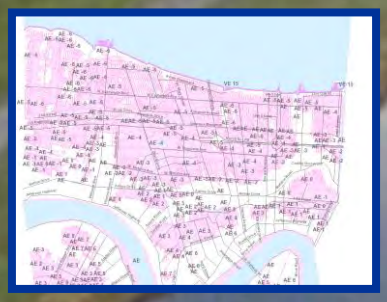
A Jefferson Parish Company for 38 Years



Court Recognized H&H Modeling Experts

DESIGN ENGINEERING, INC.

Dewberry

BEST ENGINEERING FIRM WINNER 2021

Qualification Statement for
Routine Engineering Services for
Drainage Master Plan for
the East Bank of Jefferson Parish
SOQ 22-014 - Resolution No. 138896

March 24, 2022

Submitted by:
Design Engineering, Inc.
Dewberry Engineers, Inc.
Linfield, Hunter & Junius, Inc.
Batture, LLC

DESIGN ENGINEERING, INC.

March 24, 2022

Jefferson Parish Council
c/o Sidney Duffy, Buyer II
Purchasing Department
General Government Building
200 Derbigny Street, Suite 4400
Gretna, Louisiana 70053

Re: Qualification Statement Providing Professional Engineering and Supplemental Services for a Drainage Master Plan for the East Bank of Jefferson Parish
SOQ No. 22-014
Resolution No. 138896

Dear Ms. Duffy

In response to your Public Notice requesting qualification statements from engineering firms to provide a Drainage Master Plan for the East Bank of Jefferson Parish, Design Engineering, Inc. (DEI) is pleased to submit the enclosed Jefferson Parish TEC Professional Services Questionnaire for your consideration.

The principals and technical staff members of DEI, Dewberry, and Linfield, Hunter, and Junius have decades of experience modeling hydrology and hydraulic systems using multiple software, including SWMM. The Team has also designed dozens of drainage projects in the region from simple to the most complex. Therefore, any results from the model will be reviewed focusing on economical and practical design and construction.

DEI is a Jefferson Parish company (founded here in 1984 and located here since). Accordingly, all work will be performed and supervised by a firm whose staff has years of experience modeling and designing projects for Jefferson Parish.

With respect to current workload, our Team has the staff and capabilities presently available to complete the project in the most expeditious manner possible. We have the capacity (in Dewberry) to reach back into a national firm's bench should the need arise.

We look forward to being of service to Jefferson Parish and respectfully submit this qualification statement for your consideration.

Sincerely,
Design Engineering, Inc.

Jim Martin, Ph.D., P.E.
President

Design Engineering, Inc.
3330 West Esplanade, Suite 205, Metairie, Louisiana 70002
(504) 836-2155 • Fax (504) 836-2159 • E-mail: deiengr@dei-engr.com

EXECUTIVE SUMMARY

I. PEOPLE

The following key personnel will be working on this critical Parish program:

Dr. Jim Martin (DEI's President) is a lifelong resident of Jefferson Parish. His PhD was earned at Tulane University in hydrology and hydraulics (H/H). His course work and dissertation extensively examined one-, two-, and three-dimensional H/H modeling. Since then, he has performed H/H modeling on dozens of Parish projects. He led modeling efforts at BKI and at GEC before leaving to become President of DEI; much of their modeling experience between 2002 and 2014 was performed by or with Dr. Martin. He has served as a court-recognized H/H expert and is trusted to review other companies' H/H models and conclusions to determine whether they meet the appropriate standard of care for H/H engineering work. His work in this field has withstood the scrutiny of depositions, Daubert challenges, and trial cross-examinations.

DEI has also secured the written commitment of Cecil Soileau, PE to serve in the role of QC/QA Manager (if DEI is awarded a contract). Cecil is more familiar with the Jefferson Parish SWMM models than any other person. He personally performed the last Parish model update (from HEC-RAS to SWMM).

Mr. John W. Holtgreve, P.E. has been working on Jefferson Parish Drainage Projects for 42 years. In 1980, he was a key member of the original Jefferson Parish Drainage Master Plan Team. He holds a BS and a MS in Civil Engineering from Tulane University and has lived here his entire life.

Mr. Sam Fleming is a SWMM expert. SWMM is the Modeling Software that Jefferson Parish currently employs and will employ for the Drainage Master Plan. He has over 25 years of experience in H/H modeling and design. He has led multiple water resources projects including stormwater infrastructure system assessment, stream restoration, floodplain studies, and expert witness services. Mr. Fleming has directed the engineering for projects requiring extensive H/H modeling such as a FEMA flood map Modernization Program, a NRCS Watershed Dam Rehabilitation, an entire Stormwater Utility, and Stormwater Infrastructure Improvements Programs.

Mr. Ben Bartlett has focused his work on Jefferson Parish drainage since the beginning of his career. He has performed H/H modeling on 5 expert witness cases, West Esplanade Canal, Duncan Canal, Causeway Blvd, and Frisco Ave, to name only a few. He has also performed these services for St. Charles Parish, Covington, Mandeville, and St. Tammany. He understands the specifics of how the Jefferson Parish Drainage Basins function and the conditions of southeast Louisiana.

II. EXPERIENCE

DEI is a Jefferson Parish company (founded here in 1984 and located here ever since). We have modeled and designed Jefferson Parish Drainage Projects as complex as frontal pumping stations and as simple as residential gravity lines.

DEI modeled an enclosure for the West Esplanade Canal and channel improvements to West Metairie Canal. DEI updated the Parish's East Bank H/H model for improvements to the Duncan Canal cross section, pump station, and drainage basin. DEI modeled and designed drainage crossings of Airline Highway at St. Peters Ditch and of General De Gaulle at Wall Blvd. DEI modeled a frequently flooded area at the corner of Metairie Road and Frisco to examine feasibility of

improvements to reduce frequent flood losses. DEI and the Parish won the Best overall project in 2012 and Best Sustainability Project for our modeling, design, and construction of Planters Pumping Station.

III. MASTER DRAINAGE PLAN APPROACH

We have been planning our approach to this project for nearly a year. Below is a summary of how we will successfully meet the challenge:

1. Data Collection

DEI will obtain the existing SWMM model and all as-built plans for projects completed since the last model update from the Parish, the Municipalities, the State, CPRA, USACE and others. We will collect new data from the field as needed as well.

2. Model Updates

The Jefferson Parish SWMM model will be updated to current conditions. Initially this will require taking information from all new as-built plans and updating the canals, culverts, gravity lines, and pump stations. Next, LIDAR data will be evaluated to determine what subsidence has occurred since the prior model update. In addition, relative sea level rise will be used to update the boundary conditions of the model. These actions will result in a current uncalibrated model.

3. Calibration

Without calibration, H/H models of this size produce wildly varying and unverifiable results. DEI has experienced this when asked to use models previously developed by others. These models may look impressive, but without calibration, they are effectively useless. Because Jefferson Parish maintains a significant SCADA system, data will be available for rain events, lake levels, and canal levels. DEI will run models repeatedly using the SCADA to improve output fit. By adjusting less certain factors (like channel roughness for instance), a best fit will be achieved resulting in actual rain event data in the model producing water surface elevations that match the real-world data.

4. Existing Conditions

With a calibrated existing conditions model, DEI will evaluate where the most critical priorities exist for the Parish. DEI will verify these results by meeting with Jefferson Parish Drainage Officials.

5. Improved Conditions

DEI will model improvements to the system. We will develop a preliminary list and then meet with DPW and Drainage to make certain to include their ideas. These might include: larger gravity lines, additional storage areas (like ponds), concrete lining existing earthen channels, increased pump capacity, larger box culverts, etc. These will be modeled as a system and as individual improvements. Each improvement will include a preliminary cost estimate and tabulated with its appropriate details.

6. Deliverables

The results of the improved conditions model will allow prioritization of projects per basin as a factor of cost per resident, cost per square area, and cost per inch flood reduction per square area. These prioritized projects will be provided to the Parish for usage in their capital planning needs.

TEC Professional Services Questionnaire

A. Project Name and Advertisement Resolution Number:

Drainage Master Plan for the East Bank of Jefferson Parish
Resolution No. 138896

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

Design Engineering, Inc. (License No. EF.0001135)
3330 W. Esplanade Avenue, Suite 205
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:

Jim Martin, Ph.D., P.E., President
(504) 836-2155
jmartin@dei-engr.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.

Jim Martin, Ph.D., P.E., President
(504) 836-2155
jmartin@dei-engr.com

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

2 Administrative	___ Estimators	___ Specification Writers
___ Architects (Licensed)	___ Geologists	3 Structural Engineers
___ Chemical Engineers	___ Geotechnical Engineers	___ Graduate Engineers
4 Civil Engineers	___ Interior Designers	2 Project Managers
10 Construction Inspectors	___ Landscape Architects	2 Clerical
___ Ecologists	___ Land Surveyor	___ Grant/Funding Specialist
___ Electrical Engineers	___ Mechanical Engineers	___ Sanitary Engineers
4 Engineer Interns	___ Environmental Engineers	
___ Professional Land Surveyors		27 **TOTAL**

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

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

TEC Professional Services Questionnaire

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

1. N/A

2. N/A

H. Has this JOINT-VENTURE previously worked together? Please check: N/A
YES _____ NO _____

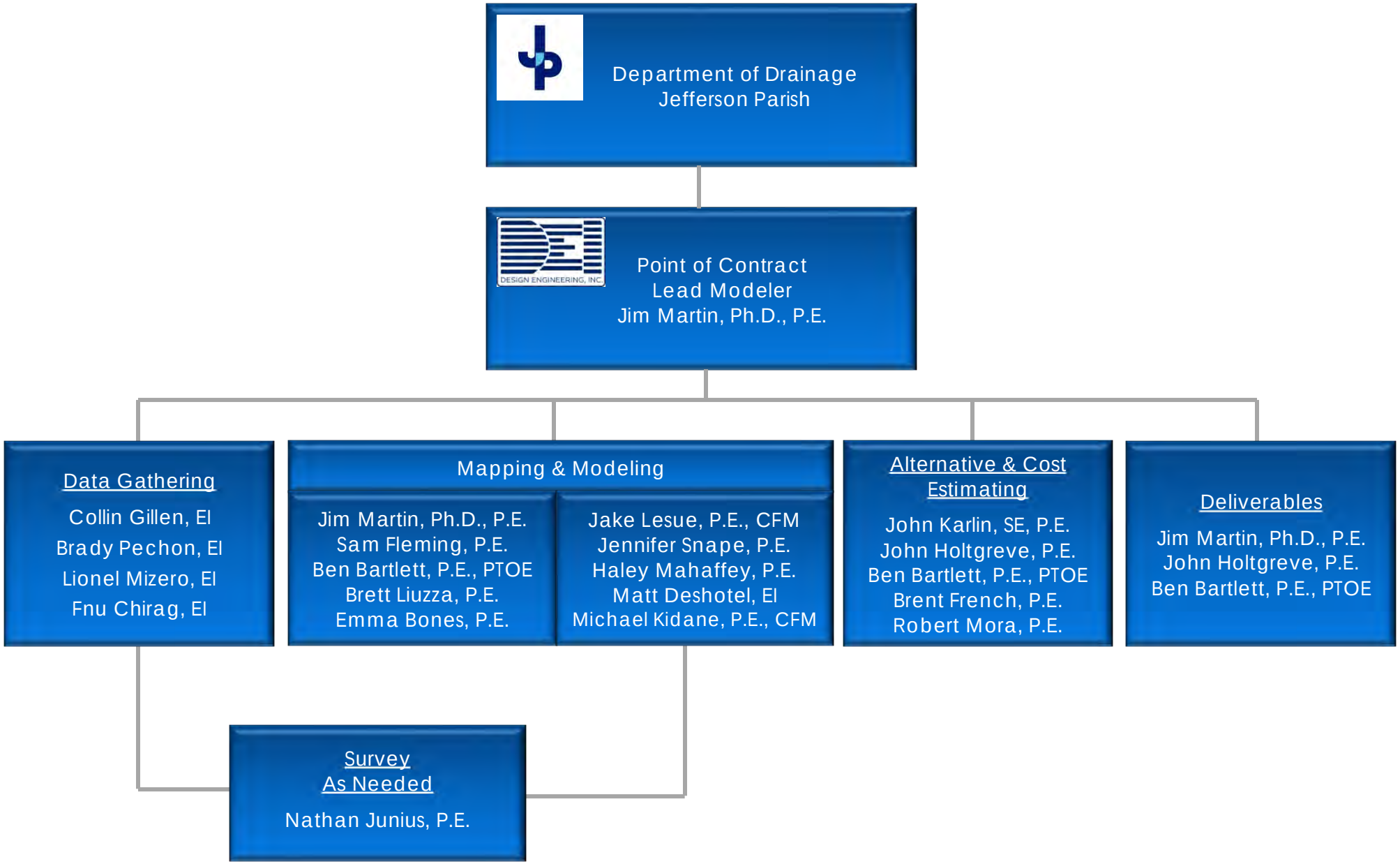
I. List all subcontractors anticipated for this Project. Please note that all subcontractors must submit a fully completed copy of this questionnaire, applicable licenses, and any other information required by the advertisement. See Jefferson Parish Code of Ordinances, Sec. 2-928(a)(3). Please attach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

Name & Address:	Specialty:	Worked with Firm Before (Yes or No):
1. Dewberry Engineers Inc. (Dewberry) 9026 Jefferson Highway, Suite 302 Baton Rouge, LA 70809	Mapping/Modeling/GIS	Yes
2. Linfield Hunter and Junius, Inc. (LHJ) 3608 18th Street, Suite 200 Metairie, LA 70002	Land Survey	Yes
3. Batture, LLC 5110 Freret Street New Orleans, LA 70115	Modeling/GIS	Yes

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

1 additional person not listed in Section E (drafter) will also work on the project.

Drainage Master Plan for the East Bank of Jefferson Parish



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:

Jim Martin, Ph.D., P.E.
President

Project Assignment:

H/H Team Leader, Parish Point of Contact

Name of Firm with which associated:

Design Engineering, Inc.

Years' experience with this Firm:

8

Education: Degree(s)/Year/Specialization:

Old Dominion University – Coastal Engineering Certificate, 2010
Tulane University – Doctor of Philosophy, 2003 Emphasis Hydraulics
Tulane University – Masters of Science in Environmental Engineering, 2000
University of Alabama – Bachelor of Science, Civil and Environmental Engineering, 1998

Active registration: Year first registered/discipline:

2004, Civil Engineering, Louisiana License #31281

Other experience and qualifications relevant to the proposed Project:

PALMER VS. SUNCOAST HYDRAULIC MODELING: A lawsuit was brought against the facility and its engineering firm claiming (among many other things) that the construction of the facility increased peak storm water runoff entering Alligator Branch. The claim further alleged that the increased peak runoff has caused increased flooding in the Ravenwood Subdivision. The results of the modeling demonstrated that the engineering firm's designed drainage and detention system were adequately sized to reduce post-development peak runoff to a level that is less than the pre-development peak runoff for a 10-year design storm.

AUSTIN PARK II HYDRAULIC MODELING: DEI developed a storm water model employing the SCS Runoff Curve Number Method (also referred to as the USDA NRCS TR-55 method). This is the most rigorous and appropriate method for analyzing small watersheds with time and storage as variables. The Austin Park II storm water collection and detention system model was developed for the field conditions and regulations at the time of the original design (as best they could be determined from available information). Special attention was paid to the offsite area to appropriately include it in the analysis. The system was divided into twenty-seven (27) basins to include a total drainage area of approximately 73.81 acres. DEI performed an analysis of HMR's professional services for the storm water collection and detention system of Austin Park II based upon the information available relative to the time of design (beginning in 2005).

TEC Professional Services Questionnaire

HILDA MAESTRI HYDRAULIC MODELING: The Maestri Property is located in Old Mandeville and is roughly 15 acres with a perimeter of 3,400 feet and a grassed channel traverses it. The property is near the downstream portion of the drainage basin with 273 acres of the basin draining through the property via its grassed earthen channel. To evaluate the claims, one must calculate the peak runoff for the current condition and compare that peak to the peak for an earlier time. DEI first employed the National Resource Conservation Service (NRCS) method to analyze the peak runoff in the basin (for the 10-year 24-hour design storm). The NRCS Technical Release 55 outlines the methodology in detail.

CITY OF MERIDIAN HYDRAULIC INVESTIGATION: DEI was retained to evaluate multiple conflicting expert reports and to identify the most likely cause of the structure's failure and to assist in the assignment of fault. DEI was able to show that the initial design (20 years prior) did not account for an increased sediment load and the corrosive condition of the surrounding soils. As a result, the pipe had corroded to the point that failure was inevitable and the construction that occurred shortly before the failure was immaterial.

DUNCAN CANAL BOX CULVERT INSTALLATION: Principal responsible for the hydraulic calculations and modeling that has been reviewed and accepted by the Parish, the City of Kenner, and the DOTD for the installation of a massive 2 cell box culvert that intersects with a separate large 2 cell box. Also, is responsible for all structural engineering on the project as well for these extremely large concrete structures (in excess of 13 feet tall and 80 feet wide).

WEST ESPLANADE CANAL CROSSING: Canal was hydraulically modeled for the installation of two 96-inch Concrete Arch Pipes. DEI designed the drainage and project surface work design for the improvements to West Esplanade Boulevard which include installing a 573-foot of 96-inch culvert, over 600 feet of roadway, additional sidewalk, and a new signalized interchange. Mr. Liuzza was part of the team that provided hydraulic engineering, conceptual, preliminary, and final plans for the improvements to West Esplanade Boulevard.

AIRLINE DRIVE DRAINAGE CROSSING ST. PETER'S DITCH: Principal for the preparation of plans and technical specifications for contract bid and construction process. This project consisted of designing 365 feet of major drainage improvements adjacent to and across Airline Drive. Included in the work was the design of large drainage junction boxes, micro-tunneling or hand tunneling large diameter drain line across Airline Drive, reinforced concrete box culverts and transition structures. DEI provided hydraulic analysis of the drainage system across Airline Drive.

LAKE CHARLES H & H URBAN DRAINAGE STUDY, LAKE CHARLES, LA: Project Manager creating multiple HEC-HMS and HEC-RAS models for several urban streams and watersheds. HEC-RAS models were unsteady. All data was assembled via HEC GEO-RAS to assure a seamless integration with flood mapping tools on both the input and output sides of the models.

FRISCO AVENUE DRAINAGE IMPROVEMENTS, JEFFERSON PARISH: DEI was responsible for the modeling and design improvements along Frisco Avenue in Old Metairie. This project includes upgrading approximately 1200' of drain lines ranging from 15" diameter to 42" diameter pipes at Frisco Avenue, relocating existing utilities such as waterlines and fiber optic lines along 1000' parallel to an operating railroad. The project also includes the closure of an existing 300' long ditch. Responsibilities include project quantity estimating, preparation of plans for bidding, preparation of specifications for bidding and construction administration. This project also includes coordination with the Norfolk Southern Railroad for permitting, design and throughout the proposed construction.

JEFFERSON PARISH UTILITY RELOCATION AT CAUSEWAY SOUTH SHORE: Project Manager for designing relocating for all Parish utilities between the South Shore and 6th Street. This included drainage lines in excess of 48", deep gravity sewer lines, several HDD water lines, as well as coordination with the privately owned utilities in the area (Entergy, AT&T, Cox, TW Telecom, etc.) Dr. Martin was also part of the team that designed and coordinated the construction of the T-wall and associated bridges.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

John Holtgreve, P.E.
Executive Vice President

Project Assignment:

Quality Control Manager and Cost Estimator

Name of Firm with which associated:

Design Engineering, Inc.

Years' experience with this Firm:

38

Education: Degree(s)/Year/Specialization:

BS, 1970, Civil Engineering, Tulane University
MCE, 1975, Civil Engineering, Tulane University

Active registration: Year first registered/discipline:

1976, Civil Engineering, Louisiana License #16383

Other experience and qualifications relevant to the proposed Project:

DUNCAN CANAL BOX CULVERT INSTALLATION: Project Manager responsible for the hydraulic calculations and modeling that has been reviewed and accepted by the Parish, the City of Kenner, and the DOTD for the installation of a massive 2 cell box culvert that intersects with a separate massive 2 cell box. He was also responsible for all structural engineering on the project as well for these extremely large concrete structures (in excess of 13 feet tall and 80 feet wide).

AIRLINE DRIVE DRAINAGE CROSSING ST. PETER'S DITCH: Project Manager for the preparation of plans and technical specifications for contract bid and construction process. This project consisted of designing 365 feet of major drainage improvements adjacent to and across Airline Drive. Included in the work was the design of large drainage junction boxes, micro-tunneling or hand tunneling large diameter drain lines across Airline Drive, reinforced concrete box culverts and transition structures. DEI provided hydraulic analysis of the drainage system across Airline Drive.

INTERSECTION IMPROVEMENTS OF WILKER NEAL AT AIRLINE HIGHWAY, JEFFERSON PARISH: This project included the design and construction of a 10.42 ft. x 18.67 ft concrete box culvert in Canal No. 6 along Airline Drive. The project also included the removal of the existing bridge and constructing an asphaltic concrete roadway over the box culvert on Wilker-Neal Drive and modify the intersection of Wilker-Neal Drive and Airline Drive, as well as additional turning lanes and median modifications on Airline Drive.

GENERAL DEGAULLE CANAL ROAD CROSSING (WALL BOULEVARD AND SANDRA DRIVE): Project Manager for the design of (10'x14') concrete box culverts, transition flume sections on each end of box and vertical and horizontal alignment. DEI provided all services required for the preparation of preliminary and final design plans. DEI's responsibilities included horizontal and vertical alignment, design of new subsurface drainage to tie existing drainage infrastructure with concrete box culverts and comment review and responses.

SEAWALL AREA EROSION CONTROL PAVING PROJECT: Project Engineer responsible for the design, construction administration and inspection of the Seawall Area Erosion Control Paving Project and Seawall Stabilization. This multifaceted project included installing subsurface drainage for the entire roadway, seawall, and surrounding area, and installing multiple seawall penetrations to accommodate outfall to the lake. The concept has been so successful and economically advantageous that the client is expanding the design to all 5.2 miles of Lakeshore Drive in New Orleans.

NORTHBOUND MANHATTAN BOULEVARD CONTINUOUS RIGHT TURN LANE: Project Manager for the design and construction administration which included construction of an additional asphaltic concrete lane of traffic to Northbound Manhattan Blvd. (Gretna Blvd. to Westbank Expressway (US 90B)) and a right turn only lane on US90B frontage road

eastbound to southbound Manhattan Blvd.; right-of-way requirements; utility and drainage relocations. The project was constructed using the designed plans by DEI and DEI personnel provided construction contract administration and construction engineering and resident inspection services. The project construction continued for 7 days a week for approximately 244 days. DEI also provided services to assist the contractor in working weekends and nights as necessary to accommodate up to six (6) crews working 24 hour schedules.

AUDUBON BOULEVARD, NEW ORLEANS: Project Manager for the design, construction administration and resident inspection for a 2,900 LF of new roadway. Included in the project for Audubon Boulevard, a divided roadway with raised median, is a new concrete roadway with concrete, or granite curb and gutter, 2,900 LF of subsurface drainage varying in size from 12" ø to 60" ø RCPA equivalent, 2900 LF of 8" water main and 3000 LF of 8" sewer line, gas line and electric line relocation, new water meter and new sewer and water house connections.

USACE – WBV – PLANTERS PUMPING STATION: Project Manager for the extension of nine (9) steel drainage discharge pipes, installation of discharge pipe valves and associated electrical work, construction of a 610-foot-long concrete flood protection T-Wall and concrete scour protection for a total cost of 35 million dollars. In addition to providing all design services, DEI also performed the Engineering During Construction (EDC) contract, during which shop drawings, design submittals and Request for Information (RFI's) by the Contractor were processed during the construction of the pumping station in coordination with other design firms. Resident inspection was also conducted during construction and inspection reports were submitted to USACE. This project has been awarded the American Concrete Institute (ACI) - Best Concrete Project award for 2012.

USACE – WBV – OLLIE PUMPING STATION FRONTING PROTECTION: Project Manager responsible for the extension of two (2) 6 feet diameter pipes, two (2) 5 feet diameter pipes and two (2) 4.5 feet diameter pipes beyond the proposed 350 foot-long concrete flood protection T-wall, replacing the existing discharge cones of the pumps with new cones, installation of butterfly valves and associated electrical work, replacement of a concrete bridge, demolition of old pumping station buildings, levee improvement and installing concrete scour protection for a total cost of $13 million. In addition to all design work, DEI performed the EDC contract and was extensively involved in reviewing shop drawings, design submittals and RFI's by the contractor during the construction of the pumping station in coordination with other design firms.

DWYER DRAINAGE PUMPING STATION DISCHARGE TUBES AND CANAL: Project Manager for the planning and design of the discharge pipes and drainage canal between Dwyer drainage pumping station and the IHNC. The design of DEI's work included 3 – 84" ø drain lines, relocation of utilities, Jourdan Road by-pass, blind bridges to maintain use of all railroad tracks during construction, construction of a 25-foot-wide concrete box canal, floodwall relocation and reconstruction of Jourdan Road. Mr. Holtgreve was responsible for estimating cost and schedule, management of multiple stakeholders, project cost and schedule monitoring, documenting and reporting to the client, change order negotiation and preparation, claims management, processing of pay applications, project closeout, dispute resolution and final inspections. Also, Mr. Holtgreve, through Design Engineering, coordinated several meetings with PONO, New Orleans Public Belt Railroad, Sewerage and Water Board of New Orleans, Corps of Engineers, and tenants to determine the best way to maintain services during construction of the project.

USACE WEST BANK AND VICINITY (WBV), BELLE CHASSE NO. 2 PUMPING STATION, PLAQUEMINES PARISH, LOUISIANA: Project Manager responsible for the extension of three (3) 6 feet diameter pipes beyond the proposed 290-foot-long concrete flood protection T-Wall, replacing existing discharge cones of the pumps with new cones, installation of butterfly valves and associated electrical work and installing concrete scour protection for a total cost of 16 million dollars. In addition to all design work, DEI performed the EDC contract and was extensively involved in reviewing shop drawings, design submittals and RFI's by the Contractor during the construction of the pumping station in coordination with other design firms.

OSP-09 – STORM PROOFING OF DRAINAGE PUMP STATIONS (DPS) 11, 14 AND 16, NEW ORLEANS, LA: This project includes storm proofing of Drainage Pump Stations (DPS) 11, 14 and 16. DEI was responsible for the design and plan preparation for the right-of-way drawings, existing and overall site plan, and backflow prevention (sewer and drainage utilities). The project also included structural evaluation of existing buildings, comprising of steel frame and masonry walls for design wind speed of 150 mph, designing new metal roof deck on one of the pump stations (DPS 11) to withstand wind uplift strengthening the existing masonry walls by providing masonry anchorage and enhancement systems and securing roof top equipment such as switch gear, generator room and transformer of the Pumping Stations 14 and 16 for the hurricane wind speed of 156 mph.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Ben Bartlett, P.E., PTOE
Engineer

Project Assignment:

H/H Engineer

Name of Firm with which associated:

Design Engineering, Inc.

Years' experience with this Firm:

7

Education: Degree(s)/Year/Specialization:

Auburn University – Masters of Civil Engineering, 2010
The Citadel – Bachelor of Science, Civil and Environmental Engineering, 2008

Active registration: Year first registered/discipline:

2014, Civil Engineering, Louisiana License No. 38980
2016, Professional Traffics Operations Engineer Certification No. 4020

Other experience and qualifications relevant to the proposed Project:

PALMER VS. SUNCOAST HYDRAULIC MODELING: A lawsuit was brought against the facility and its engineering firm claiming (among many other things) that the construction of the facility increased peak storm water runoff entering Alligator Branch. The claim further alleged that the increased peak runoff has caused increased flooding in the Ravenwood Subdivision. The results of the modeling demonstrated that the engineering firm's designed drainage and detention system were adequately sized to reduce post-development peak runoff to a level that is less than the pre-development peak runoff for a 10-year design storm.

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CITY OF MERIDIAN HYDRAULIC INVESTIGATION: DEI was retained to evaluate multiple conflicting expert reports and to identify the most likely cause of the structure's failure and to assist in the assignment of fault. DEI was able to show that the initial design (20 years prior) did not account for an increased sediment load and the corrosive condition of the surrounding soils. As a result, the pipe had corroded to the point that failure was inevitable and the construction that occurred shortly before the failure was immaterial.

DUNCAN CANAL BOX CULVERT INSTALLATION: Hydraulic Engineer responsible for the hydraulic calculations and

modeling that has been reviewed and accepted by the Parish, the City of Kenner, and the DOTD for the installation of a massive 2 cell box culvert that intersects with a separate massive 2 cell box. Also, is responsible for all structural engineering on the project as well for these extremely large concrete structures (in excess of 13 feet tall and 80 feet wide).

