

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 and closed end steel pipe piles, and steel H-piles.

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

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

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

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

Other Non-Destructive Testing Capabilities

Our engineering staff at Eustis Engineering also performs other non-destructive testing services to verify the structural integrity of drilled shafts, augercast piles, and precast concrete piles. Some of these processes include 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

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.

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 on land, and in water and marsh environments as indicated in the following table.

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

Capabilities of Eustis Engineering's Drill Staff	Scott Bombard	Jordan Brightwell	James Cordes	Rene Davidson	Eric Held	Julius Ivery	James Lubben	George Reitmeyer	Lawrence Rome
Hand Auger Borings	X	X	X	X	X	X	X		X
General Type (3-in. Diameter Borings)	X	X	X	X	X	X	X		X
General Type (3-in. Diameter Borings) in Hard Access Locations (Marsh, Swamp, Heavily Forested)	X	X	X	X	X	X	X		X
Undisturbed Type (5-in. Diameter Borings)	X	X	X	X	X	X	X		X
Undisturbed Type (5-in. Diameter Borings) in Hard Access Locations (Marsh, Swamp, Heavily Forested)		X	X	X	X	X	X		X
Boring Location Information (Elevation, Latitude, Longitude, Station, Offset)		X	X	X	X	X	X		X
Set Permanent Benchmarks		X	X	X	X	X	X		X
Install Instrumentation		X	X	X	X	X	X		X
Cone Penetration Tests					X			X	
Geoprobe® Sampling	X		X		X		X		X

Equipment

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

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

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

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

LABORATORY

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

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

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

Technical testing common to our laboratories includes ASTM, ACI, LaDOTD, AASHTO, FAA, and U.S. Army Corps of Engineers. Our laboratories hold accreditations from AASHTO, LaDOTD, and the U.S. Army Corps of Engineers.

Staffing

Eustis Engineering currently has more than a dozen technicians to perform soil mechanics laboratory testing. These technicians are versed in the latest standards from ASTM, LaDOTD, MDOT, AASHTO, FAA, and the U.S. Army Corps of Engineers. 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's laboratory is accredited with the AASHTO Materials Reference Laboratory (AMRL) in the areas of soil, aggregate, and Portland Cement Concrete.

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 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.

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

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

Signature:  Print Name: Gwendolyn P. Sanders, P.E.
 Title: President Date: 10 May 2021





Trigon

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