FRISCO AVENUE DRAINAGE IMPROVEMENTS, JEFFERSON PARISH: Mr. Bartlett is the engineer responsible for the design of improvements along Frisco Avenue in Old Metairie. This project includes upgrading approximately 1200' of drain lines ranging from 15" diameter to 42" diameter pipes at Frisco Avenue, relocating existing utilities such as waterlines and fiber optic lines along 1000' parallel to an operating railroad. The project also includes the closure of an existing 300' long ditch. Responsibilities include project quantity estimating, preparation of plans for bidding, preparation of specifications for bidding and construction administration. This project also includes coordination with the Norfolk Southern Railroad for permitting, design and throughout the proposed construction.

WEST ESPLANADE AVENUE CROSSING (BETWEEN WILLIAMS BLVD. AND POWER BLVD.): Hydraulic Engineer responsible for the feasibility, conceptualization, hydraulic engineering, preliminary and final plans, construction administration, and resident inspection services for the improvements to the W. Esplanade Ave. Crossing. This project was hydraulically modeled for the installation of twin 96" ø reinforced concrete arch pipes with headwalls to accommodate crossing of W. Esplanade Ave. Median Canal and the installation of reinforced concrete u-shaped transition structures from 96" ø reinforced concrete arch pipe headwall to earthen canal.

RIVER FOREST PAVING AND DRAINAGE IMPROVEMENTS (WILLOW DRIVE): Civil Engineer for this project, Mr. Bartlett is responsible performing topographic survey services, production of plans, and construction engineering for the roadway and subsurface drainage improvements in the City of Covington. This project includes removing and/or repairing existing drainage structures; installing subsurface drainage, removing and replacing reinforced concrete roadway panels and their underlying structural fills; and other work as required by the plans and specifications. Mr. Bartlett is responsible for the production of preliminary plans, final plans, and project specifications and assisting the owner with the bid phase of the project.

JEFFERSON PARISH UTILITY RELOCATION AT CAUSEWAY SOUTH SHORE: Project Engineer for this project, Mr. Bartlett was part of the design team (contracted by Jefferson Parish) responsible for the relocation of all Parish utilities between the South shore of Lake Pontchartrain and 6th Street in order to facilitate the construction of a major hurricane protection feature. This included **large drainage lines**, deep gravity sewer lines, several HDD water lines, as well as coordination with the privately owned utilities in the area (Entergy, AT&T, Cox, TW Telecom, etc.).

ST. CHARLES PARISH SPILLWAY ROAD BOX CULVERT REPAIR: Project Engineer for the opening of the Bonnet Carre' Spillway, which caused severe damage to Spillway Road that connects the communities of Norco and Montz in St. Charles Parish. Mr. Bartlett was part of the design team that engineered the repairs to the existing roadway and the fortification of multiple culvert crossings. This project included the preparation of plans and technical specifications for contract bid and construction process (including resident inspection).

ST. CHARLES PARISH CULVERT ORDINANCE REVIEW: Project Engineer for this project, Mr. Bartlett provided a report that assessed the Parish's existing drainage system, the ordinances that affected it, and how surrounding areas dealt with drainage issues. The report required the analysis of various flow situations as well as the legal ramifications associated with the modification to drainage. An Attorney General's Opinion as well as the Parish Attorney's Opinion were both reviewed in the report.

OLD MANDEVILLE SHORELINE PROTECTION STUDY: Project Engineer for this project. In the aftermath of Hurricane Isaac, the City of Mandeville received a grant to assess how best to protect its low-lying areas along the North shore of Lake Pontchartrain. The existing drainage system for the City as well as its interaction with the Lake were analyzed and modeled. The analysis encompassed aspects ranging from protection structures and pumping capabilities to drainage, power, and sewerage utilities. The information gained from the models was utilized to provide the City with a report which provided a comprehensive overview of the existing system as well as proposed modifications to assist in mitigating issues related to flooding along the Old Mandeville lakefront.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Brett Liuzza, P.E. Engineer
Project Assignment:
H/H Engineer
Name of Firm with which associated:
Design Engineering, Inc.
Years' experience with this Firm:
10
Education: Degree(s)/Year/Specialization:
BS, 2008, Civil Engineering, Louisiana State University
Active registration: Year first registered/discipline:
2012/Civil Engineering, License #37753
Other experience and qualifications relevant to the proposed Project:

AIRLINE DRIVE DRAINAGE CROSSING ST. PETER'S DITCH: Project Engineer for the preparation of plans and technical specifications for contract bid and construction process. This project consisted of designing 365 feet of major drainage improvements adjacent to and across Airline Drive. Included in the work was the design of large drainage junction boxes, micro-tunneling or hand tunneling large diameter drain line across Airline Drive, reinforced concrete box culverts and transition structures. DEI also provided hydraulic analysis of the drainage system across Airline Drive.

DUNCAN CANAL BOX CULVERT INSTALLATION: Civil Engineer responsible for the hydraulic calculations and modeling that has been reviewed and accepted by the Parish, the City of Kenner, and the DOTD for the installation of a massive 2 cell box culvert that intersects with a separate massive 2 cell box. Also, is responsible for all structural engineering on the project as well as for these extremely large concrete structures (in excess of 13 feet tall and 80 feet wide).

WEST ESPLANADE CANAL CROSSING: Canal was hydraulically modeled for the installation of two 96-inch Concrete Arch Pipes. DEI designed the drainage and project surface work design for the improvements to West Esplanade Boulevard which include installing a 573-foot of 96-inch culvert, over 600 feet of roadway, additional sidewalk, and a new signalized interchange. Mr. Liuzza was part of the team that provided hydraulic engineering, conceptual, and preliminary and final plans for the improvements to West Esplanade Boulevard.

SEAWALL AREA EROSION CONTROL PAVING PROJECT: Project Engineer for the design, construction administration and inspection of the Seawall Area Erosion Control Paving Project and Seawall Stabilization. This multifaceted project included installing subsurface drainage for the entire roadway, seawall, and surrounding area, and installing multiple seawall penetrations to accommodate outfall to the lake. The concept has been so successful and economically advantageous that the client is expanding the design to all 5.2 miles of Lakeshore Drive in New Orleans.

MACARTHUR DRIVE INTERCHANGE COMPLETION – PHASE 1A (AT-GRADE ROADWAY): Civil Engineer for a massive highway and bridge demolition and reconstruction project in Jefferson Parish. The design work included significant drainage infrastructure improvements such as the relocation of dozens of drainage lines including some up to 72" diameter; new storm drains, new drainage pipes and manholes; and the extension of the existing reinforced concrete box culvert. These are of course only some of the features of a much larger project.

JEFFERSON PARISH SUBMERGED ROADWAYS PROGRAM: Project Engineer for damage evaluation due to Hurricane Katrina and roadway reconstruction of eighty-five (85) concrete streets and eight (8) miles of asphalt roadway repair within

Council District 3. DEI's responsibilities include Site Evaluations, Preliminary Plans, Final Plans, Construction Administration, and Resident Inspection. During site evaluations, DEI noted settlement and surface condition and verified the degree and severity of damage described in FEMA Project Work Sheets. Considerations during the design phase was tree root impacts on the existing roadway, addition and/or repair of sidewalks, driveways and handicap ramps and adjustment of all drainage structures within the roadway limits.

NICHOLSON DRIVE @ BRIGHTSIDE LANE & WEST LEE DRIVE, BATON ROUGE, LA - Engineer Intern for the engineering design services required for developing plans to widen LA Hwy 30 as part of the Green Light Plan Program. Responsibilities included geometric layout of roadway, drainage design, utility relocation, project quantities estimation and preparation of plans.

WEST MCNEESE AND WEAVER RD. IMPROVEMENTS, LAKE CHARLES, LA - Engineer Intern for the engineering design services required for developing plans of roadway improvements. Responsibilities included drainage design, project quantities estimation and preparation of plans.

FRISCO AVENUE DRAINAGE IMPROVEMENTS, JEFFERSON PARISH: DEI was responsible for the modeling and design improvements along Frisco Avenue in Old Metairie. This project includes upgrading approximately 1200' of drain lines ranging from 15" diameter to 42" diameter pipes at Frisco Avenue, relocating existing utilities such as waterlines and fiber optic lines along 1000' parallel to an operating railroad. The project also includes the closure of an existing 300' long ditch. Responsibilities include project quantity estimating, preparation of plans for bidding, preparation of specifications for bidding and construction administration. This project also includes coordination with the Norfolk Southern Railroad for permitting, design and throughout the proposed construction.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Brent French, P.E. Engineer
Project Assignment:
Cost Estimating
Name of Firm with which associated:
Design Engineering, Inc.
Years' experience with this Firm:
9
Education: Degree(s)/Year/Specialization:
BS, 2011, Civil Engineering, University of Mississippi MS, 2013, Engineering, University of Mississippi
Active registration: Year first registered/discipline:
2016, Civil Engineering, Louisiana License No. 41139
Other experience and qualifications relevant to the proposed Project:

DUNCAN CANAL BOX CULVERT INSTALLATION: Structural Engineer involved with the geometric layout and structural design that has been reviewed and accepted by the Parish, the City of Kenner, and DOTD for the installation of a massive 2-cell box culvert that intersects with a separate massive 2-cell box. The design features a 140'-long box culvert in Canal No. 2 with two 14'-wide, 8'-tall cells which ties into a 260'-long box culvert in the Duncan Canal with two 38'-wide, 13'-tall cells.

AIRLINE DRIVE DRAINAGE CROSSING ST. PETER'S DITCH: Engineer Intern responsible for assisting in the preparation of plans and technical specifications for contract bid and construction process. This project consists of designing 365 feet of drainage improvements adjacent to and across Airline Drive. Included in the work is the design of large drainage junction boxes, micro-tunneling or hand tunneling large diameter drain line across Airline Drive, reinforced concrete box culverts and transition structures. DEI provided hydraulic analysis of the drainage system across Airline Drive.

WEST ESPLANADE CANAL CROSSING: Canal was hydraulically modeled for the installation of two 96-inch Concrete Arch Pipes. DEI designed the drainage and project surface work design for the improvements to West Esplanade Boulevard which included installing a 573-foot of 96 inch culvert, over 600 feet of roadway, additional sidewalk, and a new signalized interchange. Mr. Liuzza was part of the team that provided hydraulic engineering, conceptual, and preliminary and final plans for the improvements to West Esplanade Boulevard.

MACARTHUR DRIVE INTERCHANGE COMPLETION – PHASE 1A (AT-GRADE ROADWAY): Structural Engineer for a massive highway and bridge demolition and reconstruction project in Jefferson Parish. The design work included significant drainage infrastructure improvements, such as the relocation of dozens of drainage lines including some up to 72" diameter; new storm drains; new drainage pipes and manholes; and the extension of the existing reinforced concrete box culvert. These are of course only some of the features of a much larger project.

SEAWALL AREA EROSION CONTROL PAVING PROJECT: Structural Engineer responsible for the design, construction administration, and inspection of the Seawall Area Erosion Control Paving Project and Seawall Stabilization. This multifaceted project included installing subsurface drainage for the entire roadway, seawall, and surrounding area, and installing multiple seawall penetrations to accommodate outfall to the lake. The concept has been so successful and economically advantageous that the client is expanding the design to all 5.2 miles of Lakeshore Drive in New Orleans.

ST. ANDREW STREET WHARF EROSION MITIGATION PROJECT, PORT OF NEW ORLEANS: Structural and Civil Engineer. The project encompasses the design, bidding, and construction of a 1600-foot long and 50-foot deep steel sheet pile wall with a reinforced concrete pile cap along the roadway side of the St. Andrew St. Wharf, an abandoned pile-supported concrete wharf on the MS River in the Irish Channel area of New Orleans. The project required the removal and replacement of a portion of a roadway to install the sheet pile wall. Supervised the design team throughout plan specification development and the bidding process.

HURRICANE KATRINA RELATED 404 HAZARD MITIGATION GRANT PROGRAM REPLACEMENT OF SEWAGE PUMPING STATIONS: (Role: Civil Engineer) This project includes the design of an elevated bi-level sewage pumping station, including topographic survey of site, hydraulic analysis and design, geotechnical engineering report, Preliminary Design Report, preparation of detailed drawings, specifications, contract and bid documents and construction cost estimates. Mr. French was responsible for construction engineering services for the replacement of eight sewage pumping/lift stations throughout New Orleans. The projects included the construction of subsurface wet wells and dry pits, above-ground operating floors, sewerage piping, and street replacement. With as many as six projects being constructed simultaneously by multiple contractors, Mr. French managed structural, civil, electrical, mechanical, and architectural shop drawing reviews, RFI responses, conflicts with the contractors, and required plan changes.

31ST AND JASPER SEWER LIFT STATION: (Role: Engineer Intern) This project included the design and construction of a 100% new lift station adjacent to the existing lift station while keeping the existing lift station operational nearly 100% of the time.

VIOLET CANAL SIPHON STRUCTURE REPLACEMENT, VIOLET, LOUISIANA: This project included the inspection and development of plans and specifications for the Violet Canal Siphon Structure, a structure intended to prevent debris from entering the two (2) 50-inch diameter siphon pipes which divert water from the Mississippi River to the Violet Canal. The timber and chain-link fence structure surrounding the intake portion of the siphon pipes was critically damaged by a marine vessel impact, requiring a design to remove and replace the structure in the MS River.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Max Shukla, P.E.
Senior Engineer

Project Assignment:

Cost Estimating

Name of Firm with which associated:

Design Engineering, Inc.

Years' experience with this Firm:

36

Education: Degree(s)/Year/Specialization:

BS, 1960, Civil Engineering, M.S. University, Baroda, India
MS, 1969, Civil Engineering, M.S. University, Baroda, India

Active registration: Year first registered/discipline:

1978, Civil Engineering, Louisiana License No. 17008

Other experience and qualifications relevant to the proposed Project:

DUNCAN CANAL IMPROVEMENTS: This project includes conceptual, preliminary, and final plans to replace the Bridge at Duncan Canal over West Esplanade. In addition, the project required permitting and hydraulic engineering. This project is one of the largest canals in Jefferson Parish and the existing bridges are in poor condition and aesthetically unappealing. In this project, DEI designed two massive concrete box culverts (38 x 13 each) as well as two smaller box culverts to receive Canal #2. Following the bridge replacement, newly design asphalt roadway will be placed on the approaches as well as over the boxes.

AIRLINE DRIVE DRAINAGE CROSSING ST. PETER'S DITCH: Structural Engineer responsible for the preparation of plans and technical specifications for contract bid and construction process. This project consisted of designing 365 feet of major drainage improvements adjacent to and across Airline Drive. Included in the work was the design of large drainage junction boxes, micro-tunneling or hand tunneling large diameter drain line across Airline Drive, reinforced concrete box culverts, and transition structures. DEI provided hydraulic analysis of the drainage system across Airline Drive.

INTERSECTION IMPROVEMENTS OF WILKER NEAL AT AIRLINE HIGHWAY, JEFFERSON PARISH: Structural Engineer for the design and construction of a 10.42 ft. x 18.67 ft concrete box culvert in Canal No. 6 along Airline Drive. The project also included the removal of the existing bridge and constructing an asphaltic concrete roadway over the box culvert on Wilker-Neal Drive and modify the intersection of Wilker-Neal Drive and Airline Drive, as well as additional turning lanes and median modifications on Airline Drive.

GENERAL DEGAULLE CANAL ROAD CROSSING (WALL BOULEVARD AND SANDRA DRIVE): Structural Engineer responsible for the design of a (10' x 14') concrete box culverts, transition flume sections on each end of box and vertical and horizontal alignment. DEI is providing all services required for the preparation of preliminary and final design plans. DEI's responsibilities included horizontal and vertical alignment, design of new subsurface drainage to tie existing drainage infrastructure with concrete box culverts and comment review and responses.

USACE – WBV – PLANTERS PUMPING STATION: Structural engineer for the extension of nine (9) steel drainage discharge pipes, installation of discharge pipe valves and associated electrical work, construction of a 610-foot-long

concrete flood protection T-Wall and concrete scour protection for a total cost of 35 million dollars. In addition to providing all design services, DEI also performed the Engineering During Construction (EDC) contract, during which shop drawings, design submittals and Request for Information (RFI's) by the Contractor were processed during the construction of the pumping station in coordination with other design firms. Resident inspection was also conducted during construction and inspection reports were submitted to USACE. This project has been awarded the American Concrete Institute (ACI) - Best Concrete Project award for 2012.

DWYER DRAINAGE PUMPING STATION DISCHARGE TUBES AND CANAL: Structural Engineer for the planning and design of the discharge pipes and drainage canal between Dwyer drainage pumping station and the IHNC. The design of DEI's work included 3 84" ø drain lines, relocation of utilities, Jourdan Road bypass, blind bridges to maintain use of all railroad tracks during construction, construction of a 25-foot-wide concrete box canal, floodwall relocation and reconstruction of Jourdan Road.

USACE WEST BANK AND VICINITY (WBV), BELLE CHASSE NO. 2 PUMPING STATION, PLAQUEMINES PARISH, LOUISIANA: Project Manager responsible for the extension of three (3) 6 feet diameter pipes beyond the proposed 290-foot-long concrete flood protection T-Wall, replacing existing discharge cones of the pumps with new cones, installation of butterfly valves and associated electrical work and installing concrete scour protection for a total cost of 16 million dollars. In addition to all design work, DEI performed the EDC contract and was extensively involved in reviewing shop drawings, design submittals and RFI's by the Contractor during the construction of the pumping station in coordination with other design firms.

OSP-09 – STORM PROOFING OF DRAINAGE PUMP STATIONS (DPS) 11, 14 AND 16, NEW ORLEANS, LA: This project includes storm proofing of Drainage Pump Stations (DPS) 11, 14 and 16. DEI was responsible for the design and plan preparation for the right-of-way drawings, existing and overall site plan, and backflow prevention (sewer and drainage utilities). The project also included structural evaluation of existing buildings, comprising of steel frame and masonry walls for design wind speed of 150 mph, designing new metal roof deck on one of the pump stations (DPS 11) to withstand wind uplift strengthening the existing masonry walls by providing masonry anchorage and enhancement systems and securing roof top equipment such as switch gear, generator room and transformer of the Pumping Stations 14 and 16 for the hurricane wind speed of 156 mph.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

John Karlin, SE, P.E.
Engineer

Project Assignment:

Cost Estimating

Name of Firm with which associated:

Design Engineering, Inc.

Years' experience with this Firm:

4

Education: Degree(s)/Year/Specialization:

MS, 2017, Civil (Structural) Engineering, University of Illinois at Urbana-Champaign
BS, 2016, Civil Engineering, Worcester Polytechnic Institute

Active registration: Year first registered/discipline:

2020, Civil Engineering, Louisiana License No. 44795
2020, Illinois SE, License No. 081-008511

Other experience and qualifications relevant to the proposed Project:

CITY OF KENNER DUNCAN CANAL BOX CULVERT: (Role: Structural Engineer) Mr. Karlin assisted in the replacement of aging bridges spanning the Duncan Canal with a new, buried box culvert system that improves aesthetics while maintaining the conveyance of traffic across the canal. Responsibilities include: design of the top slab to resist vehicular loadings; design of the base slab to adequately distribute loads to the soil; design of the walls and wingwalls to resist lateral soil pressures and soil and vehicular surcharge loadings; and design of columns and beams to create a junction between Duncan Canal and Canal No. 2 and facilitate the flow of water between the two box culverts.

WEST ESPLANADE U-TURN: (Role: Engineer Intern) Canal was hydraulically modeled for the installation of two 96-inch Concrete Arch Pipes. DEI designed the drainage and project surface work design for the improvements to West Esplanade Boulevard which include installing a 573-foot of 96-inch culvert, over 600 feet of roadway, additional sidewalk, and a new signalized interchange. Mr. Karlin assisted in the design of the apron slabs, headwalls, and wingwalls for this pipe culvert structure to meet AASHTO and LADOTD standards. Responsibilities include the design of apron slabs to facilitate water flow and resist uplift forces; design of headwalls to resist lateral soil pressures and vehicular surcharge loadings; and design of wingwalls to stabilize the canal slopes adjacent to the apron slabs

SEWERAGE AND WATER BOARD OF NEW ORLEANS, HAZARD MITIGATION GRANT PROGRAM, REPLACEMENT OF SEWAGE PUMPING STATION NO. 6: (Role: Engineer Intern) Mr. Karlin assisted with construction management services of S&WB of N.O. HMGP, Replacement of Sewage Pumping Station No. 6. Responsibilities included the review of shop drawings; RFI responses; field inspections of reinforcing steel and concrete; and design modifications, such as footing relocation and redesign, when required to address conflicts in the field.

SEAWALL AREA EROSION CONTROL PAVING PROJECT – REACH 3A: (Role: Engineer Intern) Mr. Karlin assisted with the erosion control project of the Lake Pontchartrain seawall. Responsibilities include: design of slab on grade to support pedestrian traffic and prevent cracking and damage during extreme events; layout of slab joints to allow expansion and contraction of the slab and seawall without cracking of the slab; layout of timber piles to ensure proper load transfer from

the slab to the soil and minimize settling and damage due to soil erosion; and design of grade beams and retaining walls near existing trees to satisfy the project goals without removal of trees.

SEAWALL AREA EROSION CONTROL PAVING PROJECT – REACHES 1C, 2A, AND 5B: (Role: Engineer Intern) Mr. Karlin assisted with construction management services of the erosion control project of the Lake Pontchartrain seawall. Responsibilities included the review of shop drawings; RFI responses; field inspections of reinforcing steel and concrete; and design modifications, such as pile relocation, when required to address conflicts in the field.

ST. ANDREW STREET WHARF EROSION MITIGATION: (Role: Structural Engineer) Design Engineering, Inc. (DEI) is performing engineering services for the Port of New Orleans for their St. Andrew Street Wharf Erosion Mitigation project. The project works generally encompass the construction of an approximately 1600 feet long and 50 feet deep steel sheet pile wall with a reinforced concrete pile cap along the roadway side of the St. Andrew Street Wharf, and associated roadway construction.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Collin Gillen, EI
Engineering Intern

Project Assignment:

Data Gathering

Name of Firm with which associated:

Design Engineering, Inc.

Years' experience with this Firm:

2

Education: Degree(s)/Year/Specialization:

BS, 2020, Civil Engineering, Louisiana State University

Active registration: Year first registered/discipline:

2020, Civil Engineering Intern, Louisiana License No. 34496

Other experience and qualifications relevant to the proposed Project:

CAUSEWAY SAFETY RAILS, GNOEC: (Role: Engineer Intern) Mr. Gillen performed inspection oversight, quality assurance, and construction administration for the installation of safety rails along the Southbound bridge. Responsibilities include evaluation of construction operations/work for conformance with the Plans and Specifications; coordination of daily field notes and acceptance of work with up to ten inspectors; assistance in the response to RFIs, submittals, and monthly project progress summaries.

CAUSEWAY BLVD. & AIRLINE DR. INTERCHANGE BRIDGE REHABILITATION, JEFFERSON PARISH: (Role: Engineer Intern) Mr. Gillen is currently assisting the project engineer with the oversight of construction/rehabilitation of this 1950s era bridge in accordance with AASHTO and LADOTD standards. Responsibilities include investigation of existing steel reinforcement information obtained from bridge bent scanning; evaluation of anchor bolt installation locations to preserve existing steel reinforcement; modification of plans for flange design and anchor bolt installation.

STATE STREET DRIVE RECONSTRUCTION, ORLEANS PARISH: As an Engineering Intern, Mr. Gillen is currently assisting the project engineer in the design of the reconstruction of State Street Drive in New Orleans. Responsibilities include reviewing plans for water and sewer line connections. This project includes full reconstruction and will include full block roadway pavement replacement including resetting distinctive aggregate curbs, ADA accessible ramps, drainage system replacement, sidewalk, driveway, sewer line and water main utility replacement. This project also includes coordination with Batture Engineering for assisting in design.

MAGAZINE STREET RECONSTRUCTION, ORLEANS PARISH: As an Engineering Intern, Mr. Gillen is currently assisting the project engineer in the construction administration of the reconstruction of Magazine Street, between the intersections of Leake Avenue and East Drive, located in the Audubon Neighborhood area of New Orleans. Responsibilities include construction management, document control, and meeting coordination. This project also includes full reconstruction and will include full block roadway pavement replacement including resetting distinctive aggregate curbs, ADA accessible ramps, drainage system replacement, sidewalk, driveway, sewer line and water main utility replacement. This project is also in coordination with Hard Rock Construction throughout the construction of the project.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Brady Pechon, EI
Engineering Intern

Project Assignment:

Data Gathering

Name of Firm with which associated:

Design Engineering, Inc.

Years' experience with this Firm:

2

Education: Degree(s)/Year/Specialization:

BS, 2016, Civil Engineering, Louisiana State University

Active registration: Year first registered/discipline:

2020, Civil Engineering, Louisiana License No. 34517

Other experience and qualifications relevant to the proposed Project:

AUDUBON BLVD RECONSTRUCTION, ORLEANS PARISH: (Role: Engineer Intern) Mr. Pechon is currently assisting the project engineer in the design of the reconstruction of Audubon Blvd in New Orleans. Responsibilities include cost estimating, design, and drafting. This project includes full reconstruction and will include full block roadway pavement replacement including resetting distinctive aggregate curbs, ADA accessible ramps, drainage system replacement, sidewalk, driveway, sewer line, and water main utility replacement. This project also includes coordination with Batture Engineering for assisting in design.

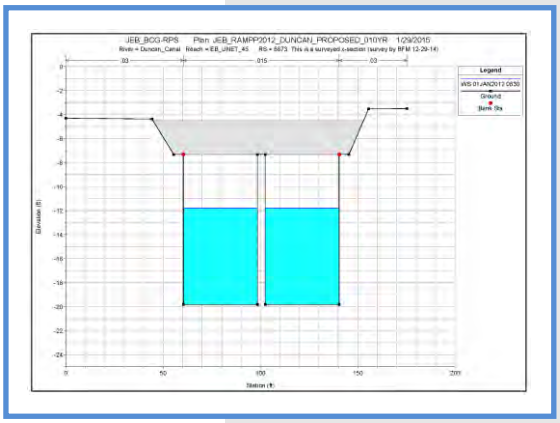
STATE STREET DRIVE RECONSTRUCTION, ORLEANS PARISH: (Role: Engineer Intern) Mr. Pechon is currently assisting the project engineer in the design of the reconstruction of State Street Drive in New Orleans. Responsibilities include cost estimating, design, and drafting. This project includes full reconstruction and will include full block roadway pavement replacement including resetting distinctive aggregate curbs, ADA accessible ramps, drainage system replacement, sidewalk, driveway, sewer line, and water main utility replacement. This project also includes coordination with Batture Engineering for assisting in design.

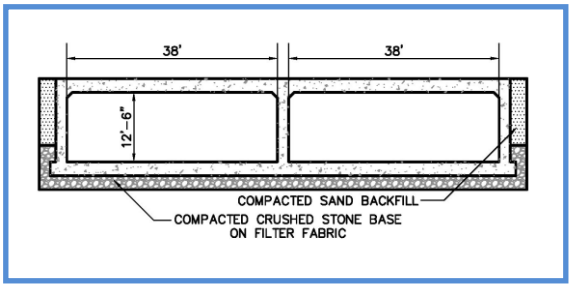
MILNEBURG GROUP B RECONSTRUCTION, ORLEANS PARISH: (Role: Engineer Intern) Mr. Pechon is currently assisting the project engineer in the construction administration of the reconstruction of the Milneburg Neighborhood in New Orleans. Responsibilities include construction management, document control, and meeting coordination. The roadway and utility improvements are located on various streets in the Milneburg Neighborhood Development. This project also includes full reconstruction and will include full block roadway pavement replacement including resetting distinctive aggregate curbs, ADA accessible ramps, drainage system replacement, sidewalk, driveway, sewer line, and water main utility replacement. This project is also in coordination with Hard Rock Construction throughout the construction of the project.

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.

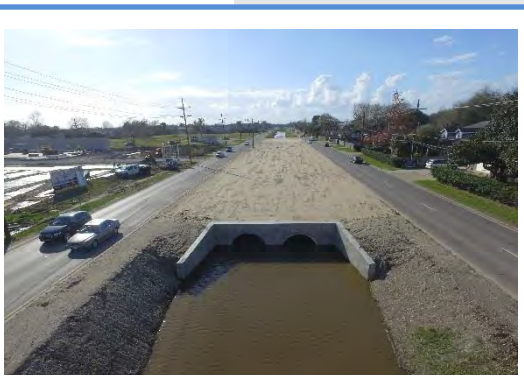
PROJECT NO. 1

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:
Duncan Canal Bridge Replacement Kenner, Louisiana Jose Gonzalez City of Kenner 1610 Reverend Richard Wilson Dr. Kenner, LA 70062 (504) 468-7515	This project is located at the confluence of West Esplanade Canal and Duncan Canal in the City of Kenner (Jefferson Parish). The objective of the project is to reduce restriction in both Canals by removing the aging wooden bridge structures and replacing it with two modern large double barrel concrete box culverts (2 boxes in each canal). A secondary objective is to reduce the "perch" of the bridges so that traffic sight lines are improved. This will result in increased driving safety, which is an important feature in this highly trafficked corridor which is adjacent to multiple retail outlets, a shopping mall, and several residential areas. Another secondary objective is to improve the location aesthetically by removing the unsightly structures and replacing them with large box culverts that will enclose large portions of the canals, add green space, and allow for decorative landscaping as well as potential recreation. DEI used the Jefferson Parish East Bank full model and edited it to perform the hydraulic analysis for this primary drainage canal for the City of Kenner as well as the structural design for the boxes. The Duncan Boxes alone are over 13 feet tall and 80 feet wide inside the openings (the actual structure is of course much larger).





Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2022	$12,503,000.00	$9,230,000.00

PROJECT NO. 2	
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**
West Esplanade Avenue Crossing (Between Williams Blvd. and Power Blvd.) Mitch Theriot Jefferson Parish Engineering 1221 Elmwood Park Blvd. Jefferson, Louisiana (504) 736-6512	DEI was contracted by Jefferson Parish to provide feasibility/ conceptualization, hydraulic modeling, preliminary and final plans, construction administration, and resident inspection services for the improvements to the West Esplanade Avenue Crossing (Between Williams Blvd. and Power Blvd.) This project included the installation of **500 feet of twin 96"** diameter reinforced concrete arch pipes with headwalls to accommodate crossing of West Esplanade Avenue Median Canal and the installation of reinforced concrete u-shaped transitions structures from 96" diameter reinforced concrete arch pipe headwall to earthen canal. The project also required large confluence boxes as well as on site adjustment to drainage laterals in order to avoid penetration of the recycled pipe that was used in the project in order to save costs and use a resiliency design technique. The West Esplanade Avenue Median Canal Crossing also consisted of the following: • 50 ft. taper to 100 ft. storage lane to east-to-west U-turn; • 4-lane crossing with traffic signal system; • 50 ft. taper to 200 ft. storage lane to west-to-east U-turn
 	

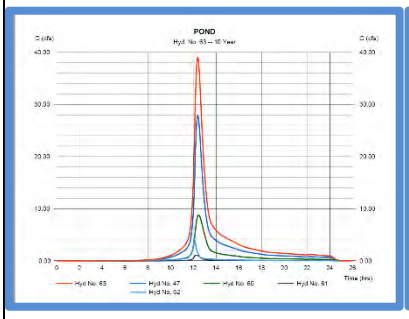
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2017	$3,000,000.00	$3,000,000.00

PROJECT NO. 3	
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**
Frisco Avenue Drainage Improvements Jefferson Parish, Louisiana Mitch Theriot Jefferson Parish Drainage Department 1221 Elmwood Park Blvd. Jefferson, LA (504) 736-6505	The project area is in Old Metairie, Louisiana. The drainage system in this study is part of the Old Metairie basin which discharges via Lake Avenue into the Canal Street Canal. Design Engineering, Inc. (DEI) was contracted by Jefferson Parish to study, model, and improve the hydraulic characteristics of the Frisco Drainage Sub-Basin in Old Metairie which includes the corner of Metairie Road and Frisco Avenue, Frisco Avenue, and Lake Avenue. Currently, the corner of Metairie Road and Frisco Avenue experiences issues with flooding even during minor rain events. DEI modeled the drainage system and was able to determine areas of concern in the present system. Improvements to the system were also modeled to provide the Parish with recommendations to address claims of flooding the shops along Metairie Road during severe storm events. DEI's analysis of the Frisco Drainage Sub-Basin and its respective subsurface drainage system indicates conveyance issues negatively affect the corner of Metairie Road and Frisco Avenue during the design storm event. The results indicate that drainage lines are generally undersized and require substantial upsizing to improve hydraulic performance. DEI re-designed the drainage system to improve hydraulic performance and alleviate flooding. The drainage system and parking lot at the corner of Metairie Road and Frisco Avenue were also re-designed to improve stormwater conveyance and collection. The design team overcame challenges associated with conflicting utilities (e.g., sewer, water, gas, electrical & fiber optic lines) while limiting head loss in the drainage system. Additionally, due to the proximity of Norfolk Southern's rail line, the design team had to work with the railroad to develop Plans that would meet strict railroad requirements (i.e., minimal railroad disruption, maintain slope stability, etc.)
 	

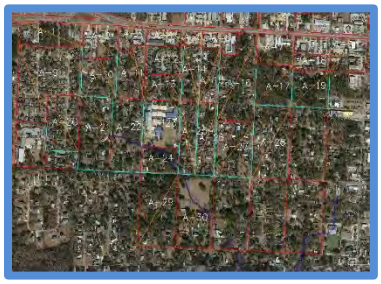
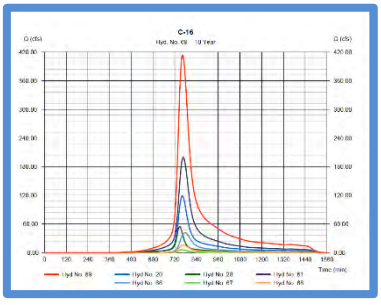
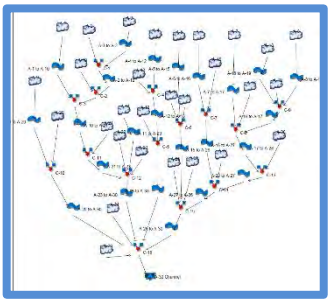
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2022	$1,250,000.00	$1,250,000.00

PROJECT NO. 4

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:
Palmer vs Suncoast Expert Hydraulics Analysis Carr Allison Law Firm Vincent Noletto 6251 Monroe Street, Suite 200 Daphne, AL 36526 (251) 283-2876	The Picayune Industrial Park is a 126-acre site located in Pearl River County south of Picayune Mississippi. A portion of the industrial park is occupied by a sand drying facility bounded to the north by woodlands, to the east by a pre-existing railroad, to the south by open grassed fields, and to the west by the Alligator Branch stream and woodlands. A lawsuit was brought against the facility and its engineering firm claiming (among many other things) that the construction of the facility increased peak storm water runoff entering Alligator Branch. The claim further alleged that the increased peak runoff has caused increased flooding in the Ravenwood Subdivision. DEI employed the Rational Method to determine the peak runoff from the site for the pre-development condition (for a 10-year design storm). The National Resource Conservation Service (NRCS) method was used to model the peak runoff from the site for the post-development condition (for the 10-year 24-hour design storm). The Rational Method calculations were performed in accordance with typical standard of care as well as the Mississippi Department of Transportation Roadway Design Manual (2001 Edition). The National Resource Conservation Service (NRCS) method was used in accordance with typical standard of care and as described in NRCS Technical Release 55. The NRCS modeling were performed using Hydraflow Hydrographs Extension for AutoCAD Civil 3D 2014 Version 10.3. The site was modeled in the predevelopment condition employing a Rational Runoff Coefficient of 0.3. For the NRCS method, the site was broken into 23 respective drainage basins and modeled using calculated composite curve numbers, such that the ground was modeled using a CN that is representative of nearly flat sand with frequent depressions as were observed in field visits (CN of 63) and the impervious areas for full development of the site (CN 98 for areas such as roofs, train cars, etc.). The result was that the curve numbers for the individual basins vary between 63 and 77 for all basins. This was a more rigorous and accurate analysis than simply assuming a single curve number that represents the entire site or even a single curve number for each basin. **The results of the modeling demonstrated that the engineering firm's** designed drainage and detention system were adequately sized to reduce post-development peak runoff to a level that is less than the pre-development peak runoff for a 10-year design storm.



Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2019	$75,000.00	$75,000.00

PROJECT NO. 5	
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**
Hilda Maestri Expert Hydraulics Analysis Geoffrey Ormsby Smith & Fawer, LLC. 201 St. Charles Ave. #3702 New Orleans, LA 70170 504-525-2200	The Maestri Property is located in Old Mandeville and is roughly 15 acres with a perimeter of 3,400 feet; a grassed channel traverses it. The property is near the downstream portion of the drainage basin with 273 acres of the basin draining through the property via its grassed earthen channel. The drainage basin is developed suburban residential with some small exceptions and no stormwater storage facilities are present. A complaint and subsequent suit indicate that the property owners have experienced increased occurrence of flooding, increased area of flooding, and increased duration of flooding. To evaluate the claims, one must model the peak runoff for the current condition and compare that peak to the peak for an earlier time. Because the Maestri property is near the downstream end of this basin, the property would be more heavily impacted than areas near the upstream portion of the basin. Generally, development causes increased runoff unless storage is employed. DEI first employed the National Resource Conservation Service (NRCS) method to model the peak runoff in the basin (for the 10-year 24-hour design storm). TR-55 accounts for the time effects by producing a hydrograph for each sub-basin, as opposed to simply calculating a peak flow value. In this fashion, each hydrograph can be summed as a function of time and thus remove the Rational Method issue of all the peak flows reaching the subject property at one time. The basin was divided into 30 sub-basins and each was modeled using areas, hydraulic lengths, and slopes. A hydrograph was developed for each sub-basin, reflecting runoff as a function of time. From the outfall of each sub-basin, runoffs were then routed along the pathways of the basin to reach the subject property. This analysis was performed for the 1965 condition as well as the 2019 condition for both the 2-year and 10-year recurrence interval event. The results of the NRCS model show an increase of 269% the peak flow and 1.8 times more runoff (additional 1.5 million cubic feet of water). This is the equivalent of 11.2 million gallons or 17 Olympic sized swimming pools moving through the property for the 10-year 24-hour storm event. These data support that for a given condition at the Maestri property, flooding will occur more frequently, at greater area and depth, and for longer durations.
  	 

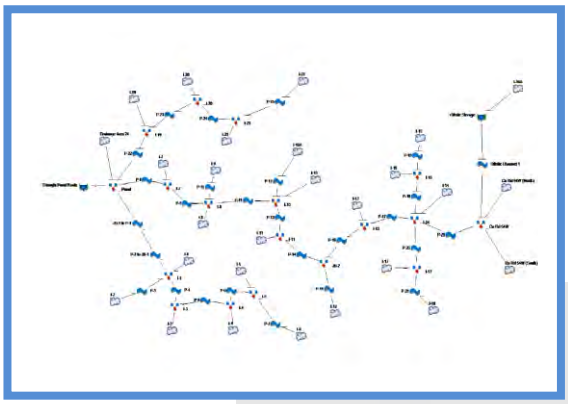
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	**Work for which Firm was Responsible:**
2022	$80,000.00	$80,000.00

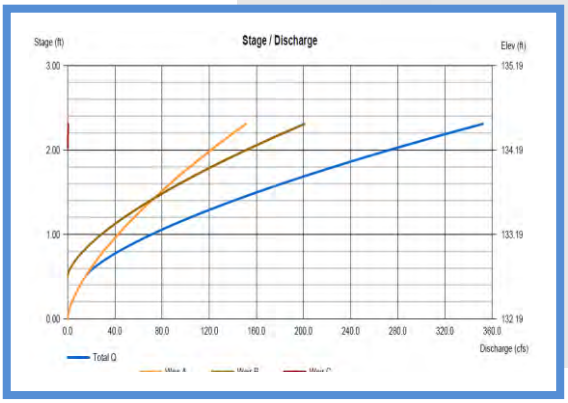
PROJECT NO. 6	
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**
Meridian Mississippi Expert Hydraulics Analysis Carr Allison Law Firm Vincent Noletto 6251 Monroe Street Suite 200 Daphne, AL 36526 (251) 283-2876	In 1999, the biggest pipe ever installed in the State of Mississippi was installed by the City of Meridian and its contractors in a drainage easement on the property of Bill Ethridge Lincoln Mercury on the North Frontage Road on I-20 / I-59 in Meridian Mississippi. The pipe was a Horizontal Ellipse in shape and measured 28 feet across at its widest and 17 feet high at its tallest and was approximately 400 feet long. It started at a concrete box culvert and terminated at an outfall to the Sowashee Creek. The pipe was made of plates fabricated by Contech and was assembled on site. After completion of the pipe's construction, the surface above the pipe was used as a parking lot until 2015. On November 7, 2015, the aforementioned Contech Horizontal Ellipse pipe collapsed. DEI was retained to evaluate multiple conflicting expert reports **and to identify the most likely cause of the structure's failure and** to assist in the assignment of fault. This required the review of multiple model results, construction reports from 1999, evaluation of the engineering performed during the initial design, and evaluation of the engineering performed during the subsequent work that was completed immediately prior to the structures collapse. DEI was also provided with various video angles of the property before, during, and after the collapse. DEI performed site visits across the large basin to identify signs of increased erosion that would add to the sediment load of the drainage flow. DEI also performed structural analysis to determine the likely loading required to cause a collapse in such a pipe when new, and after 20 years of normal wear and tear. DEI was able to show that the initial design (20 years prior) did not account for an increased sediment load and the corrosive condition of the surrounding soils. As a result, the pipe had corroded to the point that failure was inevitable and the construction that occurred shortly before the failure was immaterial.

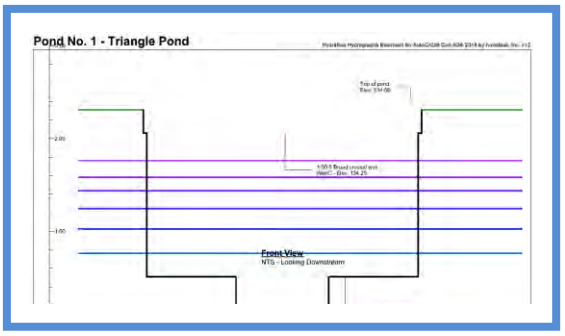
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2020	$100,000.00	$100,000.00

PROJECT NO. 7

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:
Austin Park II Expert Hydraulics Analysis Carr Allison Law Firm Vincent Noletto 6251 Monroe Street, Suite 200 Daphne, AL 36526 (251) 283-2876	Austin Park II is a 38-acre subdivision located in Baldwin County Alabama. The subdivision consists of 72 single family homes and the associated infrastructure which includes a 2-acre detention pond. This pond drains westward via an outfall structure and drainage channel into Picard Branch which generally flows south until it reaches a confluence with Caney Branch which eventually reaches its own confluence with Fish River and ultimately discharges into the Gulf of Mexico (via Weeks Bay and then Mobile Bay). An offsite to the northeast of Austin Park II drains through Austin Park II. This area reaches the Austin Park II subsurface system via three separate drainage conveyance features which are in series. To analyze the storm water collection and detention system in question and address the allegations, DEI developed a storm water model employing the SCS Runoff Curve Number Method (also referred to as the USDA NRCS TR-55 method). This is the most rigorous and appropriate method for analyzing small watersheds with time and storage as variables. The Austin Park II storm water collection and detention system model was developed for the field conditions and regulations at the time of the original design (as best they could be determined from available information). Special attention was paid to the offsite area to appropriately include it in the analysis. The system was divided into twenty-seven (27) basins to include a total drainage area of approximately 73.81 acres. DEI performed an analysis of HMR's professional services for the storm water collection and detention system of Austin Park II based upon the information available relative to the time of design (beginning in 2005). We utilized the same methodology that we would employ in our daily practice as professional engineers designing a hydraulic system. We found that HMR's design exceeded the accepted practice (using the 100-year storm event instead of the 25-year storm event) of that time and despite a calculation error with regard to the discharge structure, the 100-year storm event did not exceed the banks of the pond. Based on the deposition of the plaintiffs, homes have been flooded on one occasion in Austin Park II, and that was the extreme rainfall event that occurred in April of 2014. Blackwell's expert report has determined that the rainfall event in April of 2014 exceeded the 100-year rainfall event. The magnitude of this rainfall event exceeded the Austin Park II drainage system design parameters (and likely those of the surrounding area). Designing residential hydraulic systems for events of this scale is beyond the standard of care for engineers.







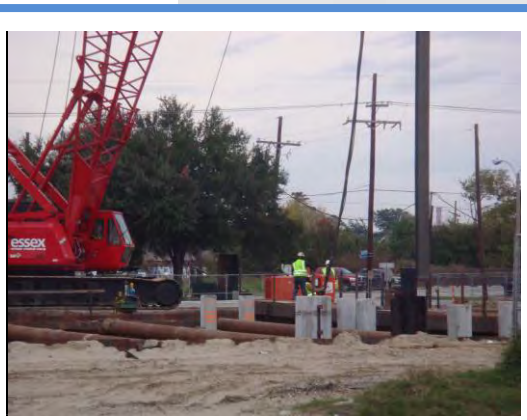
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2019	$75,000.00	$75,000.00

PROJECT NO. 8	
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**
Airline Drive Drainage Crossing (St. Peter's Ditch) Jefferson Parish, LA Mark Drewes Jefferson Parish Engineering 1221 Elmwood Park Blvd. Jefferson, LA (504) 736-6505	Further Construction to Improve Drainage at LA 3152 and LA 3139 This project included drainage improvements to the existing St. Peter's Ditch which extends in the north-south direction approximately 2,000 feet from Cross Canal to Airline Drive and approximately 2,500 feet from Airline Drive to West Metairie Drive. The project was divided into three (3) phases and included deepening and widening the existing ditch and the installation of cast-in-place concrete U-channels, reinforced concrete box culverts and drainage piping. Design Engineering, Inc. (DEI) prepared plans and specifications for preliminary and final design and conducted construction administration and resident inspection services on Phase 3B to supplement drainage across Airline Drive. Phase 3B of this project included approximately 365 feet of drainage improvements near Airline Drive. DEI studied and modeled several alternatives in an effort to avoid the open cut of Airline Drive to remove an existing reinforced concrete box culvert and construct a new box culvert, thus adversely affecting traffic on Airline Drive for an extended period of time. In order to reduce the impact of construction on Airline Drive traffic, the accepted alternative was to retain the existing box culvert and supplement the existing box culvert by installing four (4) 42" **diameter fiberglass reinforced pipes**, approximately 124 feet in length, beneath Airline Drive by using trenchless construction utilizing microtunneling or hand tunneling methods. The project also included the relocation of existing utilities, including a 24" drain line, a 30" drain line, a 20" water line, an 8" water line, a gas line, a telephone line, fiberoptic lines and Entergy lines.
 	

Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	**Work for which Firm was Responsible:**
2014	$3,500,000.00	$3,500,000.00

PROJECT NO. 9		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Algiers Canal Pumping Station Project (Planters Pumping Station) Jefferson Parish, LA Craig Waugaman USACE Leake Avenue New Orleans, LA (504) 862-2673	Jefferson Parish Pumping Station (Planters Pumping Station): This project received the following American Concrete Institute awards in November 2012: • Overall Best Project • Best Concrete Sustainability • Award of Excellence (Best Project of 2012) This U.S. Army Corps of Engineers' project involved the extension of nine (9) steel drainage discharge pipes (eight-84 in. diameter and one-36 in. diameter), installation of discharge pipe valves and associated electrical and mechanical work, construction of a concrete flood protection T-Wall (consisting of pile foundation, wall and base slab) within the existing discharge basin, concrete scour protection at the location where the required T-wall ties into an existing earthen levee system at both ends of the improvement and a concrete dolphin protection system. In addition, miscellaneous work required for this project included placement and compaction of earthen backfill material and lightweight aggregate, construction of concrete paving between the pump station's existing I-wall and required T-wall, construction of a steel walkway for the pipe extensions, and installation of a storm drain line behind the required T-wall. This project was a part of the Army Corps of Engineers work for the New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS). Most of this project required the utilization of cast-in-place concrete made of Type I cement with 20% Class F Flyash replacement, precast concrete piles made of Type I cement concrete, and a combination of cast-in-place and precast concrete pile bents made of high early strength Type III cement concrete. Precast concrete piles and precast bents were utilized to construct the new walkway and the discharge pipe supports. The entire project was designed and constructed as per the U.S. Army Corps of Engineers Hurricane and Storm Drainage Risk Reduction System Design Guidelines of 2008. All structural loads resulting from storm water at still water level, low water level and up to the top of T-wall, structural fill, storm surge wave action, barge impact, construction surcharge and wind were incorporated in the design of the concrete T-wall. In addition, the cofferdams required for the construction of T-walls had concrete wing wall elements which were designed for temporary loads resulting from construction and water drawdown conditions. Temporary concrete pipe supports were also provided when necessary to facilitate pump discharging operations. The permanent pipe supports were designed to carry the discharge pipes and all associated loads. The Dolphin System was designed for 100 kips of barge impact load.	
 		

Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2012	$35,000,000.00	$8,750,000.00

PROJECT NO. 10	
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**
General DeGaulle Box Culvert Crossing (Wall Boulevard and Sandra Drive), New Orleans, Louisiana Sewerage and Water Board of New Orleans New Orleans, LA (504) 585-2365	This project consisted of a dual (10' x 14') concrete box culvert with an asphalt roadway crossing the box culvert that connects two state highways. The modeling and design included box culvert, forty-foot (40') concrete transition flume sections on each end of the box and vertical and horizontal alignment. Design Engineering, Inc. (DEI) provided all services required for the preparation of preliminary and final design plans. DEI's responsibilities included modeling, hydraulics, structural design of box culverts and concrete flumes, horizontal and vertical alignment, design of new subsurface drainage to tie existing drainage infrastructure with concrete box culverts and comment review and responses. The referenced project was designed in accordance with AASHTO Guidelines and LA DOTD Roadway and Bridge Specifications. The construction of this project included the removal of the existing culverts, removal and replacement of street paving and curbs, utility relocations, traffic detours and traffic control plans, streetlight removal and replacement, as required for the construction of the new canal crossings.
 	

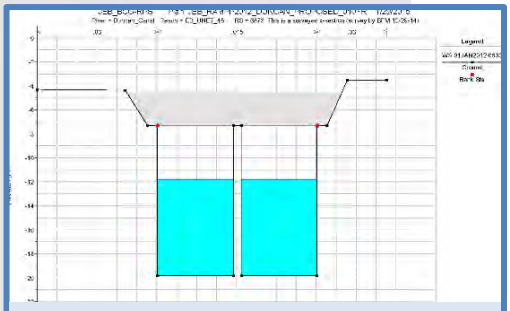
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	**Work for which Firm was Responsible:**
2011	$3,400,000.00	$3,400,000.00

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. n/a	n/a	n/a
2.		
3.		
4.		

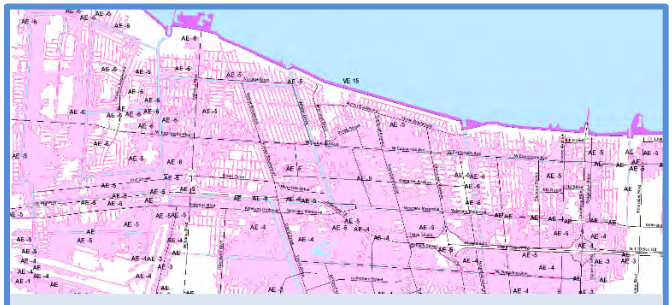
N. Use this space to provide any additional information or description of resources supporting Firm's qualifications for the proposed project.

Design Engineering, Inc. (DEI), a Jefferson Parish Woman Owned Small Business, is a highly qualified professional engineering firm and has been in Jefferson Parish for over 38 years. DEI has performed H/H modeling on dozens of Parish projects including some of its most recognizable canals (Duncan, West Esplanade, West Metairie, and others). DEI maintains excellent daily working relationships with the Jefferson Parish Administration and has the technical expertise available to successfully produce an outstanding project for Jefferson Parish.



EB Drainage Model at Duncan Canal

Dewberry has the modeling and engineering expertise required to successfully assist Design Engineering with this contract in Jefferson Parish. Along with the key personnel included who have dedicated capacity to perform these services, Dewberry and our partners have a bench strength of over 2,000 professionals across the nation that we can draw upon as necessary in the event additional capacity is needed.



East Bank 100 – Year FEMA Flood Map

Dewberry is an established national leader in hydrologic and hydraulic modeling and risk assessment. Their staff have been leaders as part of a nationwide effort to conduct both 1-D and 2-D probabilistic modeling for FEMA over the past 2 years. This approach is more in line with the Parish's

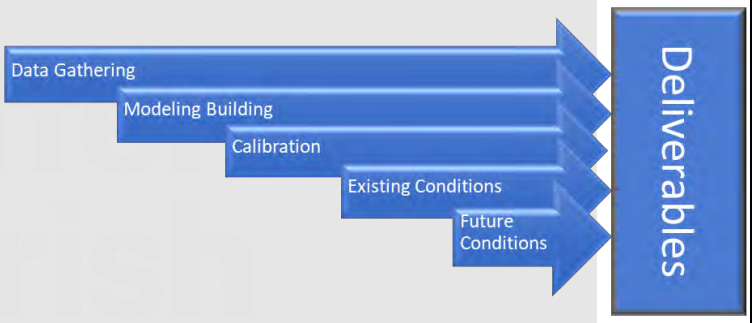
methodology for assessing the value and benefit-cost of drainage projects and gives a more complete picture of the range of outcomes by varying input parameters within their expected range of uncertainty.

HSDRRS Modeling and Mapping | Multiple Locations, LA

Linfield, Hunter & Junius, Inc. (LH&J) has been providing quality engineering services for over 53 years. As the design engineering consultant for a number of previous drainage projects, LH&J is well postured to provide the DEI Team with highly experienced and extremely capable professionals who are intimately familiar with the critical considerations that are unique to this very important project. Their experience provides the DEI Team the unique position of being a low risk provider to Jefferson Parish.

Batture, LLC, established in 2014, is a Louisiana-based civil engineering, land surveying, and landscape architecture firm specializing in water resources engineering, and hydraulic/hydrodynamic modeling. The company is a certified Disadvantaged Business Enterprise (DBE) and a Small Entrepreneurship (Hudson Initiative), dedicated to the progress and protection of Louisiana.

The DEI Team knows how to do this project, and not all teams can say that; this is not a project that every civil engineering firm can perform. Below is a summarized outline of how we will get it done in coordination with the Jefferson Parish Engineering, DPW, and Drainage Departments.



Master Drainage Plan Approach

1. Data Collection

DEI will obtain the existing SWMM model, and all as-built plans for projects completed since the last model update from the Parish, the Municipalities, the State, CPRA, USACE and others. We will collect new data from the field as needed as well, though we are hopeful that will not be a large part of the project.

2. Model Updates

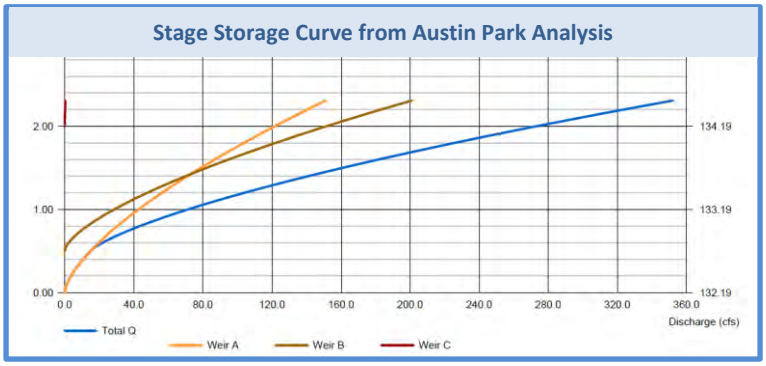
The Jefferson Parish SWMM model will be updated to current conditions. Initially this will require taking information from all new as-built plans and updating the canals, culverts, gravity lines, and pump stations. Next, LIDAR data will be evaluated to determine what subsidence has occurred since the prior model update. In addition, relative sea level rise will be used to update the boundary conditions of the model. When this is complete, the elevations and structures in the model will accurately represent the field conditions (as closely as possible).

These actions will result in a current uncalibrated model.

3. Calibration

Without calibration, H/H models of this size produce wildly varying and unverifiable results. DEI has experienced this when asked to use models previously developed by others. These models may look impressive, but without calibration, they are of no use. Because Jefferson Parish maintains a significant

SCADA system, data will be available for rain events, lake levels, and canals levels. DEI will run models repeatedly using the SCADA to improve output fit. By adjusting less certain factors (like channel roughness for instance), a best fit will be achieved resulting in actual rain event data in the model producing water surface elevations that match the real-world data.



For a perfect calibration (likely not possible) when a measured storm event is used as input into the model, the resulting water surface elevations and pump operation will show output that matches the SCADA data for that storm event. Once this is completed, the model can be trusted to produce that field verifiable results.

4. Existing Conditions

With a calibrated existing conditions model, DEI will evaluate where the most critical priorities exist for the Parish. DEI will field verify these results meeting with Jefferson Parish Drainage Officials and reconfirm that the "hot spots" in the model represent hot spots that exist in their operations.

5. Improved Conditions

DEI will model improvements to the system. We will develop a preliminary list and then meet with DPW and Drainage to make certain to include their ideas. These might include: larger gravity lines, additional storage areas (like ponds), concrete lining existing earthen channels, increased pump capacity, larger box culverts, etc. These will be modeled as a system and as individual improvements. Each improvement will include a preliminary cost estimate and will be tabulated with its appropriate details.

6. Deliverables

The results of the improved conditions model will allow prioritization of projects per basin as a factor of cost per resident, cost per square area, and cost per inch flood reduction per square area. DEI will work with the Parish staff to develop this list so that the prioritized projects can be used in their capital planning needs.

MINIMUM REQUIREMENTS FOR SELECTION

1. The persons or firms under consideration shall have at least one (1) principal who is a licensed, registered professional engineer in the State of Louisiana (Section C. of TEC Professional Services Questionnaire);

   DEI has several personnel that meet this requirement. *John Holtgreve, P.E.* has over 42 years of design and management experience with Jefferson Parish Drainage projects and is a Registered Professional Engineer in Louisiana with vast experience in modeling drainage, structural concrete, and large box culvert design and construction.

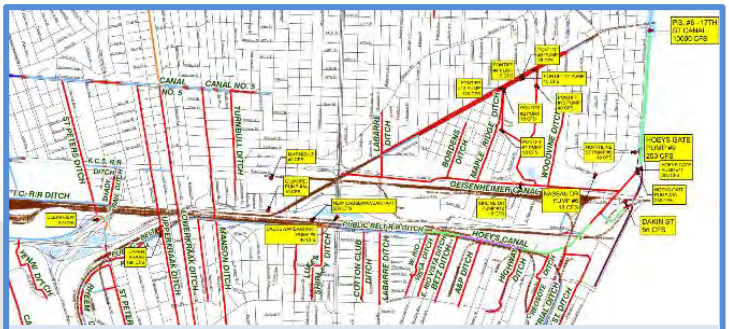
2. The persons or firms under consideration shall have a professional in charge of the Project who is a licensed, registered professional engineer in the State of Louisiana with a minimum of five (5) years' experience (Section K. "PROFESSIONAL IN CHARGE OF PROJECT:" of TEC Professional Services

Questionnaire);

Jim Martin, Ph.D., P.E. is President of DEI and has over 20 years of modeling, design, and management experience with Hydraulic Engineering and Modeling projects and is a Registered Professional Engineer in Louisiana with a doctorate degree in hydraulics. He's been recognized in several courts as an H/H expert.

3. The persons or firms under consideration shall have one (1) employee who is a licensed, registered professional engineer in the State of Louisiana. A subcontractor may meet this requirement only if the advertised Project involves more than one discipline (Section D. of TEC Professional Services Questionnaire)

   Design Engineering, Inc. has several personnel that meet this requirement. *Ben Bartlett, P.E., P.T.O.E.* has over 8 years of design and modeling drainage projects including the modeling and subsequent design of large culverts inside the Jefferson Parish Drainage system; he is a Registered Professional Engineer in Louisiana.



Portion of Old Metairie Drainage System

EVALUATION CRITERIA

1. PROFESSIONAL TRAINING AND EXPERIENCE:

   A. Company Experience

   The DEI Team and staff members have unique hydraulic modeling experience local to Jefferson Parish, regionally in the Southeast US, and nationally:

   a. Jefferson Parish Hydraulic Modeling

   - Duncan Canal and Confluence

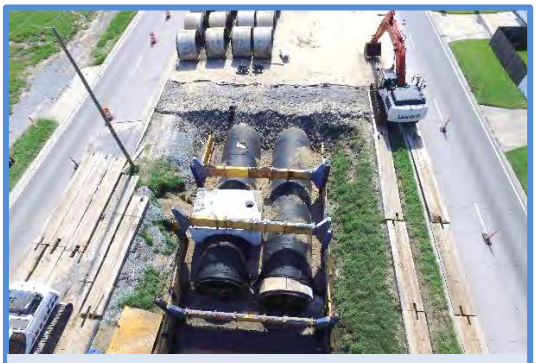
   This project is located at the confluence of West Esplanade Canal and Duncan Canal in the City of Kenner (Jefferson Parish). The objective of the project is to reduce restriction in both canals by removing the aging wooden bridge structures and replacing it with two modern large double barrel concrete box culverts (2 boxes in each canal).

   DEI used the Jefferson Parish East Bank full model and edited it to perform the hydraulic analysis for this primary drainage canal for the City of Kenner as well as the structural design for the boxes. The Duncan Boxes alone are over 13 feet tall and 80 feet wide inside the openings (the actual structure is of course much larger).

   - West Esplanade Crossing

   DEI was contracted by Jefferson Parish to provide feasibility/ conceptualization, hydraulic modeling, preliminary and final plans, construction administration and resident inspection services for the improvements to the West Esplanade Avenue Crossing (Between Williams Blvd. and Power Blvd.)

This project included the installation of 500 feet of twin 96" diameter reinforced concrete arch pipes with headwalls to accommodate crossing of West Esplanade Avenue Median Canal and the installation of reinforced concrete u-shaped transitions structures from 96" diameter reinforced concrete arch pipe headwall to earthen canal.



West Esplanade Crossing (early construction)

- Frisco Avenue at Metairie Road

The project area is in Old Metairie. The drainage system in this study is part of the Old Metairie basin which discharges via Lake Avenue into the Canal Street Canal. Design Engineering, Inc. (DEI) was contracted by Jefferson Parish to study, model, and improve the hydraulic characteristics of the Frisco Drainage Sub-Basin in Old Metairie, which includes the corner of Metairie Road and Frisco Avenue, Frisco Avenue, and Lake Avenue. Currently, the corner of Metairie Road and Frisco Avenue experiences issues with flooding, even during minor rain events.

DEI modeled the drainage system and was able to determine areas of concern in the present system. Improvements to the system were also modeled to provide the Parish with recommendations to address claims of flooding in the shops along Metairie Road during severe storm events.

Regional Modeling

- Picayune Industrial Park

Picayune Model Layout

The Picayune Industrial Park is a 126-acre site located in Pearl River County south of Picayune Mississippi. A portion of the industrial park is occupied by a sand drying facility bounded to the north by woodlands, to the east by a pre-existing railroad, to the south by open grassed fields, and to the west by the Alligator Branch stream and woodlands.

A lawsuit was brought against the facility and its engineering firm claiming that the construction of the facility increased peak storm water runoff entering Alligator Branch. The claim further alleged that the increased peak runoff had caused increased flooding in the Ravenwood Subdivision.

The National Resource Conservation Service (NRCS) method was used to model the peak runoff from the site for the post-development condition (for the 10-year 24-hour design storm). The NRCS modeling was performed using Hydraflow Hydrographs Extension for AutoCAD Civil 3D 2014 Version 10.3.

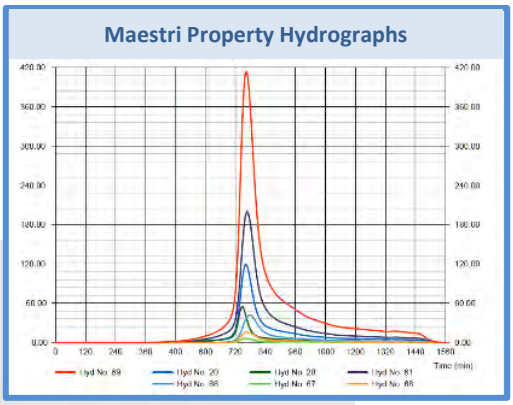
The results of the modeling demonstrated that the engineering firm's designed drainage and detention system were adequately sized to reduce post-development peak runoff to a level that

is less than the pre-development peak runoff for a 10-year design storm. DEI's client prevailed in the case.

- Maestri Property, Mandeville

The Maestri Property is located in Old Mandeville and is roughly 15 acres with a perimeter of 3,400 feet; a grassed channel traverses it. The property is near the downstream portion of the drainage basin with 273 acres of the basin draining through the property via its grassed earthen channel.

The drainage basin is developed suburban residential with some small exceptions, and no stormwater storage facilities are present. A complaint and subsequent suit indicate that the property owners have experienced increased occurrence of flooding, increased area of flooding, and increased duration of flooding.

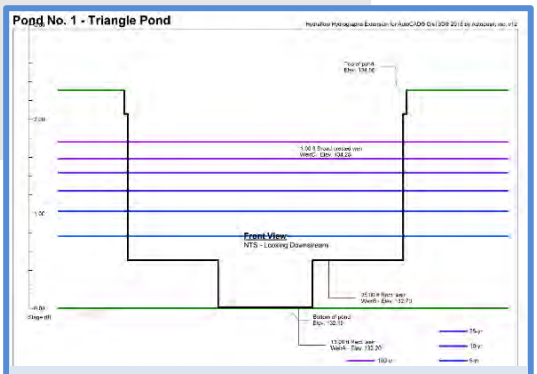

Maestri Property Hydrographs

DEI first employed the National Resource Conservation Service (NRCS) method to model the peak runoff in the basin (for the 10-year 24-hour design storm). The basin was divided into 30 sub-basins and each was modeled using areas, hydraulic lengths, and slopes. A hydrograph was developed for each sub-basin reflecting runoff as a function of time.

These data supported that for a given condition at the Maestri property, flooding will occur more frequently, at greater area and depth, and for longer durations. DEI's client prevailed in the case.

- Austin Park Residential Subdivision, Mobile, Alabama

Austin Park II is a 38-acre subdivision located in Baldwin County, Alabama. The subdivision consists of 72 single family homes and the associated infrastructure, which includes a 2-acre detention pond. This pond drains westward via an outfall structure and drainage channel into Picard Branch, which generally flows south until it reaches a confluence with Caney Branch which eventually reaches its own confluence with Fish River and ultimately discharges into the Gulf of Mexico (via Weeks Bay and then Mobile Bay).



Austin Park Weir Model

DEI developed a storm water model employing the SCS Runoff Curve Number Method (also referred to as the USDA NRCS TR-55 method). This is the most rigorous and appropriate method for analyzing small watersheds with time and storage as variables.

The Austin Park II storm water collection and detention system model was developed for the field conditions and regulations at the time of the original design (as best they could be determined from available information).

The model results proved that the magnitude of this rainfall event exceeded the Austin Park II drainage system design parameters (and likely those of the surrounding area). DEI's client prevailed in the case.


Mississippi's largest pipe at install

- Meridian Mississippi Pipe Collapse Investigation

In 1999, the biggest pipe ever installed in the State of Mississippi was installed by the City of Meridian. The pipe was a Horizontal Ellipse in shape and measured 28 feet across at its widest and 17 feet high at its tallest and was approximately 400 feet long.

DEI was retained to evaluate multiple conflicting expert reports and to identify the most likely **cause of the structure's failure and to assist in the assignment of fault**.

This required the review of multiple model results, construction reports from 1999, evaluation of the engineering performed during the initial design, and evaluation of the engineering performed during the subsequent work that was completed immediately prior to the structures collapse. DEI was also provided with various video angles of the property before, during, and after the collapse. DEI performed site visits across the large basin to identify signs of increased erosion that would add to the sediment load of the drainage flow.


Mississippi's largest pipe at Collapse

DEI was able to show that the initial design (20 years prior) did not account for an increased sediment load and the corrosive condition of the surrounding soils. DEI's client prevailed in the case.

b. National Modeling

All aspects of all the above projects were 100% performed by people in DEI's local office. In addition to this outstanding local modeling experience, DEI has teamed with Dewberry. Their national experience brings an additional level of knowledge and scrutiny. While we are highly proficient modelers, the Parish's schedule may require that we reach into Dewberry's 2000 peronnel so that we can meet whatever deadline is prescribed. Below is a brief list of several of their hydraulic modeling projects.

- HSDRRS Modeling and Mapping | Multiple Locations, LA
- Stormwater System Analysis Program | Gwinnett County, GA
- City of Albany Engineering Services (CSO/Storm Drainage/WWTP) | City of Albany, GA
- City of Garland Stormwater System Analysis and Mitigation | Garland, TX

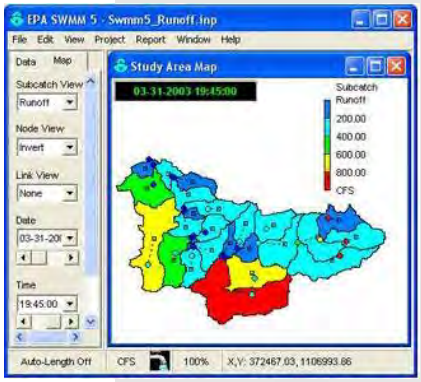
B. Key Personnel Experience

The DEI Team maintains a highly reputable and well-respected staff. Below we list only some of the key personnel who have been significantly involved in the process and will be involved in the modeling and production of this Project. Every engineer below has at least one post graduate degree.

Dr. Jim Martin (President of DEI) is a lifelong resident of Jefferson Parish having lived on the west bank for 27 years and the east bank for 28. His PhD was earned at Tulane in hydrology and hydraulics (H/H). His course work and dissertation extensively examined one-, two-, and three-dimensional H/H modeling. Since then, he has performed H/H modeling on dozens of Parish projects. He led modeling efforts at BKI and at GEC before leaving to become President of DEI, much of their modeling experience between 2002 and 2014 was performed by or with Dr. Martin. He has performed as a court recognized H/H expert and is trusted to review other companies' H/H models and conclusions to determine whether they meet the appropriate standard of care for H/H engineering work. His work in this field has withstood the scrutiny of depositions, Daubert challenges, and trial cross-examinations.

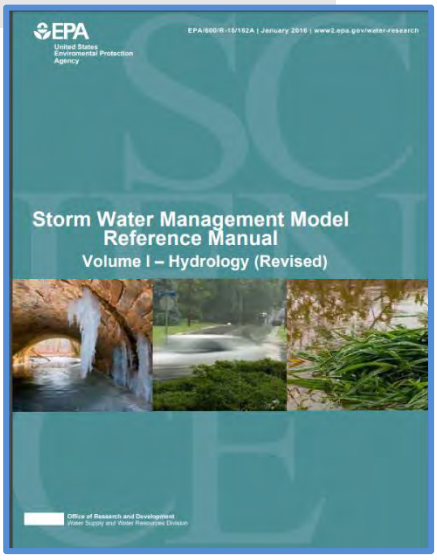
Portion of West Bank Pumping System

From the very beginning of his career, drainage projects have been an emphasis. Dr. Martin is a registered Professional Engineer in Louisiana, Mississippi, Alabama, and Georgia, and is Past President of the New Orleans Chapter of American Consulting Engineers Council/Louisiana and New Orleans Chapter of ASCE. He has worked for years with Jefferson Parish Department of Public Works addressing drainage, roadway, bridge, sewer, water, and other needs.



DEI has also secured the written commitment of Cecil Soileau, PE to serve in the role of QC/QA Manager (if DEI is awarded a contract). Cecil is more familiar with the Jefferson Parish SWMM models than any other person. He personally performed the last Parish model update (from HEC-RAS to SWMM).

Mr. Ben Bartlett has focused his work on Jefferson Parish drainage since the beginning of his career. He has performed H/H modeling on 5 expert witness cases, West Esplanade Canal, Duncan Canal, Causeway Blvd, and Frisco Ave, to name only a few. He has also performed these services for St. Charles Parish, Covington, Mandeville, and St. Tammany. He understands the specifics of how the Jefferson Parish Drainage Basins function and the conditions of southeast Louisiana.



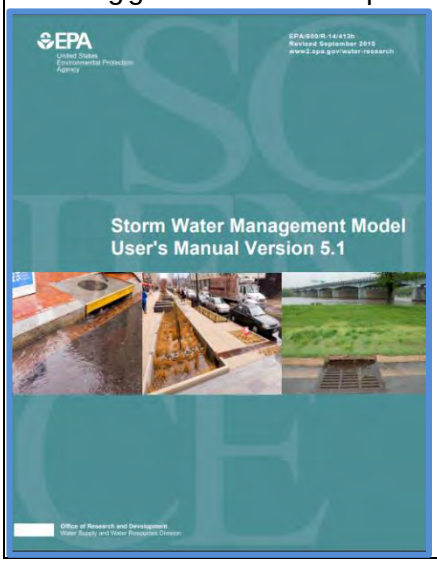
John W. Holtgreve, P.E. is Executive Vice President of Design Engineering, Inc. In 1980, while working for BKI, he was a key member of the original Jefferson Parish Drainage Master Plan Team. He has known the basins and canals of the Jefferson Parish system for over 40 years. Mr. Holtgreve has over 42 years of professional consulting engineering experience and has worked as Project Manager and Principal-in-Charge for numerous drainage improvement and modeling projects in Jefferson Parish. Mr. Holtgreve holds a BS and an MS in Civil Engineering from Tulane University and is a Registered Professional Engineer in the State of Louisiana. Mr. Holtgreve's past professional experience includes: American Society of Civil

Engineering (Past State Board Member), American Consulting Engineers Council/Louisiana (Past President and Board Member), American Consulting Engineers Council (National Director), Society of American Military Engineers, American Concrete Institute, American Public Works Association.

Mr. Sam Fleming is a SWMM model expert. SWMM is the Modeling Software that Jefferson Parish currently employs and will employ for Drainage Master Plan. He has over 25 years of experience in H/H modeling and design. He has led multiple water resources projects including stormwater infrastructure system assessment, stream restoration, floodplain studies, and expert witness services. Mr. Fleming has directed the engineering for projects requiring extensive H/H modeling such as a FEMA flood map Modernization Program, a NRCS Watershed Dam Rehabilitation, an entire Stormwater Utility, and a Stormwater Infrastructure Improvements Programs.

Jennifer Snape, P.E., has a wide range of project experience with hydrologic and hydraulic modeling in Southeast Louisiana. She has successfully managed and delivered projects for private and public clients, including Plaquemines Parish, the City of New Orleans, Sewerage & Water Board of New Orleans, St. Bernard Parish, St. Tammany Parish, and others. Ms. Snape has proficiently completed the project planning, engineering and design, hydraulic model selection, hydraulic model development, hydraulic model verification, alternatives analyses, and permitting tasks for numerous projects.

John Karlin, SE, P.E.., has been involved with numerous design and construction projects with Design Engineering, Inc. for several years. He is a licensed Structural Engineer (one of only 4 in Metairie). Mr. Karlin has authored the General Design Memorandum (GDM) for the LADOTD, Jefferson Parish and the Regional Planning Commission for a new bridge to be constructed between River Road north to the elevated Causeway at Jefferson Highway/Causeway Bridge. The project involves 10 alternatives that range from $11,500,000.00 to $25,000,000.00 and can be constructed in two (2) phases. This complex project involves major traffic efforts that will improve the traffic flow on River Road at Ochsner Hospital to Causeway Blvd. and Jefferson Highway. He holds a BS in Civil Engineering from Worcester Polytechnic Institute and a Masters in Civil Engineering from University of Illinois at Urbana-Champaign. Mr. Karlin has passed his PE exam and is now pursuing his license. He is certified in the ATSSA Traffic Control Technician, and ATSSA Traffic Control Supervisor and Flagger Course as required by the LADOTD. On this project, he will provide constructability and cost estimating expertise for any alternatives produced from model results.



Brent French, P.E., has over 8 years of experience in design and construction administration of a variety of infrastructure improvement projects in Jefferson Parish. Mr. French holds a BS and MS in Civil Engineering from the University of Mississippi and is a registered professional engineer in the state of Louisiana. He has worked on the West Metairie Canal, Airline Park, West Esplanade, Duncan Canal, Westwood drive, and many other local projects. On this project his versatile civil and structural experience will be used for evaluating constructability and costs for alternatives.

2. CAPACITY FOR TIMELY COMPLETION OF NEWLY ASSIGNED WORK:

We have the capacity to provide the modeling services for this project and will be able to complete it in a timely manner and within budget. Based on our past working experience with Jefferson Parish, DEI has been very successful in completing projects on time. DEI completed the design of the Geisenhiemer Box Culvert plans on a highly accelerated schedule to meet the deadline of Metairie Country Club. This was a $12M construction project with 3 complex tie-ins on a very busy state route. Our staff has repeatedly demonstrated that the goals of timeliness and quality are met on a daily basis. We have the capacity to expedite any project assigned to us. In fact, we have a reach-back capability of additional personnel beyond those listed herein should the situation demand such. As a Jeff Parish company, employing Jefferson Parish residents, timeliness is especially important to DEI. This Master Drainage plan will serve and protect **DEI's** office and **employees'** homes. DEI always prioritizes its Jefferson Parish work for these reasons.

DEI's current workload projection shows a an excess staff capacity of 30% for the remainder of 2022. We have the talent and they are available to work this Master Drainage Plan.

3. LOCATION OF OFFICE:

Design Engineering, Inc. maintains its office in Jefferson Parish at 3330 West Esplanade Avenue, Suite 205, Metairie, Louisiana, and has done so for 38 years.

Our Team knows the territory.

- We are headquartered in Jefferson Parish and have outstanding geographic proximity to serve Jefferson Parish under this assignment.
- We have worked with all facets of Federal, State, and Local governments, as well as local communities and private industry in excess of 40 years as individuals and in excess of 38 years as a firm.
- We can and will provide responsive services to Jefferson Parish as demanded for this project.

4. ADVERSARIAL LEGAL PROCEEDINGS:

Design Engineering, Inc. is not now, nor has it ever been, involved in any adversarial legal proceedings between the Parish and any related parties.

5. PRIOR SUCCESSFUL COMPLETION OF PROJECTS OF THE TYPE AND NATURE OF THE ENGINEERING SERVICES:

DEI and the DEI Team have completed dozens of successful drainage projects in Greater New Orleans that required hydraulic modeling, analysis, and new drainage structures. Below shows only our history with Jefferson Parish; however (as shown herein) we have been producing projects on hard deadlines (like court dockets) regularly:

- West Esplanade Canal Crossing (Jefferson Parish): feasibility/ conceptualization, hydraulic modeling, preliminary and final plans, construction administration and resident inspection services for the improvements to

Duncan Canal Bridge Replacement

the West Esplanade Avenue Crossing (Between Williams Blvd. and Power Blvd.)

- Duncan Canal Bridge Replacement (Jefferson Parish): Planning, design and engineering tasks, most notably the hydraulic modeling and analysis and structural design for the primary drainage canal in Kenner.
- Geisenheimer Box Culvert (Jefferson Parish): Planning, Design and engineering tasks, most notably the hydraulic modeling and analysis and structural design.
- Airline Drive Drainage Crossing - **St. Peter's Ditch (Jefferson Parish):** Design, Construction Administration and Resident Inspection for drainage improvements to the existing St. Peter's Ditch.
- Wilker Neal Drive at Airline Drive (Jefferson Parish): Design, Construction Administration and Resident Inspection for a new 1100 foot long double celled 8'x8' reinforced concretre box culvert.
- Northbound Manhattan Boulevard Continuous Right Turn Lane: Design, Construction Administration, Construction Engineering, and Resident Inspection for the widening the roadway which included drainage and subsurface drainage under the additional lane.
- Macarthur Dr. Interchange Completion Project (Jefferson Parish): (At-Grade Roadway & Bridges): Design, Construction Engineering, and Support of a frontage road along the elevated Westbank Expressway (storm drainpipes and extension of existing reinforced concrete box culvert).
- Dwyer Drainage Pumping Station, Discharge Tubes and Canal (Jefferson Parish): Design, Construction Engineering, and Resident Inspection (drainage discharge).
- Algiers Canal Pumping Station Project (Planters Pumping Station) (Jefferson Parish): – Design and Engineering During Construction (extension of nine (9) steel drainage discharge pipes)
- Jefferson Parish Submerged Roadways, District 3 – Design, Construction Administration, and Resident Inspection (DEI)
- Jefferson Parish Submerged Roadways, District 5 – Design, Construction Administration, and Resident Inspection (LHJ).

Airline Drive Drainage Crossing
(St. Peter's Ditch)

6. SIZE OF FIRM:

The DEI Team and DEI specifically have excess staff on hand at the time of submittal. The addition of this project will be welcomed as we could use the work to maintain current staffing levels. In the last year, we have expanded our engineering staff. This expansion will allow our most senior and specialized personnel to devote their full attention to the Jefferson Parish Master Drainage Plan.

DEI utilizes its most senior professionals and executives as actual engineers. Engineers with 40 years' experience rarely perform the engineering work on a hands-on basis at other firms. All of DEI's engineers in this submittal will participate in the details of the engineering required for this project.

DEI presently has sufficient technical, supervisory, and administrative personnel to provide the required services and can assure the successful and swift completion of this project.

7. PAST PERFORMANCE ON PUBLIC CONTRACTS:

DEI has won awards for its work in Jefferson Parish (among other places).

West Esplanade Canal Crossing

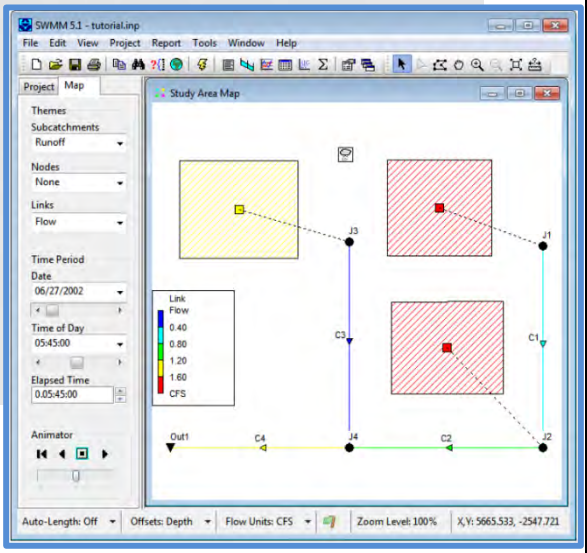
In 2020 and 2021, DEI has been recognized as the Top Engineering firm by New Orleans City Business Magazine.

In 2019, DEI and Jefferson Parish received an ACI Award of Merit for the West Esplanade Canal Crossing (for which DEI performed hydraulic modeling and calculations prior to design and construction).

DEI was awarded the ACI Louisiana Award for Best Project of 2012, Best Public Works Project of 2012, and the Award for Sustainability for its work on the Planters Pumping Station Frontal Protection Project (located in Jefferson Parish).

The latest award we received was the ACI Louisiana Award of Excellence and the Overall Best Concrete Project for MacArthur Interchange Completion Project – Phase 1B in 2016 (Jefferson Parish).

In addition, the Wilker Neal at Airline Drive Box Culvert project was completed on time and without a change order. The Veterans Boulevard Widening (Roosevelt to Williams) Project was completed on time as well, in a difficult traffic situation, and with no complaints from adjacent property owners during or after construction.



The Manhattan Blvd. Widening was successfully completed amid some of the highest levels of traffic anywhere in the Parish.

Design Engineering, Inc. has designed and administered the construction contracts for other award-winning projects as well. DEI received a Certificate of Exceptional Performance from the USACE for work that included, among others, pump station design. The Lakefront Airport Bridge (East Approach) has won several awards including Best Project of the Year in the State of Louisiana by the ACI Louisiana Chapter. The project also received awards from the Precast/Prestressed Concrete Institute, including Best Project of the Year in Louisiana and second overall for the Southern Region.

DEI also won the ACI Louisiana Award of Excellence and Best Public Improvement Project for its work on the Lakefront Seawall Area Erosion Control Project in 2014.

REFERENCES

(1) Dr. Shawn Wilson
Secretary
LADOTD
Baton Rouge, LA
(225) 379-1200

(2) Wilma Heaton
Chair
NFPAMA
New Orleans, LA
(504) 355-5990

(3) Carlton Dufrechou
General Manager
GNOEC
Metairie, LA
(504) 835-3118

DEI and our staff are anxious to undertake this critical project for Jefferson Parish so that we can improve and advance our Parish for decades to come.

AWARDS

- ***Award of** Merit* from the ACI, Louisiana Chapter for St. Andrew Street Wharf Erosion Mitigation (2022)
- ***Award for the Top Engineering Firm*** from the City Business (2021)
- ***Award for the Top Engineering Firm*** from the City Business (2020)
- ***Award of Excellence*** from ACI Louisiana Chapter for Replacement of Sewage Pumping Station No. 8 (2019)
- ***Award of Merit*** from ACI, Louisiana Chapter for West Esplanade Avenue Crossing Project (2019)
- ***Award of Excellence in Historic Preservation*** from The La Landmarks Society for 419 Carondelet Project (2019)
- ***Award of Excellence in Historic Preservation*** from The La Landmarks Society for 822 Howard Project (2017)
- ***Overall Best Concrete Project*** from ACI Louisiana Chapter for MacArthur Interchange Completion Project –Phase 1B (2016)
- Award of ***Excellence*** from ACI Louisiana Chapter for MacArthur Interchange Completion Project – Phase 1B (2016)
- Award of ***Excellence*** from the ACI, Louisiana Chapter for Seawall Erosion Control Paving Project – Reach 1B (2014)
- ***Most Improvement to the Public Award*** from the ACI, Louisiana Chapter for Seawall Erosion Control Paving Project – Reach 1B (2014)
- ***Overall Best Project*** from the ACI, Louisiana Chapter for Planter's Pump Station Frontal Protection (2012)
- Award for ***Concrete Sustainability*** from the ACI, Louisiana Chapter for Planter's Pump Station Frontal Protection (2012)
- Award of ***Excellence*** from the ACI, Louisiana Chapter for Planter's Pump Station Frontal Protection (2012)
- ***USACE – New Orleans District Certificate of Appreciation,*** for Exceptional Achievement in support of the Mississippi Valley Division's New Orleans District and the Execution of the Hurricane and Storm Damage Risk Reduction System (2012)
- ***Exceptional Project Rate,*** for LPV 106, US Army Corps of Engineers Hurricane Protection Office (2012)
- Award of ***Merit*** from ACI for the Plaza Area Paving at Stepped Seawall on Lakeshore Drive (2005-2006)
- Award of ***Excellence*** from ACI for the Lakeshore Drive – London Avenue Canal Bridge Replacement (2003)
- Award of ***Merit*** from ACI for the Retaining Wall Restoration at the New Orleans Lakefront Airport (2001)
- ***Creative Design Utilizing Precast and Prestressed Concrete*** from PCI for the East Approach to Stars and Stripes Boulevard (1999)
- Concrete Project Award from G.S.P.C.A. for ***Best Project*** for Stars and Stripes Boulevard East and West Approach (1997 – 1998)
- ***Best Project of the Year*** award from ACI, Louisiana Chapter for East Approach to Stars and Stripes Boulevard (1997)

BEST OVERALL CONCRETE PROJECT & AWARD OF EXCELLENCE
MacArthur Interchange Completion Project – Phase 1B

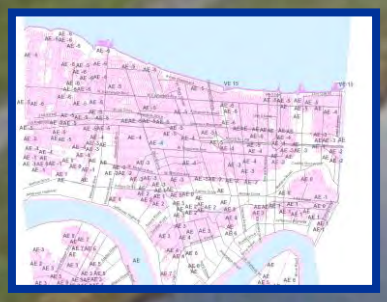
OVERALL BEST PROJECT, AWARD OF CONCRETE SUSTAINABILITY & AWARD OF EXCELLENCE
Planter's Pump Station Frontal Protection

AWARD OF EXCELLENCE & MOST IMPROVEMENT TO THE PUBLIC
Lakeshore Dr. Seawall Area Erosion Control Paving

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

Signature: _____ **Print Name:** Jim Martin, Ph.D., P.E.

Title: President **Date:** March 23, 2022



Drainage Master Plan for the East Bank of Jefferson Parish

SOQ 22-014 - Resolution No. 138896

Dewberry

March 24, 2022

TEC Professional Services Questionnaire

A. Project Name and Advertisement Resolution Number:

Drainage Master Plan for the East Bank of Jefferson Parish
Resolution No. 138896

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

Dewberry Engineers Inc.
9026 Jefferson Highway
Suite 302
Baton Rouge, LA 70809

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:

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.

Jacob Lesue, PE, CFM
Associate, Senior Project Manager
(p) 940.735.3345
(e) jlesue@dewberry.com
Professional Engineer - LA (#PE.0039160), TX (#100352), OK (#29366)
Certified Floodplain Manager - TX (#0999-60N)

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

___ Administrative	___ Estimators	___ Specification Writers
___ Architects (Licensed)	___ Geologists	___ Structural Engineers
___ Chemical Engineers	___ Geotechnical Engineers	3 Graduate Engineers
6 Civil Engineers	___ Interior Designers	1 Project Managers
____ Construction Inspectors	___ Landscape Architects	___ Clerical
___ Ecologists	___ Land Surveyor	___ Grant/Funding Specialist
___ Electrical Engineers	___ Mechanical Engineers	___ Sanitary Engineers
___ Engineer Interns	___ Environmental Engineers	
___ Professional Land Surveyors		10 **TOTAL**

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

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

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.

TEC Professional Services Questionnaire

1.
2.
H. Has this JOINT-VENTURE previously worked together? Please check: N/A **YES _____ NO _____**
I. List all subcontractors anticipated for this Project. Please note that <u>all subcontractors must submit a fully completed copy of this questionnaire</u>, 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. See Prime's TEC Form		
2.		
3.		

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

35 .

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:

Jacob Lesue, PE, CFM
Associate, Senior Project Manager

Project Assignment:

H/H Modeler

Name of Firm with which associated:

Dewberry Engineers Inc.

Years' experience with this Firm:

9

Education: Degree(s)/Year/Specialization:

MA, Civil Engineering, Brigham Young University, 2003
BS, Civil Engineering, Brigham Young University, 2003

Active registration: Year first registered/discipline:

Professional Engineer, Louisiana, PE.0039160, 2014
Professional Engineer, Texas, 100352, 2007
Professional Engineer, Oklahoma, 29366, 2017
Certified Floodplain Manager, Texas, 0999-60N, 2004
National Council of Examiners for Engineering and Surveying - United States, 56830, 2014

Other experience and qualifications relevant to the proposed Project:

Jacob has extensive technical and managerial experience in water resources planning, site development, storm drain design and analysis, dam breach analysis, hydrologic and hydraulic engineering and analysis, and GIS mapping and analysis, and State and Federal Permitting acquisition and consultation. His GIS expertise include GIS geodatabase design, ArcGIS usage for mapping, civil design, marketing, and project documentation. Over the past four years, he has served as project manager for multiple HUC-8 watershed studies in Louisiana and Texas as a FEMA Production and Technical Services Contractor. Throughout his career, he has led dozens of projects requesting CLOMRs/LOMRs, worked with state and federal agencies requesting various permits for development, and reviewed regulations for project compliance.

He has 19+ years leading hydrologic and hydraulic (H&H) modeling projects; is well-versed in a variety of modeling approaches and software packages, including HEC-HMS, unsteady HEC-RAS with 2D, XPSWMM 2D, and FLO-2D, and has extensive experience developing hydrodynamic models. He also serves as a subject matter expert reviewing H&H studies nationwide.

TEC Professional Services Questionnaire

CAPABILITIES WITH SIMILAR SERVICES

- 15+ years leading hydrodynamic and hydrologic (H&H) modeling projects
- Well-versed in a variety of modeling approaches and software packages, including HEC-HMS, unsteady HEC-RAS with 2D, XPSWMM 2D, and FLO-2D
- Extensive experience developing hydrodynamic models
- Experienced with scope, schedule, and budget management
- H&H model review and subject matter expert

EXAMPLE PROJECTS

PROBABILISTIC FLOOD RISK ANALYSIS, SACRAMENTO, CA, QUALITY ASSURANCE/QUALITY CONTROL

Led H&H quality control reviews for the team that developed 2D HEC-RAS models covering more than 1,000 square miles and approximately 200 miles of levees in the Sacramento region which includes flooding from the American and Sacramento Rivers. The purpose of this model is to assess flood risk for structures within the incorporated areas due to overtopping or breaching of the levee and interior drainage. This was performed as part of FEMA's new Risk Rating 2.0 initiative which aims to overall the way FEMA rates insurance for at-risk structures by applying advanced monte-carlo approaches to assess risk and uncertainty.

AMITE RIVER BASIN NUMERICAL MODEL, AMITE RIVER BASIN, LA, PROJECT ENGINEER

Developed a 2D model of the detailed overbank areas of the Amite River and minor tributaries in south eastern Louisiana. Incorporated over 50 culvert or bridge structures into 2D domain using data obtained from an extensive survey data collection. Simulated the effects of interstate median barriers during flood events and calibrated to observed conditions.

TEXAS GLO CENTRAL REGION FLOOD STUDIES FOR COMMUNITY DEVELOPMENT BLOCK GRANT – DISASTER RECOVERY (CDBG-DR) PROGRAMS, PROJECT MANAGER

Managed the H&H modeling team to prepare a pilot riverine watershed study to develop procedures and methods for region wide studies. Reviewed other consultants riverine pilot study and provided feedback. Developed costs and schedule for detailed modeling phase for entire region.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Sam Fleming, PE
Associate Vice President, Department Manager

Project Assignment:

H/H Modeler

Name of Firm with which associated:

Dewberry Engineers Inc.

Years' experience with this Firm:

14

Education: Degree(s)/Year/Specialization:

MS, Civil Engineering, University of Alabama, 1993
BS, Civil Engineering, University of Alabama, 1993

Active registration: Year first registered/discipline:

Professional Engineer, Georgia, PE024406, 1998
Professional Engineer, Alabama, 21811, 1997
Professional Engineer, Iowa, 20643, 2011
Certified Design Professional, Level II, Georgia, 22173

Other experience and qualifications relevant to the proposed Project:

Sam has over 25 years of experience in civil engineering in both the public and private sectors in the areas of water resources, transportation, and civil site engineering, with his primary area of expertise being stormwater infrastructure planning and design. While at Dewberry, he has led multiple water resources projects including stormwater infrastructure system assessment, dam safety, culvert improvements, emergency response, stream restoration, floodplain studies, and expert witness services. Prior to joining Dewberry, Sam served nine years with Gwinnett County, Georgia working on stormwater management projects. While with the County, Sam directed the engineering and construction section of the division and managed major capital programs such as the County's DFIRM Modernization Program, NRCS Watershed Dam Rehabilitation, Stormwater Utility, and Stormwater Infrastructure Improvements Programs.

DEKALB FLOODPLAIN MAPPING PROGRAM, DEKALB, GA. PROJECT MANAGER
Responsible for developing existing and future conditions floodplain modeling and mapping for 203 miles of full detail streams in the Upper Ocmulgee and Chattahoochee River watersheds that are being incorporated as updates to DeKalb's DFIRM panels. Dewberry also performed risk analysis of floodprone buildings and roadways and dam breach inundation modeling and mapping.

STORMWATER SYSTEM ANALYSIS PROGRAM, GWINNETT COUNTY, GA. PROJECT MANAGER AND TECHNICAL DIRECTOR
Sam is the overall Program Technical Director for the Gwinnett Stormwater Systems Analysis Program (SSAP). The Gwinnett SSAP is a comprehensive watershed-wide program that includes project scoping, stormwater inventory database enhancements, system-wide hydrodynamic modeling to determine each pipe's existing capacity level of service, and necessary upgrades to meet desired level of service, and development of a cost estimation decision support tool for daily operational decisions involving stormwater pipe rehabilitation and replacement. Additional responsibilities include development, program planning, and technical oversight of other study contractors. To date, Dewberry has completed SSAP studies for over 2,000 miles of stormwater

infrastructure in twelve watersheds and is responsible for on-going program maintenance.

BRIARCLIFF ROAD DRAINAGE IMPROVEMENT PROJECT, DEKALB COUNTY, GA. PROJECT MANAGER

Sam led the development of the design for a flood control detention basin reconstruction project in order to address frequent flooding and overtopping of Briarcliff Road in DeKalb County. This flood control detention basin was designed to hold back large volumes of water and slowly release it over time, while remaining dry during non-storm events. Dewberry developed the construction documents, cost estimates, and permitting materials for this project, as well as supporting DeKalb County's public outreach efforts. Additionally, Dewberry is assisting the County in applying for Hazard Mitigation Assistance funding through FEMA's Hazard Mitigation Grant Program (HMGP) to fund the design, construction, permitting, and land acquisition phases of this project.

COMBINED SEWER SYSTEM ANALYSIS, CITY OF ALBANY, GA, PROJECT MANAGER

As part of the City of Albany's combined sewer system, storm drainage, and wastewater treatment plant capacity analysis, Sam was the project manager responsible for the development of PCSWMM hydrodynamic modeling for the combined, stormwater, and sanitary systems for five drainage basins in the city. This analysis included using PCSWMM modeling to determine the existing capacity level of service of the combined sewer system and separated stormwater and sanitary pipes in order to form recommended upgrades to fully separate the stormwater and sanitary pipe systems. Additional activities included review of proposed stormwater design plans and creating PCSWMM models to analyze their impacts on the basin. This analysis also included cost estimation for proposed designs as well as strategic analysis of the proposed designs to assist the City in prioritizing their efforts.

EXPERIENCE HIGHLIGHTS

- Floodplain Management
- Hydrology & Hydraulics
- Watershed Planning
- Stormwater Infrastructure
- Flood Risk Assessment
- Capital Improvement
- Planning
- Economics and Funding
- Program Policies and
- Ordinances
- Stormwater Utility
- Outreach/Education
- Permitting
- Stormwater Design
- Stormwater Modeling
- Stormwater Planning

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Emma Bones, PE
Project Manager

Project Assignment:

H/H Modeler

Name of Firm with which associated:

Dewberry Engineers Inc.

Years' experience with this Firm:

7

Education: Degree(s)/Year/Specialization:

MS, Civil Engineering, Georgia Institute of Technology, 2014
BS, Environmental Engineering, Georgia Institute of Technology, 2021

Active registration: Year first registered/discipline:

Professional Engineer, Georgia, PE041571, 2016
Certified Design Professional, Level II, Georgia, 0000087789

Other experience and qualifications relevant to the proposed Project:

Emma is a water resources engineer with a wide variety of experience in hydrologic and hydraulic studies from site-specific to watershed-wide projects. An advanced modeler in HEC-HMS, HEC-RAS, and PCSWMM, she has led several training modules of those programs for officials from local counties. Additionally, Emma has aided several local governments in their capital improvement projects, including assessing the flooding risk of bridges and stormwater systems. She has extensive knowledge in stormwater infrastructure, GIS based H&H modeling, floodplain modeling and mapping, and dam breach risk assessments.

COMBINED SEWER SYSTEM ANALYSIS, CITY OF ALBANY, GA. ENGINEER

As part of the City of Albany's combined sewer system, storm drainage, and wastewater treatment plant capacity analysis, Emma assisted in the development of PCSWMM hydrodynamic modeling for the combined, stormwater, and sanitary systems for five drainage basins in the city. This analysis included using PCSWMM modeling to determine the existing capacity level of service of the combined sewer system and separated stormwater and sanitary pipes in order to form recommended upgrades to fully separate the stormwater and sanitary pipe systems. Additional activities included review of proposed stormwater design plans and creating PCSWMM models to analyze their impacts on the basin. This analysis also included cost estimation for proposed designs as well as strategic analysis of the proposed designs to assist the City in prioritizing their efforts.

STORMWATER SYSTEM ANALYSIS PROGRAM, GWINNETT COUNTY, GA. ENGINEER

Emma has completed PCSWMM models for 80 miles of stormwater infrastructure in the Upper Chattahoochee and Upper Yellow River Basin studies for the Gwinnett Stormwater Systems Analysis Program (SSAP). The program is a comprehensive watershed-wide program that includes project scoping, stormwater inventory database enhancements, systemwide hydrodynamic modeling to determine each pipe's existing capacity level of service and necessary upgrades to meet the desired level of service, and development of a cost estimation support tool for daily operational decisions involving stormwater pipe rehabilitation and replacement.

LONG INDIAN CREEK WIP, CITY OF ALPHARETTA, ALPHARETTA, GA. ENGINEER

Emma assisted in the development of a Watershed Improvement Plan (WIP) for Long Indian Creek, which included the development of hydrodynamic rainfall-runoff modeling using PCSWMM software. The model

included all stream sections and all of the City's stormwater system within the watershed. The models were calibrated and run for 30-day periods based on actual rainfall data in order to properly simulate the fecal contamination. Dewberry then assessed the impact of numerous projects on the water quality of the watershed in order to recommend the most impactful and cost-effective solutions.

VILLAGE SPRINGS RUN POND H&H DESIGN, CITY OF DUNWOODY, GA. ENGINEER

Emma developed an H&H model within PCSWMM to represent the storage provided by a pond behind Village Springs Run. The stream leading to the pond outlet control structure had experienced significant bank erosion and incision and was encroaching into the backyard of a nearby house. The goal of the study was to determine if the online pond could be successfully removed without increasing water surface elevations downstream of pond along North Fork Nancy Creek, and if the pond could not be removed, Dewberry was to identify alternatives that would repair and mitigate future bank erosion. Although it was determined that the pond could not be removed without increasing downstream water surface elevations, Dewberry was successful in creating several conceptual design alternatives that either resulted in a no-rise or reduced downstream water surface elevations while also relocating the stream away from the home and producing a more stable bank grade to prevent future erosion.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Haley Mahaffey, PE Assistant Project Manager
Project Assignment:
H/H Modeler
Name of Firm with which associated:
Dewberry Engineers Inc.
Years' experience with this Firm:
5
Education: Degree(s)/Year/Specialization:
BS, Environmental Engineering, University of Georgia, 2016
Active registration: Year first registered/discipline:
Professional Engineer, Georgia, PE047308, 2021
Other experience and qualifications relevant to the proposed Project:

Haley is a water resources engineer and has a wide variety of experience in hydrologic and hydraulic studies from site-specific to watershed-wide projects for riverine studies as well as stormwater infrastructure analysis and design. She is an experienced user of HEC-HMS, HEC-RAS, PCSWMM, ArcGIS, and AutoCAD Civil 3D to support stormwater infrastructure assessments, design projects, and flood risk analyses throughout Georgia.

STORMWATER SYSTEM ANALYSIS PROGRAM, GWINNETT COUNTY, GA, ENGINEER

Haley has worked on four comprehensive watershed-wide stormwater system assessment programs (SSAPs) that include enhancing the existing stormwater inventory database to identify critical infrastructure, using systemwide PCSWMM hydrodynamic modeling to determine each pipe's existing capacity level of service, and determining necessary upgrades to meet the desired level of service and reduce flooding. These studies have included developing PCSWMM modeling for approximately 170 total miles of stormwater infrastructure, streams, and open channels and the development of a cost estimation decision support tool for daily operational decisions involving stormwater pipe rehabilitation and replacement. She has also overseen the updates for seven watershed-wide SSAPs, which included overseeing QA/QC efforts, staffing, and scheduling.

COMBINED SEWER SYSTEM ANALYSIS, CITY OF ALBANY, GA, ENGINEER

As part of the City of Albany's combined sewer system, storm drainage, and wastewater treatment plant capacity analysis, Haley assisted in the development of PCSWMM hydrodynamic modeling for the combined, stormwater, and sanitary systems for five drainage basins in the city. This analysis included using PCSWMM modeling to determine the existing capacity level of service of the combined sewer system and separated stormwater and sanitary pipes in order to form recommended upgrades to fully separate the stormwater and sanitary pipe systems. Additional activities included review of proposed stormwater design plans and creating PCSWMM models to analyze their impacts on the basin. This analysis also included cost estimation for proposed designs as well as strategic analysis of the proposed designs to assist the City in prioritizing their efforts.

GWINNETT COUNTY FLOODPLAIN MANAGEMENT SERVICES, GWINNETT COUNTY, GA, ENGINEER

Haley provides ongoing maintenance and support efforts for Gwinnett County's flood program including maintenance of the ArcHydro geodatabase, which integrates all of the county's updated hydrologic and hydraulic modeling as well as floodplain mapping for approximately 800 miles of streams. This ArcHydro geodatabase supports daily operation, planning, and development in Gwinnett while also providing a user-friendly way to store and maintain stormwater models and corresponding data. Additional responsibilities include Gwinnett County Flood Information Portal maintenance, updating floodplain mapping and models to incorporate new inventory and information, and assisting with maintenance of Gwinnett's bridge and culvert CIP database.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Matt Deshotel, EIT Staff Engineer
Project Assignment:
H/H Modeler
Name of Firm with which associated:
Dewberry Engineers Inc.
Years' experience with this Firm:
4
Education: Degree(s)/Year/Specialization:
MS, Civil Engineering/Hydrology, University of Louisiana, 2017 BS, Civil Engineering, University of Louisiana, 2015
Active registration: Year first registered/discipline:
Civil Engineering Intern, Louisiana, 41139, 2016
Other experience and qualifications relevant to the proposed Project:

Matt's practical and research experience includes conducting local to regional scale H&H simulations of varying complexities to support hindsight and predictive modeling efforts across the country. He is most experienced with the HEC suite of software for H&H numerical modeling, namely HEC-RAS and HEC-HMS. He has constructed and analyzed both 1D steady and 1D/2D unsteady HECRAS models and has experience developing, running, and calibrating HEC-HMS models for a number of hydrologic processes, objective functions, and optimization algorithms. He is proficient with Python, Matlab, ArcGIS, HEC-HMS, HEC-RAS, SRH-2D, SMS, PCSWMM, XPSWMM, and PeakFQ.

AMITE RIVER BASIN NUMERICAL MODEL, AMITE RIVER BASIN, LA, 2D HYDRAULIC MODELER
Development of a low and medium detail numerical model for Colyell Creek, Spiller's Creek, Beaver Creek, and Clayton Bayou sub basins. Tasks included development of terrain dataset and Manning's roughness coefficient datasets, 2D mesh creation including cell-size-refinement regions, breakline enforcement, and manual computation point adjustment for improved model stability; coding in of structures (bridges, culverts, weirs, etc.); optimization of model runtime-stability agreement through use of variable time step/ slicing and Courant's condition; model calibration and validation to observe high water marks from several historical events. Performed as part of a team developing a HUC8 scale numerical model of the Amite River Basin to assess hydrology, hydraulics, and consequences. Software included HEC-DSS, HEC-DSSVUE, HEC-HMS, HEC-RAS (1D/2D), and ArcGIS. Provided support in data collection, analysis, and development of the high detail main reaches of the Amite and Comite River HECRAS 1D/2D hydraulic model.

RED CHUTE LEVEE ANALYSIS AND MITIGATION, BOSSIER, LA, H&H ENGINEER
Assisted with reviewing a combined 1D/2D unsteady HEC-RAS model of Red Chute Bayou and providing feedback and recommendations for calibration and mitigation alternatives.

PROBABILISTIC FLOOD RISK ANALYSIS, SACRAMENTO, CA, HYDRAULIC MODELER/ ENGINEER
Part of a team that developed 2D HEC-RAS models covering more than 1,000 square miles and approximately 200 miles of levees in the Sacramento region which includes flooding from the American and Sacramento Rivers. The purpose of this model is to assess flood risk for structures within the incorporated areas due to overtopping or breaching of the levee and interior drainage. This was performed as part of FEMA's new Risk Rating 2.0 initiative which aims to overall the way FEMA rates insurance for at-risk structures by applying advanced monte-carlo approaches to assess risk and uncertainty.

CITY OF FORT WORTH CTP, FORT WORTH, TX, H&H MODELER
Developed Zone AE 1D steady state hydraulic models complete with floodplains, floodways, floodway data tables, and FIRM profile plots. This included developing models from scratch and leveraging several models provided by the City of Fort Worth and upgrading them to the latest FEMA specifications. Also played a part in reviewing hydrologic models both leveraged and new and assisted with packaging the data for deliverable in FEMA DCS.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Michael Kidane, PE, CFM Senior Engineer
Project Assignment:
H/H Modeler
Name of Firm with which associated:
Dewberry Engineers Inc.
Years' experience with this Firm:
15
Education: Degree(s)/Year/Specialization:
BS, Civil Engineering, San Diego State University, 2003
Active registration: Year first registered/discipline:
Professional Engineer, Georgia, 042990, 2018 Professional Engineer, California, 76407, 2010 Certified Floodplain Manager, US, US0904583/31174, 2009
Other experience and qualifications relevant to the proposed Project:

Michael has extensive experience in the field of water resources engineering. He has in-depth knowledge of ArcGIS based hydrology and hydraulics analyses and floodplain mapping using HEC-GeoHMS, HEC-GeoRAS, RAS mapper including modeling softwares such as HEC-HMS, HEC-RAS, XPSWMM, PCSWMM, FLO-2D, and PeakFQ. Michael also has experience with dam breach modeling, stormwater system analysis, and capital improvement projects.

HSDRRS MODELING AND MAPPING, MULTIPLE LOCATIONS, LA, H&H ENGINEER

FEMA tasked Dewberry with remapping of the FIRMs with updated information for Orleans, Plaquemines, and St. Bernard parishes inside the HSDRRS. Michael performed detailed hydrologic (HEC-HMS) and unsteady hydraulic modeling (HEC-RAS) of the interior drainage, interior levees, local projects, pump stations, and flood gate operations, along with extensive coordination with local governments, levee districts, and USACE. Dewberry also provided full preliminary and post-preliminary processing support.

RUSH CREEK WATERSHED STUDY, ARLINGTON, TX, H&H ENGINEER

The project involved development of unsteady HEC-RAS models and a dynamic 1D/2D coupled XP-SWMM model to determine existing and fully-developed volumes, velocities, and base flood elevations within the subwatersheds. The models were used to develop flood mitigation projects within the watershed to reduce flooding and erosion with consideration to improving water quality and maximizing City dollars through multi-benefit mitigation solutions.

SUWANEE CREEK SYSTEM LEVEL OF SERVICE ANALYSIS, GWINNETT COUNTY, GA, H&H ENGINEER

Developed a SWMM5 engine based hydrodynamic rainfall-runoff simulation model using PCSWMM for all scoped pipe segments and appurtenant ditch lines and natural channels in the selected watershed. H&H modeling was based on 12-hour storm duration, established as the design storm duration in the pilot project, using dynamic wave hydraulic model formulations. Once each of the rehabilitation and replacement model scenarios have been stabilized and finalized, the results for each of these tasks are then populated into a database for inclusion in GCSWM's SW System CIP Tool. The SW System CIP Tool has been designed to facilitate the cost estimation process by aggregating the specific data for each pipe and structure into an ArcGIS inventory and rehab/replacement database.

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT NEW WATERSHED, MULTIPLE LOCATIONS, FL, H&H ENGINEER

Develop regulatory and non-regulatory FEMA flood study products for the Apalachicola, Chipola, and New Watersheds under contract with Northwest Florida Water Management District (NWFWMD). The scope of work includes hydrology and hydraulic engineering updates to study areas in Calhoun, Gulf, and Franklin Counties. These studies include Detailed and Limited Detailed analysis based on 2-D modeling techniques, using XPSWMM. Dewberry is also responsible for updating

the regulatory FEMA products for Franklin and Gulf Counties, including Preliminary and Post Preliminary Map production. For Gulf and Franklin Counties, Dewberry will also be responsible for creating and/or updating Flood Risk Products, including Flood Risk Reports, Maps, and Databases.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Megan Hanifan, PE Project Manager
Project Assignment:
H/H Modeler
Name of Firm with which associated:
Dewberry Engineers Inc.
Years' experience with this Firm:
8
Education: Degree(s)/Year/Specialization:
MS, Civil Engineering, Georgia Institute of Technology, 2013 BS, Civil Engineering, University of Maryland, 2012
Active registration: Year first registered/discipline:
Professional Engineer, Georgia, PE042089, 2017 GSWCC Level II Certified Design Professional, Georgia, 0000086325
Other experience and qualifications relevant to the proposed Project:

Megan has a wide variety of experience in H&H studies, stormwater infrastructure modeling and design, and post-disaster damage assessments. She is an advanced modeler in HEC-HMS, HEC-RAS, and PCSWMM to support stormwater infrastructure assessments and design projects, flood risk analyses throughout Georgia, and dam safety initiatives. She also has project management experience in developing construction documents and specifications, cost estimates, utility coordination, and complying with local, state, and federal permitting requirements.

UPPER YELLOW STORMWATER ASSESSMENT, PHASE II, GWINNETT COUNTY, GA PROJECT ENGINEER

Developed PCSWMM modeling for approximately 60 miles of stormwater infrastructure and associated open channels for Gwinnett's SSAP Upper Yellow Phase II study. Tasks include hydrodynamic modeling to determine each pipe's existing level of service and necessary upgrades to meet the desired level of service and reduce flooding and development of a cost estimation decision support tool for daily operational decisions involving stormwater pipe rehabilitation and replacement.

ORION DRIVE CULVERT IMPROVEMENTS, DEKALB COUNTY, GA, PROJECT ENGINEER

Responsible for the design and development of construction plans for a culvert replacement project in DeKalb County to help reduce the frequency of flooding of several homes adjacent to the culvert. Conducted the detailed H&H modeling for the design and managed the development of the construction plans. Extensive utility coordination was required for this project to accommodate an existing gas main in the vicinity of the proposed culvert, in addition to sanitary sewer lines which contributed to additional site constraints. In addition to this utility coordination, permitting materials, cost estimates, and proposed easements were developed for the County.

WARREN DRIVE CULVERT REPLACEMENT, GWINNETT COUNTY, GA, PROJECT ENGINEER

Assisted with design and development of construction plans, specifications, and bid documents for the replacement of approximately 1,500 LF of existing 96-inch corrugated metal pipe drainage system with a reinforced concrete box culvert drainage system on new alignment. The proposed design stages construction to abandon, with flowable fill, the 96-inch corrugated metal pipe in place as the reinforced concrete box culvert drainage system is installed. Project includes a multi-stage approach to maintain access for businesses in the industrial area. Project also includes installation of approximately 450 LF appurtenant storm drainage systems, 5,500 LF water main, and 1,600 LF gravity sanitary sewer. Services also include utility coordination, permitting, property owner outreach, bid assistance, and engineer of record services during construction.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Elizabeth Angel, PE, CFM Project Engineer
Project Assignment:
H/H Modeler
Name of Firm with which associated:
Dewberry Engineers Inc.
Years' experience with this Firm:
3
Education: Degree(s)/Year/Specialization:
MS, Civil Engineering, Virginia Polytechnic Institute and State University, 2018 BS, Civil Engineering, Virginia Polytechnic Institute and State University, 2016
Active registration: Year first registered/discipline:
Professional Engineer, Georgia, PE048170, 2021 Certified Floodplain Manager, US, US-20-11717, 2020
Other experience and qualifications relevant to the proposed Project:
Elizabeth is a water resources engineer working primarily on H&H modeling for FEMA Region IV/VI CTP projects. She has also assisted with system-wide stormwater flooding and level of service analyses for Gwinnett County, Georgia, dam breach analyses for the Georgia Department of Natural Resources, and the STARRII Probabilistic Flood Risk Analysis project. She has experience using 1D and 2D HEC-RAS, HEC-HMS, ArcGIS, PCSWMM and numerical modeling in Python and R. Her graduate work at Virginia Tech focused on riverine and coastal hydrodynamics and sediment transport. **LA DOTD FEMA CTP PROGRAM, STATEWIDE, LA, PROJECT ENGINEER** Assisted with development of FIRM databases and organized small group using in-house tools for mapping production in Allen Parish. Developed and refined Limited Detail hydraulic analysis using HEC-RAS 1D for 177 miles of tributaries to the Comite River. **NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT CTP PROGRAM, 16 COASTAL COUNTIES, FL, PROJECT ENGINEER** Development of large-scale BLE analysis for the Escambia watershed in Santa Rosa and Escambia Counties using HEC-RAS 2D and HEC-HMS with Green & Ampt loss methodology. Gage frequency analysis using HEC-SSP. Significant contributions to development of 2D BLE modeling approach and guidelines. High-volume mapping production leveraging existing models for post-hurricane analysis. **SUWANNEE RIVER WATER MANAGEMENT DISTRICT CTP PROGRAM, MULTIPLE COUNTIES, FL, PROJECT ENGINEER** Developed H&H modeling for a 380 square mile study area encompassing tributaries of the Little Aucilla River and Aucilla River watersheds with nearly 1,200 subbasin hydrographs calculated in HEC-HMS using Green & Ampt loss methodology and Clark Unit Hydrograph transformation as inputs for medium-detail 2D HEC-RAS model. Assisted in development of 1D HEC-RAS Detail study for the Little Aucilla River. **GEORGIA DEPARTMENT OF NATURAL RESOURCES CTP, STATEWIDE, GA, PROJECT ENGINEER** Developed approximate hydraulic analysis for 173 miles of Zone A streams and detailed hydraulic analysis for 21 miles of Zone AE streams in Colquitt and Brooks Counties using HEC-RAS 1D. Utilized rural and urban/small regression equations for hydrologic analysis with gage-adjustment where applicable. Developed large-scale BLE analysis of the Aucilla River watershed using SCS Curve Number loss methodology in HEC-HMS coupled with a 2D rain-ongrid HEC-RAS 2D model. Assisted mapping production for Zone A, Zone AE, and BLE studies. Contributed to data collection and analysis for project scoping.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Rahul Parab, PE, D.WRE, CFM Senior Associate, Assistant Department Manager
Project Assignment:
H/H Modeler
Name of Firm with which associated:
Dewberry Engineers Inc.
Years' experience with this Firm:
8
Education: Degree(s)/Year/Specialization:
MS, Civil Engineering, University of Toledo, 2003 BS, Civil Engineering, University of Mumbai, 2001
Active registration: Year first registered/discipline:
Professional Engineer, Texas, 102310, 2008 Professional Engineer, New York, 093113-1, 2013 Certified Floodplain Manager, US, 10-05125, 2010 Diplomate, Water Resources Engineer, US, 00664, 2014 National Council of Examiners for Engineering and Surveying, New Jersey, 17-482-72, 2017
Other experience and qualifications relevant to the proposed Project:
Rahul has extensive water resources and construction engineering experience in flood control and storm-water systems, hydrologic and hydraulic modeling, water quality, water infrastructure, structure operations, Geographic Information Systems (GIS), environmental permitting, and FEMA LOMRs, FIS and RISKMAP studies. He has led projects for a range of clients from FEMA and U.S. Army Corps of Engineers to state and local governments. **CITYWIDE STORMWATER ENGINEERING AND ANALYSIS PLANNING, CITYWIDE, NY, PROJECT MANAGER** Responsible for the professional engineering services in support of a new initiative to accelerate stormwater mitigation engineering and to prepare a comprehensive stormwater Master Plan for four of DEP's 14 Wastewater Treatment Plants (WWTP's) that have a large component of separate storm sewers throughout the tributary boundary area. The four WWTP's are Oakwood Beach, Port Richmond, Hunts Point, and Tallman Island within which the Municipal Separate Storm Sewer System (MS4) are to be studied in detail to develop a forward-looking master stormwater management plan for design and construction in future. **RED HOOK INTEGRATED FLOOD PROTECTION SYSTEM FEASIBILITY STUDY, RED HOOK, NY, PROJECT MANAGER** Responsible for conducting a feasibility study that involved developing a comprehensive flood management system to reduce flood risks from coastal storm surge in the Red Hook community. The integrated flood protection systems consisted of a combination of permanent and long-term components (e.g., multipurpose berms, deployable flood walls, street elevations, landscape and drainage improvements). The feasibility study included design/engineering, technical/ physical, environmental, urban design, stakeholder engagement, infrastructure, regulatory, operation and maintenance, and benefit/cost considerations. **DESIGN OF INTEGRATED COASTAL FLOOD PROTECTION FOR LONG BEACH WWTP, LONG BEACH, NY, COASTAL ENGINEER** Responsible for evaluating appropriate design flood elevation with criteria from Code of Federal Register (CFR44 65.10).

Performed coastal wave overtopping calculations using Eurotop model; accounted for sea-level rise and developed a summary report detailed plans and specifications for the installation of approximately 2,300 linear feet of bulkhead along the immediate bayfront on the northern waterfront, and approximately 4,400 linear feet of a deployable flood barrier and/or permanent flood wall along the southern side of the City of Long Beach to protect the City's critical maintenance, water, wastewater and power facilities from storm related flooding similar to what occurred during Superstorm Sandy.

OAKWOOD BEACH FLOOD ATTENUATION FEASIBILITY STUDY AND DESIGN, STATEN ISLAND, NY, DEPUTY PROJECT MANAGER

Responsible for day-to-day project management activities, internal coordination with multi-disciplinary team of coastal, water resources, civil, geotechnical and environmental engineers; managing subconsultants; stakeholder coordination; reporting weekly updates and developing monthly progress reports; client presentations and other activities for the design of an integrated flood protection system consisting of rock revetment, floodwalls, tide gates and others to mitigate the coastal and rainfall flooding within the Oakwood Beach area. Tasks included developing hydrologic and hydraulic models, analyzing the flood protection system for climate change, developing cost estimates, and report writing.

REBUILD BY DESIGN HUDSON RIVER PROJECT, HOBOKEN, WEEHAWKEN & JERSEY CITY, NJ, DEPUTY PROJECT MANAGER

Deputy project manager and chief engineer responsible for feasibility assessment and preliminary design of the coastal flood risk reduction system and stormwater management system that would reduce flood risks from coastal storm surge and rainfall events in City of Hoboken and parts of Weehawken and Jersey City. Responsibility includes oversight on development of integrated coastal and stormwater models, integration of urban design and landscape architectural elements into engineering design of coastal flood risk reduction system consisting of flood walls, berms and gates closure structures, and multi-disciplinary team coordination covering all aspects of engineering, architecture, urban design, landscape architecture and environmental disciplines.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Assey Belay Staff Engineer
Project Assignment:
H/H Modeler
Name of Firm with which associated:
Dewberry Engineers Inc.
Years' experience with this Firm:
12
Education: Degree(s)/Year/Specialization:
BA, Civil Engineering, Syracuse University, 2008
Active registration: Year first registered/discipline:
N/A
Other experience and qualifications relevant to the proposed Project:
Assey's experience includes GIS based hydrologic and hydraulic analysis using HECHMS, HEC-RAS, and ArcGIS 10 for existing and future conditions hydrologic and hydraulic analysis and floodplain delineation/redelineation in various counties in the Metropolitan North Georgia Water Planning District, GA DNR CTP projects, and dam breach inundation modeling and mapping. Assey is also experienced in storm water modeling using GIS based analysis and hydrologic and hydraulic analysis using PCSWMM Professional 2D. **SUWANEE CREEK SYSTEM PHASE 1, GWINNETT COUNTY, GA, PROJECT ENGINEER** Assey used ArcGIS 10 to initially set up the working area and to clean up the initial data that was given to Dewberry from the County. After the cleanup, hydrologic and hydraulic analysis was performed using a combination of ArcGIS 10 and PCSWMM Professional 2D to analyze each pipe within the study area to determine the design capacity and level of service. Based on the level of service pipes were deemed fit or multiple rehabilitation replacement scenarios where performed for pipes that need to be upgraded. **ROSWELL FLOODPLAIN MAPPING, ROSWELL, GA, WATER RESOURCES ENGINEER** Assey initially performed GIS based hydrologic and hydraulic analysis using HEC-HMS, HEC-RAS, and ArcGIS 10 for existing and future conditions hydrologic and hydraulic analysis and floodplain delineation. The floodplains where used to perform a risk analysis for all buildings located in the mapped floodplain. Building risk analysis was done for lowest and highest elevation for the building. From this data the risk maps from raster grids where created to show risk areas. Dewberry performed floodplain modeling and mapping. In addition to floodplain mapping, Dewberry performed risk analysis for all buildings located in the mapped floodplain within the City of Roswell. Dewberry conducted a spatial analysis of the floodplains for the entire city and identified all visible structures located either partially or completely within the existing 100-year floodplain using the City of Roswell's aerial imagery. **CITY OF ALPHARETTA CAPITAL IMPROVEMENT PROJECTS, ALPHARETTA, GA, PROJECT ENGINEER** Assey used HEC-HMS, HEC-RAS, and ArcGIS 10 to perform hydrologic and hydraulic analysis to determine frequency of overtopping for 75 structures for the city of Alpharetta. After the hydrologic and hydraulic analysis was completed, the data was moved to a database in order to populate all necessary attributes to rank structures based on capital improvement. Dewberry developed CIPs for 75 City-maintained bridges and culverts. Dewberry reviewed all City-maintained bridges and culverts to determine the frequency of overtopping and ranked all structures based on frequency of flooding, road classification, structure condition, and alternate route availability. Concept level designs and cost estimates were developed for 10 CIPs.

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

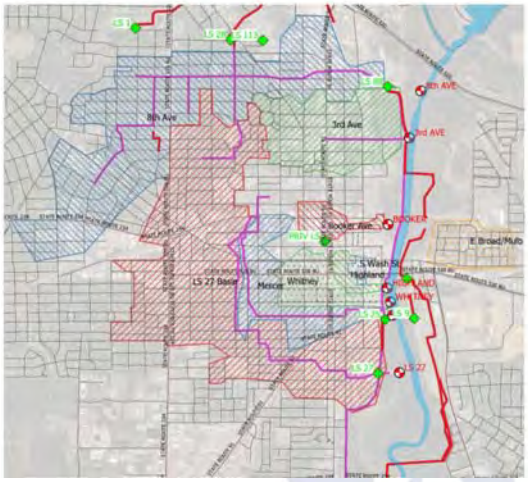
Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:
Stormwater System Analysis Program | Gwinnett County, GA Mr. Michael Williamson, PE Section Manager Gwinnett Co Dept of Water Resources 684 Winder Highway Lawrenceville, GA 30045 678.376.7153 michael.williamson@gwinnettcounty.com	Gwinnett County Department of Water Resources (GCDWR) launched a countywide stormwater master planning program to assess its stormwater pipe infrastructure system for each of its major watersheds. GCSWM spends approximately $15 million annually replacing and rehabilitating failed pipe infrastructure, much of which is corrugated steel pipe (CSP). In most cases the existing pipe's capacity level of service (LOS) or the upgrade needed to meet the desired LOS is unknown. GCDWR recognized the next step to enhance its active stormwater infrastructure asset management was to conduct a comprehensive system assessment to identify the capacity LOS of the county-maintained piped drainage system in order to better

plan system rehabilitation and replacement projects. Dewberry was selected to lead a pilot study in the Level Creek watershed that included over 24 miles of stormwater pipe infrastructure and 7 miles of open channels. To date under this program, Dewberry has completed twelve comprehensive watershed studies, which include over 2,000 miles of pipe system streams and open channels. Tasks include:

- Enhanced stormwater inventory geodatabase to include pipe inverts, structure depths, and rehabilitation/ replacement quantities;
- Assess construction work areas required for open trench pipe replacements to identify easement needs and conflicts;
- Established asset values properly accounting for appurtenant items;
- Watershed-wide dynamic rainfall-runoff modeling on a ESRI ArcGIS platform (PCSWMM) for all county-maintained stormwater pipe systems and appurtenant natural channels to assign pipe LOS;
- Scenario-based pipe rehabilitation and replacement modeling to achieve a desired LOS;
- Development of Capital Improvement Project cost estimation decision support and planning tool.

The aggregate result of these comprehensive system-wide analysis tasks is an stormwater master planning decision support tool. This tool allows daily operational decisions involving stormwater pipe rehabilitation and replacement to be made based on a comprehensive understanding of the existing capacity LOS, needed upgrades to meet the desired LOS, and associated costs

Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
Ongoing	$7,500,000.00	$7,500,000.00

PROJECT NO. 2	
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**
City of Albany Engineering Services (CSO/Storm Drainage/WWTP) | City of Albany, GA Bruce Maples Managing Director of Engineering & Planning 240 Pine Avenue, Suite 200 Albany, GA 31701 229.883.6955	Dewberry was a subconsultant to Constantine Engineering on the City of Albany Engineering Services project to model the stormwater, sanitary sewer, and combined sewer system infrastructure in the City of Albany's Combined Sewer Overflow (CSO) basins. Approximately 40% of the original CSO basin has been separated, and this project's purpose was to create proposed options to separate the remaining combined systems and address flooding issues. In order to develop design options for separating the stormwater and sanitary sewer systems and address frequent flooding concerns, an existing conditions hydrologic and hydraulic model was created to analyze pipe capacity levels of service. The existing system model was used to identify areas of localized flooding and areas where the stormwater and/or combined sewer system did not have the capacity to convey the 10YR storm event. This data was then used to create proposed models for separating the sanitary flows from the stormwater system and to recommend pipe upgrades for the proposed stormwater system to convey the 10YR event. These proposed options included pipe size increases as well as diverting flow to other systems to create the most cost-effective options for separating the sanitary and stormwater flows and to eliminate the CSOs. Using the proposed model, Dewberry categorized the proposed pipe upgrades and diversions into larger projects, determining which upgrades were recommended to be completed together. The City could then use these grouped projects to prioritize the order in which they were to be completed. Dewberry created cost estimates for each proposed upgrade project, providing a cost breakdown for the construction of each to further inform decision making.
 	

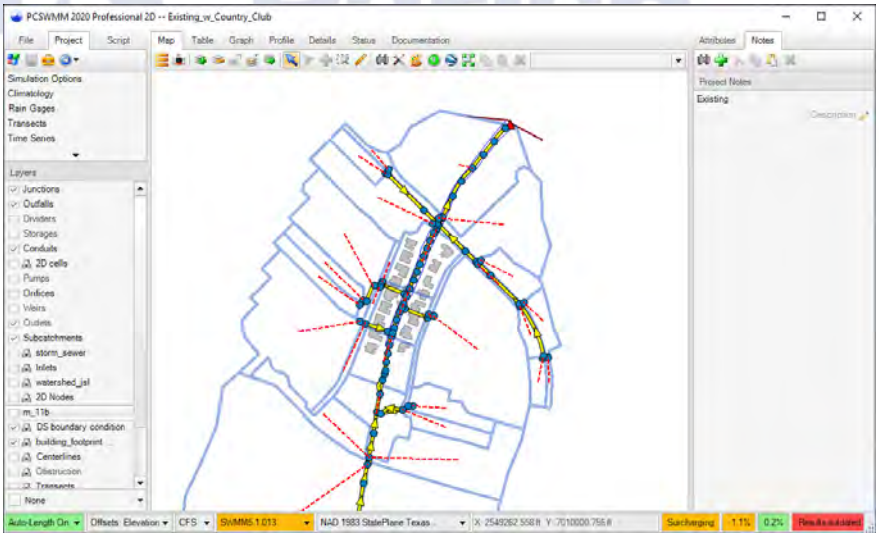
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2020	$320,210.00	$320,2010.00

PROJECT NO. 3

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:
City of Garland Stormwater System Analysis and Mitigation | Garland, TX Gimel Gimeno, PE City of Garland Engineering Department 800 Main St, Garland, TX 75040 (972) 205-3620	The City of Garland Engineering Department contracted with Dewberry to assess several stormwater drainage systems to determine capacity of existing conditions and provide mitigation concepts to alleviate flood prone areas. Many of the systems were constructed prior to current city design standards and do not provide adequate flood protection beyond a 10% annual chance storm event. These flood prone areas are smaller watersheds with undersized storm sewer inlets or storm

sewer conduits to drain intercepted runoff. Results indicate many local homeowners experience routine flooding sometimes on an annual basis. Dewberry was tasked with providing solutions that would balance the overall costs compared to existing property values and the resulting level of flood protection. These tasks included:

- Enhanced stormwater inventory geodatabase to include inlet and pipe characteristic, dimensions, and elevations;
- Collection of observed flooding data including home owner reports, historic rainfall records, highwater marks, electronic media, and city historic documentation;
- Watershed-wide dynamic rainfall-runoff modeling on a ESRI ArcGIS platform (PCSWMM) for project stormwater systems and appurtenant natural channels;
- Scenario-based system mitigation modeling to achieve a desired level of service (LOS);
- Development of Capital Improvement Project mitigation cost estimates and planning support data.



Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2022	$1,250,000.00	$1,250,000.00

PROJECT NO. 4

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:
Gwinnett Place Stormwater Management Improvements and Trail Design | Gwinnett County, GA Charles Crowell, Jr., PE, CPESC, CPSWQ, CFM Gwinnett County Department of Water Resources Stormwater Section Manager 684 Winder Hwy, Lawrenceville, GA 30045 678.376.4294	Stormwater Management is one of the primary concerns related to redevelopment of the Gwinnett Place Mall area. The current Gwinnett Place regional detention ponds do not meet current regulations for stormwater management. Any proposed redevelopment in the area is required to meet those standards, and there are concerns that those requirements will inhibit redevelopment and revitalization of the area. The project is to update the Gwinnett Place ponds to meet current stormwater management regulations for Channel Protection Volume (CPV), Overbank Flood Protection, and Extreme Flood Protection for the original stormwater management area in manner that is aesthetically pleasing and becomes a feature of Gwinnett Place. In addition to the stormwater management goals of this project, the ponds are being designed to integrate into the surrounding area and transform it into a usable and walkable asset for the community. The project includes a 1-mile trail system with multiple routes and numerous connection points to existing infrastructure to support alternative modes of transit with a focus on promoting a walkable community around Gwinnett Place. The project is currently in 60-pct design and is the design is scheduled to be completed in 2022. Market Street is being converted to pedestrian only in order to raise the embankment to provide additional storage volume needed in the ponds for stormwater management. The inclusion of a multi-use trail system with multiple routes, including Market Street, and numerous connection points will safely connect the various amenity spaces of the site while also providing vehicular access for maintenance and emergency purposes. Additionally, the multi-use trail will be designed to be constructed with porous asphalt in order to reduce the impervious footprint and be used as a green infrastructure measure that promotes runoff-reduction. 

Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2022	$ 310,243.96	$ 310,243.96

PROJECT NO. 5

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:
HSDRRS Modeling and Mapping | Multiple Locations, LA Gary Zimmerer, PE Deputy Director, Mitigation Division FEMA Region 6 800 North Loop 288, Denton, TX 76209 940.898.5161	In 2005 Hurricane Katrina resulted in devastating damage to the five Greater New Orleans area parishes – Jefferson, Orleans, Plaquemines, St. Bernard, and St. Charles. In 2008, the Federal Emergency Management Agency (FEMA) issued preliminary Flood Insurance Rate Maps (FIRMs) that reflected the flood hazard with the updated coastal analysis. The U.S. Army Corps of Engineers (USACE) was tasked with constructing a Hurricane Storm Damage Risk

Reduction System (HSDRRS) to defend against the 1-percent-annual-chance storm surge. The HSDRRS system was completed in 2011. FEMA tasked Dewberry with remapping of the FIRMs with updated information for Orleans, Plaquemines, and St. Bernard parishes inside the HSDRRS.

Dewberry performed detailed hydrologic (HEC-HMS) and unsteady hydraulic modeling (HEC-RAS) of the interior drainage, interior levees, local projects, pump stations, and flood gate operations, along with extensive coordination with local governments, levee districts, and USACE.

Dewberry also provided full preliminary and post-preliminary processing support. This support included: distributing the preliminary Flood Insurance Study (FIS) and FIRM panels to the communities; ensuring that all due processes (e.g., statutory 90-day appeal period) are provided; participating in the preliminary Consultation Coordination Offices (CCO) meetings to present the new FIRMs to the communities; Provisionally-Accredited Levee (PAL) processing and mapping; working with community officials and FEMA compliance staff to ensure that community floodplain ordinances are properly updated and adopted; reviewing and addressing all community and public comments received on the preliminary FIRMs; completing all necessary program administration paperwork and preparing and submitting the final package to the FEMA Map Service Center.

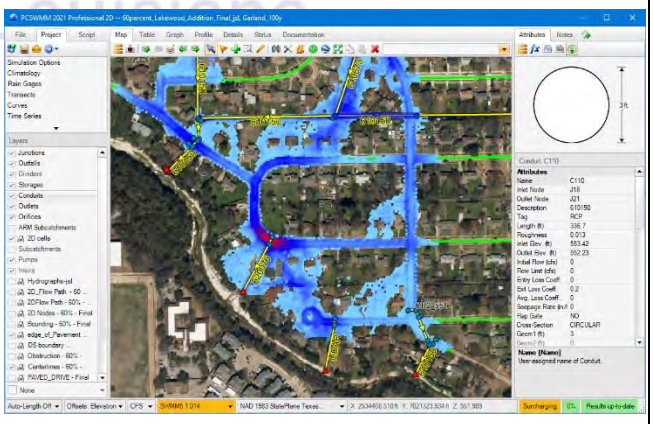
Dewberry expedited the analyses, flood risk review meetings, and preliminary issuance so that the updated flood hazard information may be utilized by the local parishes' governments, residents, businesses, and consultants in the rebuilding of the Greater New Orleans area. The scope of work included:

- Provided full preliminary and post-preliminary processing support
- Distribute the preliminary FIS and FIRM panels to the communities ensuring that all due processes (e.g., statutory 90-day appeal period) are provided; participating in the preliminary CCO meetings to present the new FIRMs to the communities
- Provided levee PAL processing and mapping; working with community officials and FEMA compliance staff to ensure that community floodplain ordinances are properly updated and adopted
- Review and address all community and public comments received on the preliminary FIRMs
- Completing all necessary program administration paperwork and preparing and submitting the final package to the FEMA Map Service Center

Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2016	$ 735,281.72	$ 735,281.72

PROJECT NO. 6

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:
City of Garland Stormwater System Analysis and Mitigation – Lakewood Addition | City of Garland, TX Mike Polcek Director of Engineering 800 Main Street, Garland, TX 75040 972.205.2178	The City of Garland Engineering Department contracted with Dewberry to assess several stormwater drainage systems in the Lakewood Addition Development to determine capacity of existing conditions and provide mitigation concepts to alleviate flood prone areas. Many of the systems were constructed prior to current city design standards and do not provide adequate flood protection beyond a 10% annual chance storm event. These flood prone areas are smaller watersheds with undersized storm sewer inlets or storm sewer conduits to drain intercepted runoff. Results indicate many local homeowners experience routine flooding sometimes on an annual basis. Dewberry was tasked with providing solutions that would balance the overall costs compared to existing property values and the resulting level of flood protection. These tasks included: • Enhanced stormwater inventory geodatabase to include inlet and pipe characteristic, dimensions, and elevations; • Collection of observed flooding data including homeowner reports, historic rainfall records, highwater marks, electronic media, and city historic documentation; • Watershed-wide dynamic rainfall-runoff modeling on an ESRI ArcGIS platform (PCSWMM) for project stormwater systems and appurtenant natural channels; • Scenario-based system mitigation modeling to achieve a desired level of service (LOS); • Development of Capital Improvement Project mitigation cost estimates and planning support data. A final drainage study report was submitted to city with four separate mitigation options where city staff evaluated and selected their preferred option for construction. Their selection was based on budgeted construction costs and feasibility. The most effective option proposed included the acquisition of several lots to construct a flood storage basin. This eliminated the significant cost for a complete overhaul of the existing storm drain conduits but was less feasible to buyout the existing homeowners. In addition to the stormwater improvements, city requested the design considerations for improvements to a local street without stormwater drainage and combine the improvements with water and wastewater line improvements in the vicinity.

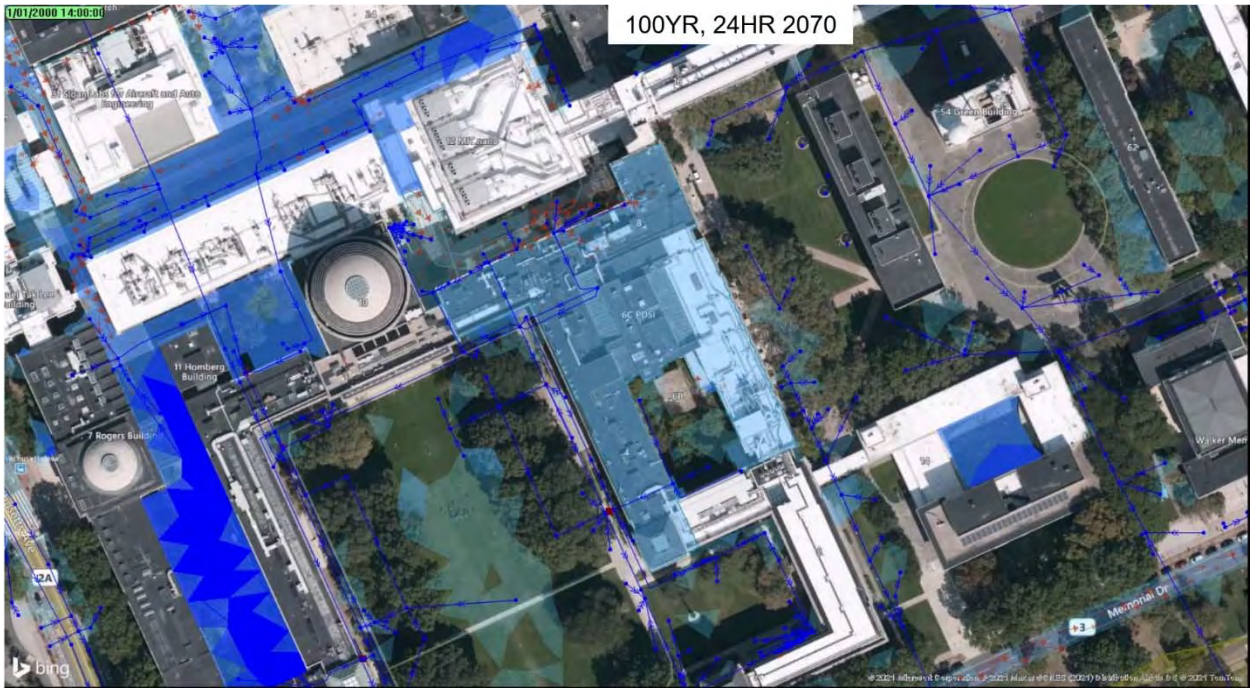


Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2021	$33,300	$33,300

PROJECT NO. 7

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:
Assessing Climate Change Induced Flood Risk of Underground Facilities in the MIT Campus | Cambridge, MA Brian Goldberg, LEED AP, AICP Assistant Director of MIT's Office of Sustainability 292 Main Street, E38-346Cambridge, MA 02142 617.715.4521	Developed overland H&H models in InfoWorks ICM and SWMM5 of MIT's stormwater infrastructure to simulate overland flow and flood inundation at multiple building basements with sensitive laboratory equipment. The system conditions model is composed of existing grey and green infrastructure, impervious surfaces (e.g., roadways, buildings), and infiltration areas (i.e., open spaces). The model contains detailed representation of basement footprints and access points for water into the buildings and

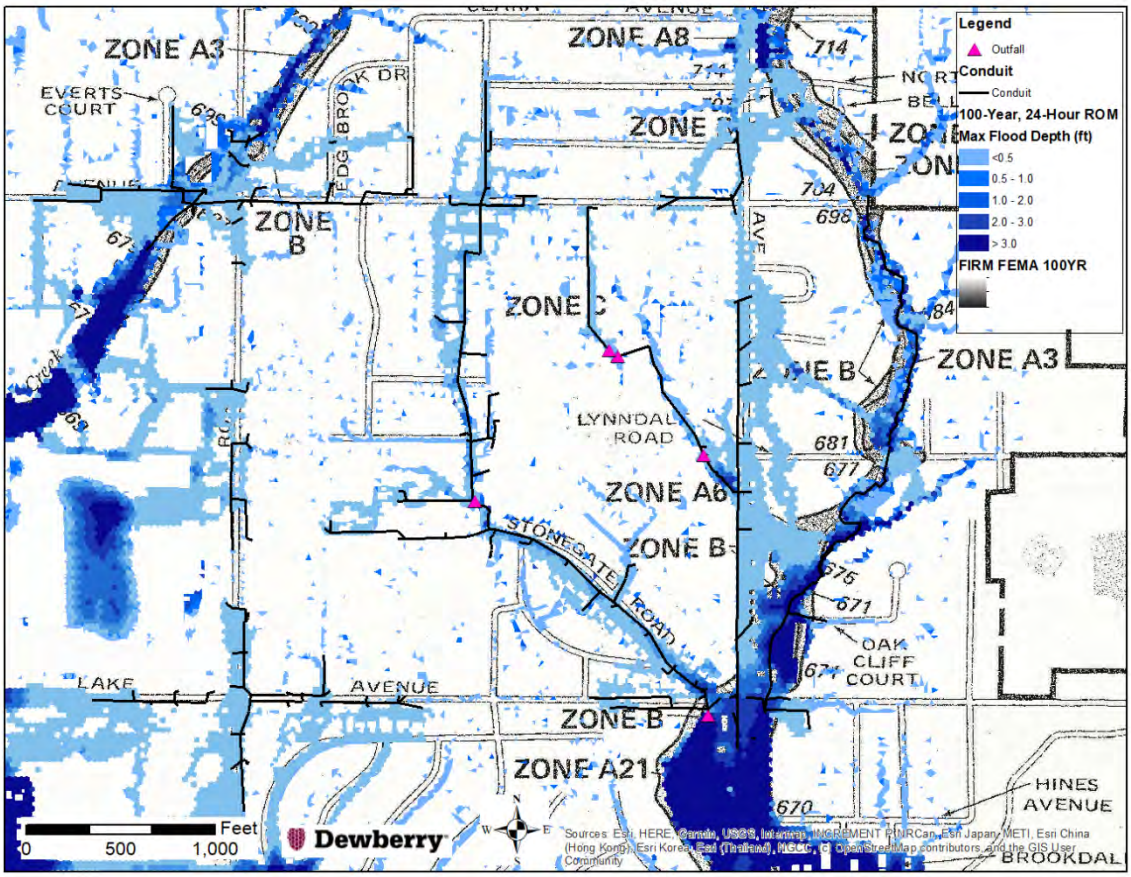
basements such as doorways and windows. A rain-on-mesh approach is used to simulated overland flow. The modeling analysis allowed the flood risk team to first, quantify basement flood elevation under present and future climate-change-driven precipitation, and second, to device basement flood countermeasures to minimize the potential damage of sensitive electrical equipment.



Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2021	$13,000	$13,000

PROJECT NO. 8

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:
Glencrest Subdivision Drainage Study | City of Peoria, IL Eric Hansen, PE Crawford, Murphy and Tilly, Inc. 2750 West Washington Street, Springfield, IL 62702 309.680.1301	Developed a detailed 2-dimensional hydrologic and hydraulic drainage model of the Glencrest Subdivision using PC-SWMM. This area experiences recurrent surface flooding negatively affecting households and commerce during heavy storm events. The model was used to evaluate potential surface flood mitigation upgrades needed to eliminate flooding during the 10-Year, 24-Hour design storm event. Recommended system upgrades consist primarily of pipe segment upsizing. An opinion of construction cost analysis of the proposed upgrades that included underground and surface capacity enhancements.



Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2022	$70,000	$70,000

PROJECT NO. 9	
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**
Rebuild By Design Hudson River Project | Hudson, NJ Dennis Reinknecht New Jersey Department of Environmental Protection 501 East State Street, Trenton, NJ 08625 609.292.1976	Dewberry, as prime consultant, partnered with the New Jersey Department of Environmental Protection to prepare a Feasibility Study and Environmental Impact Statement (EIS) for the Rebuild by Design Hudson River project. The project was comprehensive urban water strategy conceived to reduce coastal storm surge and rainfall flood risk in the City of Hoboken, as well as parts of Weehawken and Jersey City. The project involves these possible resilience measures:

- Hard infrastructure or coastal defense designed to enhance the community recreational and aesthetic experience (resist)
- Urban infrastructure to collect and slow rainwater runoff (delay)
- A circuit of interconnected grey/green infrastructure to store and direct excess rainwater (store)
- Water pumps and alternative routes to support drainage (discharge)

The Feasibility Study and EIS process emerged from initial concepts developed during the U.S. Department of Housing and Urban Development's (HUD's) Rebuild By Design (RBD) Competition. HUD created RBD in the summer of 2013 as a response to the impact of Superstorm Sandy on coastal communities. RBD aimed to develop ideas capable of dramatically improving the physical, ecological, and economic resilience of coastal areas. As one of the winning proposals, Rebuild By Design Hudson River received $230-million in funding. The EIS was conducted to satisfy the project's requirements to comply with the National Environmental Policy Act (NEPA).

Beginning with the ideas introduced during the competition, the Feasibility Study developed and investigated numerous concepts for flood risk reduction, constructability, viability, and built and natural environmental impacts in the context of an ongoing EIS effort. Urban planning and design were integral to concept development so that urban amenities and co-benefits could be realized as part of this significant investment. The concepts were narrowed to three build alternatives where further design factors such as coastal flood and rainfall modelling, utility impacts, subsurface soil conditions, right-of-way impacts, traffic/pedestrian flow, construction cost, and benefit cost analysis were evaluated against a no-build alternative. We studied air quality, noise, cultural resources, environmental justice, and construction impacts in detail to develop and recommend mitigation strategies that address constructing this project in a constrained urban setting.

The NEPA process included intense public and stakeholder engagement including more than 50 small group meetings, workshops, and stakeholder engagement and public meetings over 18 months. The process culminated in the selection of a preferred alternative that best addressed the project's purpose and need and gained community and stakeholder acceptance. A Record of Decision was issued in September 2017. HUD released $230-million in project funding in October 2017 to move the project into the next phase of design and construction. The NJDEP was charged with planning, designing, and constructing this project, as part of the State of New Jersey's Superstorm Sandy recovery and resilience efforts.

Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2019	$8,672,557.63	$8,672,557.63

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	n/a	n/a
2.		
3.		
4.		

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

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

Signature: _____ **Print Name:** Jerri Daniels

Title: Associate Vice President **Date:** March 22, 2022

Drainage Master Plan for the East Bank of Jefferson Parish

SOQ 22-014 - Resolution No. 138896

March 24, 2022

TEC Professional Services Questionnaire

A. Project Name and Advertisement Resolution Number:

Professional Engineering and Supplemental Services for a Drainage Master Plan for the East Bank of Jefferson Parish (Surveying Services)
Resolution No. 138896
SOQ 22-014

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

LINFIELD, HUNTER & JUNIUS, INC.
3608 18th Street, Suite 200
Metairie, LA 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:

Nathan J. Junius, P.E., P.L.S., President
Linfield, Hunter & Junius, Inc.
3608 18th Street, Suite 200
Metairie, LA 70002
504-833-5300 504-833-5350 fax
njunius@LHJunius.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.

Nathan J. Junius, P.E., P.L.S., President
Linfield, Hunter & Junius, Inc.
3608 18th Street, Suite 200
Metairie, LA 70002
504-833-5300 504-833-5350 fax
njunius@LHJunius.com

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

5	Administrative	__	Estimators	__	Specification Writers
1	Architects (Licensed)	__	Geologists	4	Structural Engineers
__	Chemical Engineers	__	Geotechnical Engineers	__	Graduate Engineers
6	Civil Engineers (Licensed)	__	Interior Designers	__	Project Managers
5	Construction Inspectors	__	Landscape Architects	1	Clerical
__	Ecologists	5	Land Surveyor	__	Grant/Funding Specialist
__	Electrical Engineers	__	Mechanical Engineers	__	Sanitary Engineers
4	Engineer Intern	__	Environmental Engineers	3	CADD Drafters
2	Professional Land Surveyors	1	Architect Intern	37	TOTAL

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

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

TEC Professional Services Questionnaire

G. If submittal is by JOINT-VENTURE, list the firms participating and outline specific areas of responsibility (including administrative, technical, and financial) for each firm. Please attach additional pages if necessary.
1. N/A
2.

H. Has this JOINT-VENTURE previously worked together? Please check:
YES ☐ **NO** ☐ **N/A**

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

Name & Address:	Specialty:	Worked with Firm 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:
10

Staffing Plan – A Diagram showing all key personnel that would be available for assignment. The Staffing Plan should also include the same information for sub-consultants (if applicable).

LINFIELD, HUNTER & JUNIUS, INC.
STAFFING PLAN

Jefferson Parish
State of Louisiana

Professional Engineering and Supplemental Services for a Drainage Master Plan for the East Bank of Jefferson Parish
SOQ No. 22-014
Resolution No. 138896

Prime

DESIGN ENGINEERING, INC.

Subconsultant

LINFIELD, HUNTER & JUNIUS, INC.
PROFESSIONAL ENGINEERS, ARCHITECTS AND SURVEYORS

Nathan J. Junius, P.E., P.L.S.
Project Manager / Surveying

Land Surveying

William J. Muller, P.L.S.
Senior Land Surveyor / Land Surveying Team Leader

Daniel D. Bindewald
Survey Party Chief

Paul H. Morales, IV
Survey Party Chief

Vincent J. Leco,III, E.I.
Survey Crew

Cooper G. Ashworth, E.I.
Survey Crew

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:

Nathan J. Junius, P.E., P.L.S., PTOE, President, Senior Civil Engineer

Project Assignment:

Civil Engineer/ Professional Land Surveyor

Name of Firm with which associated:

LINFIELD, HUNTER & JUNIUS, INC.

Years' experience with this Firm:

20 Years

Education: Degree(s)/Year Specialization:

Tulane University / 2001 / B.S. / Civil Engineering
University of Texas / 2002 / M.S. / Civil Engineering

Active registration: Year first registered/discipline:

2002 / Civil / LA License No. PE.0031843
2005 / Land Surveying / LA License No. PLS.0004958

Other experience and qualifications relevant to the proposed Project:

Junius attended Tulane University from 1997-2001. After Graduating in May of 2001, Junius attended the University of Texas at Austin where he graduated with a MS degree in Civil Engineering in August of 2002 with an emphasis in Water Resource.

Junius has over 18 years of project management, engineering design and construction management experience, with specialized expertise in the planning, permitting, design and construction management for a diverse range of public and private sector projects. Civil projects include major drainage canals, site developments, of streets, wastewater treatment plants, sewage collections systems, sewer force mains and waterline distribution miles projects. He has also served as an expert in disputes involving drainage and land surveying.

Mr. Junius also completed additional classes in the Nicholls State University Geomatics curriculum to further his land surveying knowledge. One of his largest surveying projects includes the hydrographic and topographic surveying for the Inner Harbor Navigation Canal (IHNC) Lake Borgne Surge Barrier which included over a mile and half of hydrographic surveying through the marsh including topographic surveying for two gates. Mr. Junius has been responsible for survey operations and daily direction of the survey crew. He was also responsible for the QA/QC of multibeam deliverables. Mr. Junius has provided virtual reference

Nathan J. Junius, P.E., P.L.S., PTOE, President, Senior Civil Engineer Resume
Project Assignment – Civil Engineer/ Professional Land Surveyor

station (VRS)/ real time kinematic (RTK) surveys and 3rd Order Levels for Control as well as hydrographic multibeam surveys. Mr. Junius is proficient with Leica Dual Frequency RTK Rovers, Leica DNA03 Digital Auto Level, Leica GPS Base Station, G-882 Magnetometer Leica Total Robotic Total Station, Leica Geo Office, Carlson Survey/Civil Software, Autocad 2016 and Civil 3D.

Junius has conducted numerous boundary, topographic, resubdivision surveys, route surveys, ALTA surveys, hydrographic surveys, utility surveys throughout Louisiana, Mississippi and Texas.

RELEVANT EXPERIENCE:

QA/QC of multibeam deliverables. Mr. Junius has provided virtual reference station (VRS)/ real time kinematic (RTK) surveys and 3rd Order Levels for Control as well as hydrographic multibeam surveys. Mr. Junius is proficient with Leica Dual Frequency RTK Rovers, Leica DNA03 Digital Auto Level, Leica GPS Base Station, G-882 Magnetometer Leica Total Robotic Total Station, Leica Geo Office, Carlson Survey/Civil Software, Autocad 2016 and Civil 3D.

Junius has conducted numerous boundary, topographic, resubdivision surveys, route surveys, ALTA surveys, hydrographic surveys, utility surveys throughout Louisiana, Mississippi and Texas.

Recent engineering and surveying projects include:

- Reserve Grain Elevator – St. John the Baptist Parish, LA
- Avondale Marine Facility – Jefferson Parish, LA
- Building 76 Reroof
- Pepsi CRC Roof Replacement
- MSY Airport Expansion – Kenner, LA
- PLD Administrative Complex – St. James Parish, LA
- Okonite Building – St. Charles Parish, LA
- Kenner 2030 Program – Kenner, LA
- MS. River to Lake Pontchartrain Bike Path and Bridge – JP, LA
- SLFPA-East Levee Lifts – Jefferson Parish, LA
- St. John Airport Hangar and Terminal Design – St. John Parish, LA
- Jesuit Bend Mitigation Bank – Plaquemines Parish, LA
- GIWW to Clovelly Hydrologic Restoration – Lafourche Parish, LA
- LPC 20.2 Foreshore Protection – Jefferson Parish, LA
- Grand About Vegetative Ridge Restoration – Plaquemines Parish, LA
- Saltwater Sill LaBranche Wetlands – St. Charles Parish, LA
- Pipeline Survey – Mississippi River Entergy Site – St. Francisville, LA
- Elevation Assistance Program – St. John the Baptist Parish, LA
- Algiers Lock Forebay Water Line Crossing – Orleans Parish, LA
- Levee Centerline and Cross Section Survey – LPV 109.02a from south of I-10 to CSX Tracks – Orleans Parish, LA
- Mississippi River Ventures Aggregate Yard – St. Charles Parish, LA

President, ACEC New Orleans Branch
Member of American Congress of Surveying and Mapping
Member of Louisiana Society of Professional Land Surveyors
Member of the New Orleans Chapter ASCE, Past President
Past President APWA
Member SAME
Member LES

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

William J. Muller, P.L.S., Registered Land Surveyor

Project Assignment:

Senior Land Surveyor / Land Surveying Team Leader

Name of Firm with which associated:

LINFIELD, HUNTER & JUNIUS, INC.

Years' experience with this Firm:

16 Years

Education: Degree(s)/Year Specialization:

Southeastern Louisiana University / 1954

Active registration: Year first registered/discipline:

1995 / Land Surveying / LA License No. PLS. 0004756

Other experience and qualifications relevant to the proposed Project:

Muller has extensive experience in all aspects of land surveying throughout Louisiana. He was technical manager for the largest land survey firm in Southeast Louisiana for many years. Prior to that he worked in the offshore industry spotting well locations, run field crews for numerous Louisiana Power and Light topographic and boundary surveys, analyzed thousands of boundary surveys, and supervised multiple field crews, draftsmen and land surveys.

Following is a small sampling of Muller's experience:

- I-10 Metairie - Causeway to Orleans Parish Line - Topo & Right-of-Way
- I-10 Metairie - Clearview to Causeway - Topo
- I-10 Metairie - Veterans Memorial Blvd. to Clearview - Topo
- I-10 Kenner - Williams Blvd. Interchange - Topo & Right-of-Way
- US 190 - Mandeville - Causeway to State Park - Topo & Right-of-Way
- US 190 - Slidell - Fremaux Interchange - Topo & Right-of-Way
- US 190 - Slidell - Fremaux- 9th to I-10 - Topo & Right-of-Way
- I-10 Slidell - LA 433 to US 190 - Topo
- US 190 Slidell - US 11 to Thompson Rd. - Topo & Right-of-Way
- St. Tammany Parish East of Abita Springs - New Highway from LA 36 to LA 435 - Topo & Right-of-Way

TEC Professional Services Questionnaire

William J. Muller, P.L.S., Registered Land Surveyor **Resume**
Project Assignment – Senior Land Surveyor / Land Surveying Team Leader

- LA 611 - Metairie Road - Topo & Right-of-Way
- I-10 New Orleans - S. Broad to St. Charles - Topo
- LA 3139 Earhart Blvd. - Jefferson/Orleans Parish Line to Clara St. - Topo & Right-of-Way
- Lakes Charles - McNeese/Airport - Right-of-Way

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Daniel D. Bindewald, Survey Party Chief

Project Assignment:

Survey Party Chief

Name of Firm with which associated:

LINFIELD, HUNTER & JUNIUS, INC.

Years' experience with this Firm:

13 Years

Education: Degree(s)/Year Specialization:

Southeastern Louisiana University / B.A. / Criminal Justice

Active registration: Year first registered/discipline:

N/A

Other experience and qualifications relevant to the proposed Project:

Bindewald has served as a survey crew member and more recently as a survey party chief on numerous projects.

Bindewald initially joined LH&J as a survey party crew member and began performing as the **crew chief** of LH&J's Survey Party Team 2 in 2009. Bindewald is proficient in the use of modern GPS/RTK survey instruments, as well as conventional total stations and levels. He is experienced in performing land surveys in all types of environments, including urban, forests and marshes. Bindewald has led survey crews conducting boundary, topographic and hydrographic surveys in Louisiana, Texas and Mississippi. He is knowledgeable of the USACE New Orleans District Minimum Survey Standards Edition 4.1, February 2015, (as well as prior editions) and has a high level of experience and expertise ensuring that all survey work performed by LH&J for the USACE New Orleans district is performed in strict compliance with these standards.

DESIRE NEIGHBORHOOD TOPOGRAPHIC AND SUBSURFACE SURVEY, NEW ORLEANS, LA

LH&J provided topographic surveying services for the project that consisted of the patching and reconstruction of 20,285 linear feet of roadway across 39 blocks, construction of new concrete roadway, replacement of the storm drainage system, sewer lines and water mains. Role: Survey Party

Daniel D. Bindewald, Survey Party Chief **Resume**
Project Assignment – Survey Party Chief

INNER HARBOR NAVIGATION CANAL SURGE PROTECTION BARRIER, ORLEANS PARISH, LOUISIANA

Provided surveying services including locating borings in the field and providing elevations with latitude and longitude coordinates. Located the USACE baselines and tied into the project control to provide station and offset data. Benchmarks were occupied and set for project control. Existing and final cross sections were taken providing cut/fill quantities, station and offset data for 36" diameter pipe piles were provided for QA/QC measures. Bindewald was the GPS survey party crew chief responsible for the accurate collection of all field survey data and reviewed the developed survey files and drawings for consistency with USACE New Orleans District Minimum Survey Standards. Construction cost was in excess of $1.5 billion.

STORM PROOFING ORLEANS PARISH DRAINAGE PUMP STATIONS, NEW ORLEANS, LA

Provided topographic surveys of 18 existing pump station sites for the project. Baselines and benchmarks were established to obtain elevations and latitude/longitude data. Utilities were located and related to the baselines using station/offset data, right-of-way maps were provided to the USACE for project design. Bindewald was the GPS Survey party crew chief responsible for the accurate collection of all field survey data and reviewed the developed survey files and drawings for consistency with USACE New Orleans District Minimum Survey Standards. Program Cost was approximately $200 million.

PREPARATION OF PLANS AND SPECIFICATIONS FOR THE HURRICANE PROTECTION SYSTEM AT WEST BANK NON-FEDERAL LEVEE NOV-NF-W-04 OAKVILLE TO LAREUSSITE IN PLAQUEMINES PARISH, LA

During the design of this 8.3 mile levee and fronting protection project, Bindewald was the GPS survey party crew chief responsible for performing the supplemental surveys that were needed to complement the Government furnished survey information. Detailed topographic surveys were performed using GPS/RTK equipment at the Ollie Pump Station and at the interface with the adjacent WBV-09a floodwall. Hydrographic surveys were performed to collect bathymetric data for a number of canals and bodies of water that are immediately adjacent to the levee alignment. All elevation data was collected using the North American Vertical Datum (N.A.V.D. 88) (2004.65) and all X-Y coordinates were based upon the Louisiana State Plane Coordinate System, South Zone NAD 83, in U.S. survey feet. During the construction of the project, Bindewald was the GPS survey party chief responsible for field locating the locations for installing 30 temporary bench marks (TBMs) that were supported by 60-foot deep concrete filled boreholes. After construction of the TBMs he performed high precision ± 1.5 mm leveling surveys to tie the TBMs into the required vertical and horizontal datums. He also field located the installation locations for 34 geotechnical instrumentation clusters and monitoring panels that are used to measure settlement during the first stage of the levee construction and then surveyed the precise elevation and location for each instrument after they were installed. As part of the settlement monitoring program, every two weeks Bindewald leads a survey crew that performs high precision elevation surveys of each of the 34 settlement plates and monitoring panels so that surveyed data can be correlated to the remotely monitored settlement gauges. Construction cost of the project is approximately $45 million.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Paul H. Morales, IV, Survey Party Chief

Project Assignment:

Survey Party Chief

Name of Firm with which associated:

LINFIELD, HUNTER & JUNIUS, INC.

Years' experience with this Firm:

9 Years

Education: Degree(s)/Year Specialization:

University of New Orleans / B.S. / 2005 / Civil Engineering

Active registration: Year first registered/discipline:

N/A

Other experience and qualifications relevant to the proposed Project:

Morales has both civil engineering design experience and resident inspection experience. During two summers while still in college, he often served as an LH&J survey crew member. He was a design engineer for civil site work on numerous CVS/Pharmacy and Dollar General store sites. Large Scale Topographical and ALTA Surveys for U.S. Army Corps of Engineers, Plaquemines Parish Government and a major pharmacy chain. Elevation, Construction Layout and Pile Layout, GPS, Robotics, Total Station experience including data transfer, plotting and printing. Manual and Mechanical Traffic Counts. TWIC

RELEVANT EXPERIENCE:

DESIRE NEIGHBORHOOD TOPOGRAPHIC AND SUBSURFACE SURVEY, NEW ORLEANS, LA

LH&J provided topographic surveying services for the project that consisted of the patching and reconstruction of 20,285 linear feet of roadway across 39 blocks, construction of new concrete roadway, replacement of the storm drainage system, sewer lines and water mains. Role: Survey Party

INNER HARBOR NAVIGATION CANAL SURGE PROTECTION BARRIER, ORLEANS PARISH, LA

Provided surveying services including locating borings in the field and providing elevations with latitude and longitude coordinates. The USACE baselines were located and tied into the project control to provide station and offset data. Benchmarks were occupied and set for project control. Existing and final cross sections were taken providing cut/fill quantities, station and offset data for 36-inch diameter pipe piles were provided for QA/QC measures. Morales performed as a survey party technician for the accurate collection of all field survey data and reviewed the developed survey files and drawings for consistency with New Orleans District Minimum Survey Standards. Construction cost >$1.5B

TEC Professional Services Questionnaire

Paul H. Morales, IV
Project Assignment – Survey Party Chief

HSDRRS LEVEE PROFILES FOR SOUTHEAST LOUISIANA FLOOD PROTECTION AUTHORITY – EAST – LAKE PONTCHARTRAIN LEVEE SYSTEM
Approximately 63 miles of earthen levee centerline profile surveys in Jefferson, Orleans and St. Bernard Parish using tilt rover and base stations. Project compared the existing profile elevations to the design profile elevations.

SOUTHSHORE HARBOR, NEW ORLEANS, LA
Hydrographic survey of approximately 150 acres in Southshore Harbor including portions of the navigation channel and Lake Pontchartrain. Included cross sections and profiles of approximately 10 acres of the north peninsula floodwall for a potential dredge spoil area.

AVONDALE SHIPYARD REDEVELOPMENT, AVONDALE, LA
Hydrographic surveys for 2 miles of the Mississippi River in front of the existing docks. USACE Baseline profile surveys and cross sections. Included batture surveys and topographic surveys of existing lay down areas.

MAGAZINE STREET TOPOGRAPHIC SURVEY, NEW ORLEANS, LA
LH&J provided topographic surveying services for the project that consisted of the reconstruction of 12,500 linear feet of 35' wide roadway, including removal of over 18,720 linear feet of streetcar tracks that are buried under Magazine Street, construction of new concrete roadway, replacement of the storm drainage system, sewer lines and water mains. Role: Survey Party

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Vincent J. Leco, III, E.I., Survey Party

Project Assignment:

Survey Party

Name of Firm with which associated:

LINFIELD, HUNTER & JUNIUS, INC.

Years' experience with this Firm:

2 Year

Education: Degree(s)/Year Specialization:

University of New Orleans - B.S. / 2018 / Civil Engineering

Active registration: Year first registered/discipline:

Civil / LA License / EI. 0034160

Other experience and qualifications relevant to the proposed Project:

RELEVANT EXPERIENCE:

DESIRE STREET NEIGHBORHOOD SURVEY, NEW ORLEANS, LA
Assisted in drafting the approximately 21,000 LF Desire Neighborhood Survey. This survey included identifying topographic and underground utility features. This survey was assigned for future street, subsurface drainage and underground utility improvements for the Desire Neighborhood in New Orleans, LA.

SELA 72.2 SURVEY, NEW ORLEANS, LA
Assisted in constructing the Limits of Construction and Utility Disposition Plans along General De Gaulle Dr. for the Southeast Louisiana Urban Flood Damage Reduction Project (SELA 72.2) in New Orleans, LA.

HAYNE BOULEVARD RELIEF WELL DRAINAGE, NEW ORLEANS, LA
Assisted in drafting the survey for the Hayne Boulevard relief well system. This survey was assigned to locate relief well structures and to identify the current drainage system for future drainage improvements along Hayne Blvd. in New Orleans, LA.

GEISENHEIMER CANAL IMPROVEMENTS, METAIRIE, LA
Assisted project engineer in design of a 8'X12' box culvert paralleling existing Geisenheimer drainage canal over a distance of approximately 2,800 linear feet. Box culvert is structurally integrated with existing drain lines at three junction box tie-in locations.

TEC Professional Services Questionnaire

Vincent J. Leco, E.I.
Project Assignment – Survey Party

LOUMOR OUTFALL DITCH IMPROVEMENTS, METAIRIE, LA
Assisted project engineer in design of two (2) new underground drainage lines. One drainage line consist of 78" X 122" Reinforced Concrete Pipe Arch (RCPA) segments along the existing drain line identified as Loumor Ditch combining to approximately 1,300 linear feet. The second line consists of a 9'X6' box culvert spanning approximately 320 linear feet. These new segments will tie-into the existing below-grade Geisenheimer Canal box culvert that extends along Airline Drive.

MAGAZINE STREET RECONSTRUCTION (LEAKE AVENUE TO EAST DRIVE), NEW ORLEANS, LA
Assisted project engineer in reconstruction of Magazine Street from Leake Avenue to East Drive. The reconstruction includes regrading, new striping, adjustment of utility manholes where applicable, removal & replacement of roadways and sidewalks, and installation of ADA ramps.

MAF BUILDING 103 DRAINAGE STUDY, NEW ORLEANS, LA
Assisted project engineer in analyzing hydraulics of the roof drainage system for Building 103 Michoud Assembly Facility including the subsurface drainage under the building and extending to the pumped outfall canal and to recommend improvements to reduce ponding on the approximate 38 acre building roof.

PEPSI BUIDING CONCRETE REPAIRS, RESERVE, LA
Resident Inspector for various concrete repairs to the 150,000 SF warehouse building for the Port of South Louisiana.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Cooper G. Ashworth, E.I., Survey Party

Project Assignment:

Survey Party

Name of Firm with which associated:

LINFIELD, HUNTER & JUNIUS, INC.

Years' experience with this Firm:

1 Year

Education: Degree(s)/Year Specialization:

Louisiana State University/B.S./2021/Civil Engineering
FAA Certified Remote Pilot License/2021

Active registration: Year first registered/discipline:

2021 / Civil / LA License / EI.0034948

Other experience and qualifications relevant to the proposed Project:

RELEVANT EXPERIENCE:

ST. JAMES SOLAR, VACHERIE LA, ST. JACQUES SOLAR, VACHERIE LA, AND SUNLIGHT ROAD SOLAR, FRANKLINTON, LA
LH&J was responsible for conducting topographic and boundary surveys for 4,500 acre solar farm facility in Vacherie and Franklinton, LA. The projects consisted of surveying both through traditional surveying and by utilizing Lidar scanning technology. The project fee was over $250,000.00.

Determined site boundaries, provided contours and, collected georeferenced aerial imagery to provide a construction progress exhibit to the client, collected georeferenced aerial imagery to assist in the development of servitudes and parcels of land.

RENE INDUSTRIES SAND PIT, DARROW, LA
LH&J provided land surveying in conjunction with the permitting of levee crossings and a sand pit on the batture. The project was permitted through CPRA, PLD and LADNR through the use of a Joint Permit Application.

FRANCE ROAD YARD SURVEY, NEW ORLEANS, LA
Approximately 20 acre survey for the NOPBRR for the expansion of a railyard. Included topographic survey, hydrographic surveying of the industrial canal, aerial imagery and survey baseline control.

ORPHEUM AVENUE, NEW ORLEANS, LA
Topographic Survey Drafting, Drone Surveying, Photogrammetry

XPLORE CREDIT UNION, METAIRIE, LA
Boundary Survey Drafting

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.

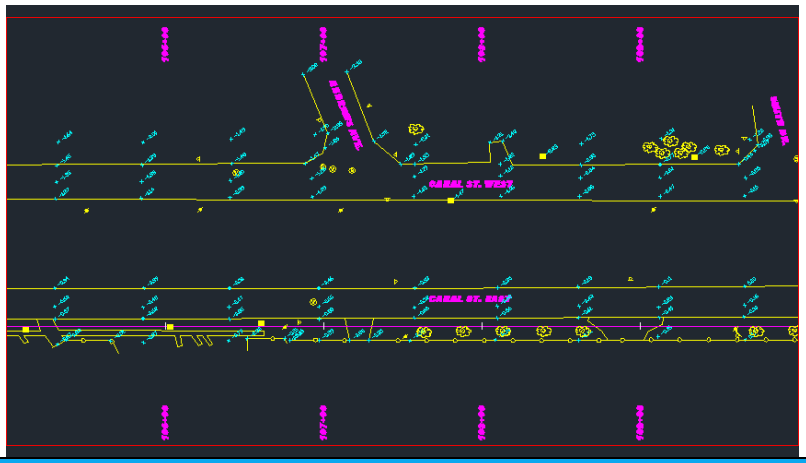
PROJECT NO. 1

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:
Canal Street Roadway Improvements Topographic Survey **Jefferson Parish** **Department of Capital Projects** **1221 Elmwood Park Blvd., Suite 906** **Jefferson, LA 70123** **Neil D. Schneider, CCM, P.E.** **(504) 736-6833**	Linfield, Hunter & Junius, Inc. provided topographic surveying for Canal St. Roadway Improvements between the I-10 Service Rd. and the 17th Street Canal. The survey was used as the basis for the roadway improvements design.

Key Relevant Features

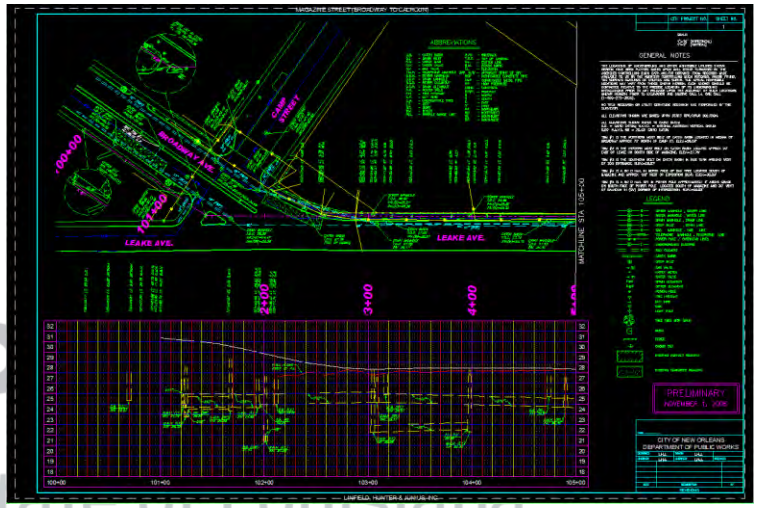
- ✓ **Jefferson Parish Project**
- ✓ **Topographic Survey**
- ✓ **Differential Level for Project Benchmarks**
- ✓ **Baseline Establishment**

Jefferson Parish
State of Louisiana

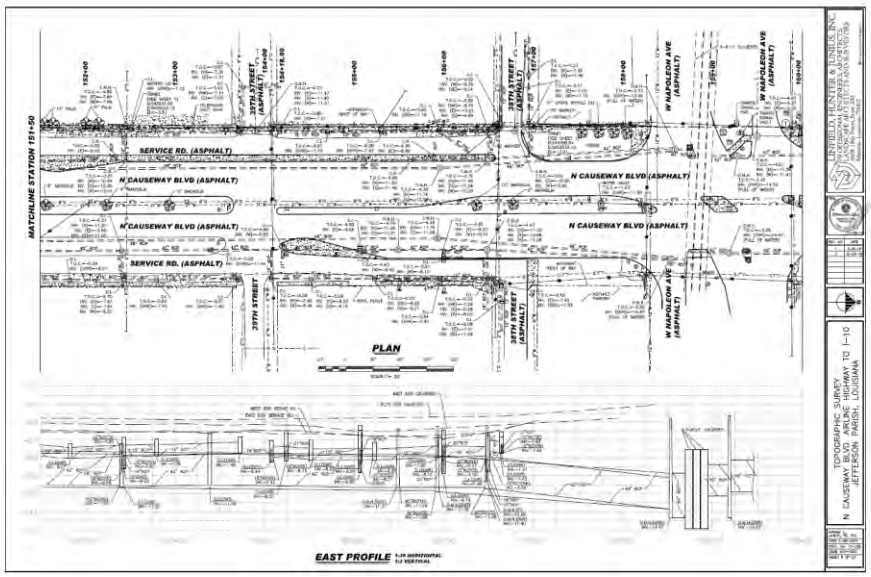


Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2019	$54,500 (Topo Survey)	$54,500 (Topo Survey)

TEC Professional Services Questionnaire

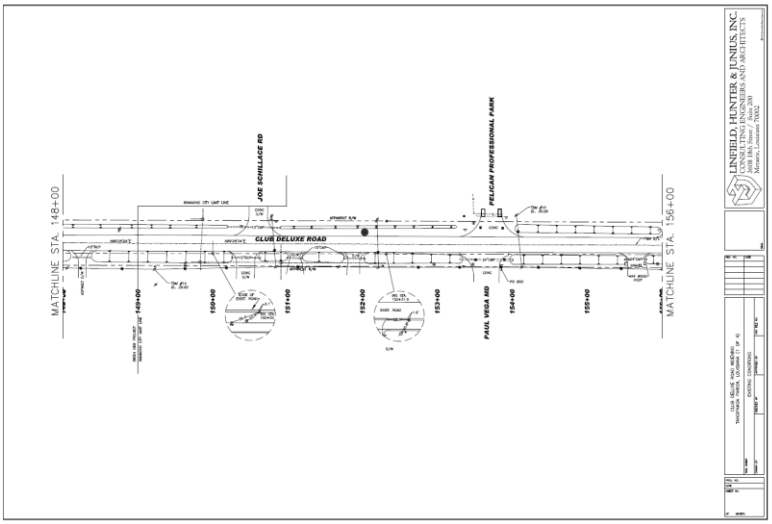
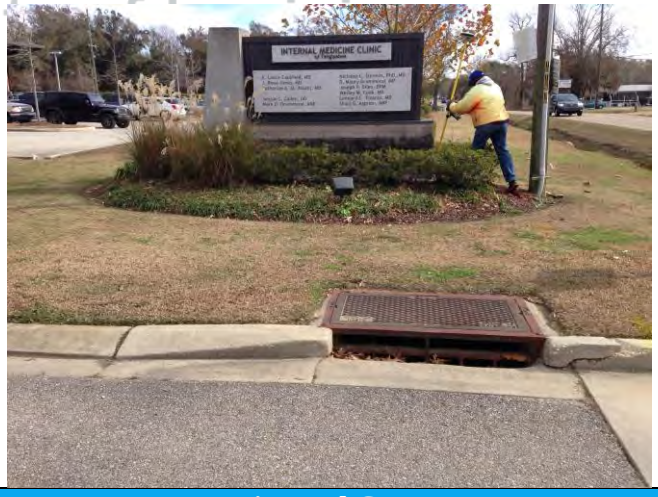
PROJECT NO. 2		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Magazine Street Topographic Survey **New Orleans, LA** **City of New Orleans** **Department of Public Works** **1300 Perdido Street, Room 6W03** **New Orleans, LA 70112** **Alan Weber** **(504) 658-8209**	Linfield, Hunter & Junius, Inc. provided topographic surveying for Magazine Street Improvements between Broadway and Nashville. The survey was used as the basis for the roadway improvements design. **Key Relevant Features** ✓ **Topographic Survey** ✓ **Differential Level for Project Benchmarks** ✓ **Baseline Establishment**  	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2021	$175,000 (Topo Survey)	$175,000 (Topo Survey)

TEC Professional Services Questionnaire

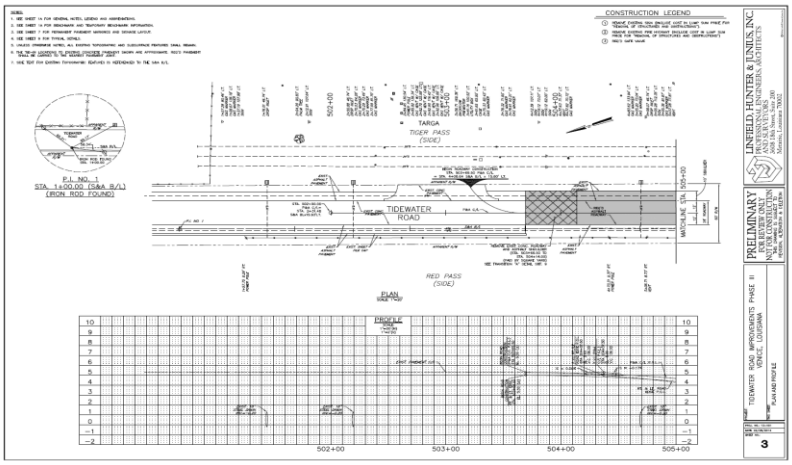
PROJECT NO. 3	
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**
Causeway Boulevard Survey **Metairie Road to W. Napoleon Avenue** **Metairie, LA** **Jefferson Parish** **Department of Capital Projects** **1221 Elmwood Park Blvd, Suite 906** **Jefferson, LA 70123** **Neil D. Schneider, CCM, P.E.** **(504) 736-6833** Jefferson Parish State of Louisiana 	LHJ performed a full topographic survey of Causeway Boulevard between Metairie Road and West Napoleon Avenue (5700 L.F. approximately). Existing improvements, utilities, limits of paving, fencing, sidewalks, and signage were located. Cross Sections were performed every 50 ft. and a plan and profile drawing of Causeway Boulevard and the adjacent service roads was delivered. **Key Relevant Features** ✓ **Jefferson Parish Project** ✓ **Topographic Survey** ✓ **Differential Level for Project Benchmarks** ✓ **Baseline Establishment** **Key Relevant Personnel** ✓ **Nathan J. Junius, P.E., P.L.S.** ✓ **Daniel D. Bindewald** ✓ **Paul H. Morales, IV** 

Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	**Work for which Firm was Responsible:**
2019	$200,000 (Topo Survey)	$200,000 (Topo Survey)

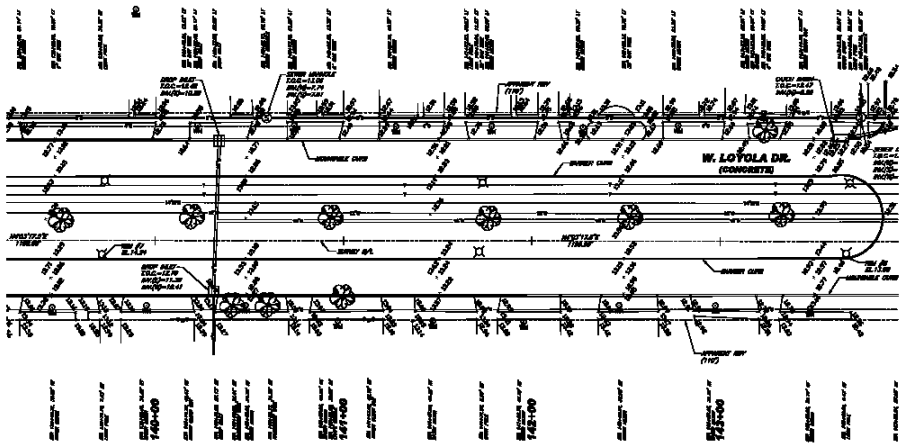
TEC Professional Services Questionnaire

PROJECT NO. 4			
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**		
Club Deluxe Road Right-of-Way and Topographic Survey **Hammond, LA** **Tangipahoa Parish** **P.O. Box 215** **Amite, LA 70422** **Wesley Danna** **(985) 340-9028**	Linfield, Hunter & Junius, Inc. prepared right-of-way maps and topographic surveying to Tangipahoa Parish for the widening of Club Deluxe Rd. **Key Relevant Features** ✓ **Topographic Survey of Roadway** ✓ **Right of Way Survey** ✓ **Benchmark Loop**   		
Completion Date (Actual or estimated):	**Estimated Cost:**		
	Entire Project:	**Work for which Firm was Responsible:**	
06/2014	$30,500 (Topo Survey)	$30,500 (Topo Survey)	

TEC Professional Services Questionnaire

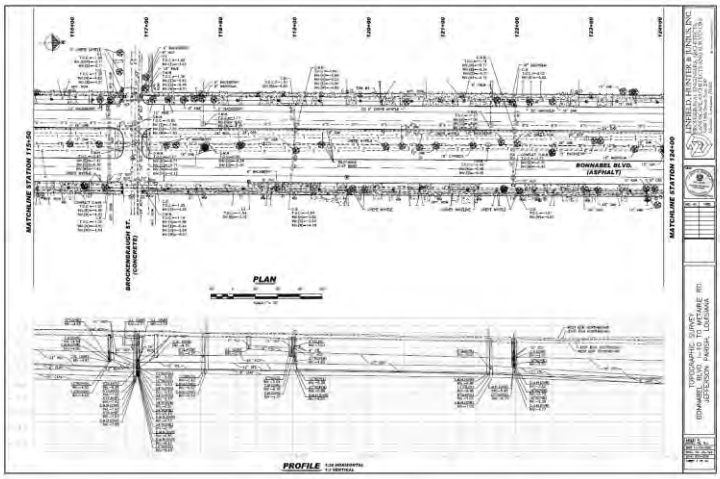
PROJECT NO. 5	
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**
Tidewater Road Topographic Survey **Venice, LA** **Plaquemines Parish Government** **333 F. Edward Hebert Blvd, Bldg 500** **Belle Chasse, LA 70037** **Ken Dugas** **(504) 934-6116**	Linfield, Hunter & Junius, Inc. provided topographic surveying for Tidewater Road Improvements in Plaquemines Parish. The survey was used as the basis for the roadway improvements design. Approximately 3 miles in total length. **Key Relevant Features** ✓**Topographic Survey** ✓**Baseline Establishment** ✓**Hydrographic Surveying** 
Completion Date (Actual or estimated):	**Estimated Cost:**
	Entire Project: / **Work for which Firm was Responsible:**
2014	$99,500 (Topo Survey) / $99,500 (Topo Survey)

TEC Professional Services Questionnaire

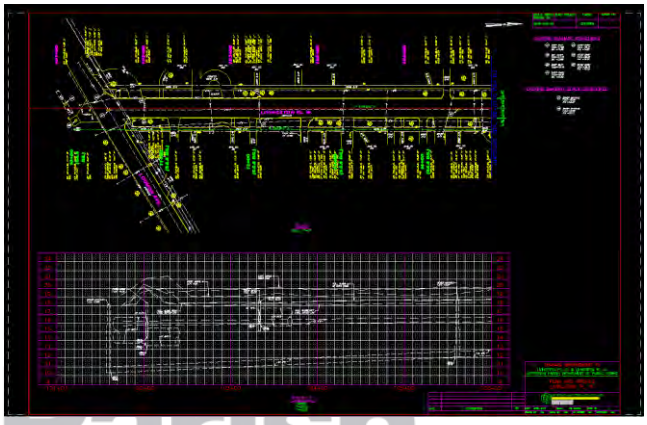
PROJECT NO. 6	
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**
West Stanford and West Loyola Force Main Topographic and Right of Way Survey **Kenner, LA** **City of Kenner** **Department of Public Works** **1610 Rev. Richard Wilson Dr-Bldg D** **Kenner, LA 70062** **Christine Calamari** **(504) 468-7515**	Linfield, Hunter & Junius, Inc. provided topographic and right of way surveying to City of Kenner for the West Stanford and West Loyola Force Main rehabilitation.  **Key Relevant Features** ✓**Topographic and Right-of-way Surveys** ✓**Baseline Establishment** ✓**Differential Level for Project Benchmarks** ✓**Apparent ROW**

Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	**Work for which Firm was Responsible:**
2012	$48,000 (Topo Survey)	$48,000 (Topo Survey)

TEC Professional Services Questionnaire

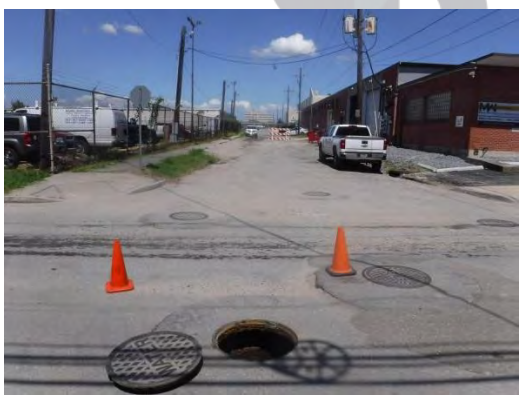
PROJECT NO. 7		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Bonnabel Boulevard Survey **Metairie Road to I-10 Service Road** **Metairie, LA** **Jefferson Parish** **Department of Capital Projects** **1221 Elmwood Park Blvd, Suite 906** **Jefferson, LA 70123** **Neil D. Schneider, CCM, P.E.** **(504) 736-6833**	LH&J performed a full topographic survey of Bonnabel Boulevard between Metairie Road and I-10 (3900 L.F. Approximately). Existing improvements, utilities, limits of paving, fencing, sidewalks, and signage were located. Cross Sections were performed every 50 ft. and a plan and profile drawing of Bonnabel Boulevard was delivered. **Key Relevant Features** ✓ **Jefferson Parish Project** ✓ **Topographic Survey** ✓ **Differential Level for Project Benchmarks** ✓ **Baseline Establishment** **Key Relevant Personnel** ✓ **Nathan J. Junius, P.E., P.L.S.** ✓ **Daniel D. Bindewald** ✓ **Paul H. Morales, IV**	
		
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2020	$88,254 (Topo Survey)	$88,254 (Topo Survey)

TEC Professional Services Questionnaire

PROJECT NO. 8		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Livingston Place Roadway Improvements Topographic Survey **Metairie, LA** **Jefferson Parish** **Department of Capital Projects** **1221 Elmwood Park Blvd, Suite 906** **Jefferson, LA 70123** **Neil D. Schneider, CCM, P.E.** **(504) 736-6833** Jefferson Parish State of Louisiana	Linfield, Hunter & Junius, Inc. provided topographic surveying for East & West Livingston Street Improvements. The survey was used as the basis for the roadway improvements design. **Key Relevant Features** ✓ **Jefferson Parish Project** ✓ **Topographic Survey** ✓ **Differential Level for Project Benchmarks** ✓ **Baseline Establishment**  	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2008	$38,000 (Topo Survey)	$38,000 (Topo Survey)

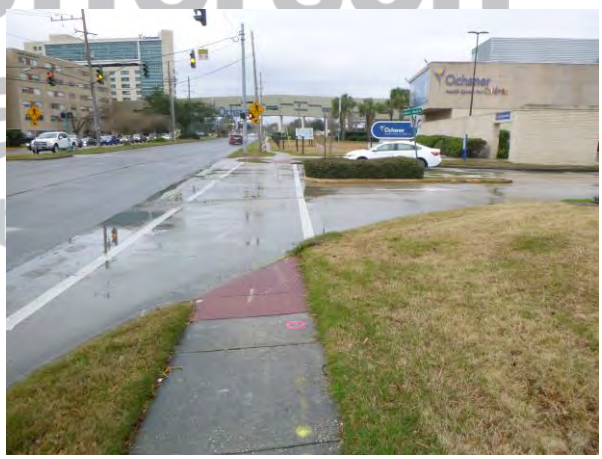
TEC Professional Services Questionnaire

PROJECT NO. 9

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:
B.W. Cooper, Gert Town, Dixon Group E **New Orleans, Louisiana** **City of New Orleans** **Department of Public Works** **1300 Perdido Street, Room 6W03** **New Orleans, LA 70112** **Nguyen Phan** **(504) 658-8000** 	**General Project Description** The City of New Orleans Department of Public Works is undertaking FEMA-funded street and sidewalk rehabilitation in the BW Cooper, Gert Town, and Dixon neighborhoods. Linfield, Hunter & Junius performed the surveying as a sub to Pivotal Engineering for the redevelopment of the streets and sidewalks for the project. Design improvements within the area include a range of point repairs for failing and damaged surfaces, full reconstruction, and patch mill and overlay of existing streets. **Scope and Methodology** Linfield, Hunter & Junius performed to date approximately 17 blocks (5, 245 feet) of topographic survey within the neighborhood. LH&J survey duties included locating improvements, establishing a baseline parallel with the right of way, locating visible and non-visible utilities by way of one call markings and maps provided by utility companies. In addition, apparent right of way was established, two temporary benchmarks were provided for each block and cross sections were taken at 50 ft. intervals including top of curb, gutter, and centerline elevations. After Field Work was completed, LH&J delivered plan and profile drawings of each block. Along with location of improvements in plan view, these topographic surveys included profiles of existing street centerline, gutter, and sewer and drainage structures. **Results** The completed surveys were submitted to Pivotal Engineering for use in their street improvement designs. Currently those designs are under review by the Department of Public Works with construction slated to begin in December 2020 **Relevant Key Features** ✓ **Topographic survey** ✓ **Plan and Profile Survey** ✓ **Survey Baseline** ✓ **Temporary Benchmarks** ✓ **Apparent Right of Way** ✓ **Visible and Non-Visible Utility Location** **Relevant Key Personnel** ✓ **Mark K. Annino, E.I.** ✓ **Nathan J. Junius, P.E., P.L.S.** ✓ **Richard A. Van Wootten, P.E.** ✓ **Robert E. Nockton, P.E.** ✓ **Luis F. Sosa, P.E.** ✓ **Anthony F. Goodgion, P.E.** ✓ **Daniel D. Bindewald** ✓ **Paul H. Morales, IV** ✓ **Darla L. Morales**

Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
2020	$62,000 (Topo Survey)	$62,000 (Topo Survey)

TEC Professional Services Questionnaire

PROJECT NO. 10			
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**		
Jefferson Highway Survey **Deckbar Ave. to Coolidge Street** **Harahan, LA** **Ochsner Health Systems** **1514 Jefferson Highway** **New Orleans, LA 70121** **Mr. Jay Britsch**	LH&J performed a full topographic survey and boundary survey of the existing right of way of Jefferson Highway between Deckbar Avenue and Coolidge Street. Existing improvements, utilities, limits of paving, fencing, sidewalks, and signage were located. The project was performed in anticipation of a beautification project Ochsner has planned for the corridor. **Key Relevant Features** ✓ **Topographic Survey** ✓ **Differential Level for Project Benchmarks** ✓ **Baseline Establishment** ✓ **Boundary Survey of existing right of way** **Key Relevant Personnel** ✓ **Nathan J. Junius, P.E., P.L.S.** ✓ **Daniel D. Bindewald** ✓ **Paul H. Morales, IV**		
			
Completion Date (Actual or estimated):	**Estimated Cost:**		
	Entire Project:	**Work for which Firm was Responsible:**	
2/2021	$70,000	$70,000	

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		
2.		
3.		

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

INTRODUCTION

Linfield, Hunter & Junius, Inc. has more than (60) years experience providing quality design professional services to public and private clients in New Orleans and the surrounding area. The firm has been performing full topographic surveys for over twenty (20) years. The following is a list of some of our major Clients which we have provided land surveying services:

Public

- Jefferson Parish Department of Public Works
- LA Department of Transportation and Development
- U.S. Army Corps of Engineers
- City of New Orleans Department of Public Works
- Sewerage and Water Board of New Orleans
- Plaquemines Parish Government
- Pontchartrain Levee District
- St. Tammany School Board
- City of Hammond
- Tangipahoa Parish
- City of Baton Rouse
- University of New Orleans

Private

- CVS/Pharmacies – hundreds
- Dillard University
- Tulane University
- Children's Hospital
- Woodward Design+Build
- Friends of City Park, New Orleans, LA
- Dollar General Stores – over 50
- Exxon/Mobile Corporation
- New Orleans Park-N-Fly
- Multiple design consultants statewide

SCOPE OF CONTRACT SERVICES

LH&J has been providing surveying services as a prime consultant for many years, successfully completing hundreds of projects for public agency clients such as the Jefferson Parish, Sewerage & Water Board of New Orleans, the U. S. Army Corps of Engineers, the Port of New Orleans, the City of New Orleans, Plaquemines Parish Government, LA DOTD and many others. The key management staff of Linfield, Hunter & Junius, Inc. have been recognized by their peers for their professionalism, expertise and leadership. Our land surveying department has the full capacity to perform **topographic**, boundary, ALTA and hydraulic surveys of any size.

LH&J employs **two full time Registered Professional Land Surveyors** and maintains **four fully staffed survey field crews** who are equipped with modern vehicles and state of the art survey equipment for both conventional and GPS surveying. Our crews have worked in difficult terrain conditions, including coastal marshes, and are equipped for and experienced at performing boundary, **topographic**, bathymetric, right-of-way, control, and hydrographic surveys. Our CADD Drafters are highly experienced in working with both Bentley MicroStation and Autodesk AutoCAD as required. LH&J also utilizes add in modules such as ArcView, Civilsoft and InRoads to enhance the efficiency of data processing and project deliverables.

MINIMUM PERSONNEL REQUIREMENTS

1. **The persons or firms under consideration shall have at least one (1) principal who is a licensed, registered professional engineer in the State of Louisiana.**
   This requirement will be fulfilled by the prime consultant.

   Linfield, Hunter & Junius, Inc. firm principal Nathan J. Junius, P.E., P.L.S., PTOE is a Registered Professional Civil Engineer and **Registered Land Surveyor** in Louisiana with over twenty (20) years' experience in land surveying.

2. **The persons or firms under consideration shall have a professional in charge of the Project who is a licensed, registered professional engineer in the State of Louisiana with a minimum of five (5) years' experience.**
   This requirement will be fulfilled by the prime consultant.

3. **The persons or firms under consideration shall have one (1) employee who is a licensed, registered professional engineer in the State of Louisiana. A subcontractor may meet this requirement only if the advertised Project involves more than one discipline**
   This requirement will be fulfilled by the prime consultant.

Supplemental Services – Surveying

Linfield, Hunter & Junius, Inc. (LH&J) employs **two full time Registered Professional Land Surveyors** and maintains **four fully staffed survey field crews** who are equipped with modern vehicles and state of the art survey equipment for both conventional and GPS surveying. Our crews have worked in difficult terrain conditions, including coastal marshes, and are equipped for and experienced at performing topographic, boundary , topographic bathymetric, right-of-way, control, and hydrographic surveys as well as performing bench leveling, construction layout surveys and settlement monitoring surveys. Our CADD Drafters are highly experienced in working with both Bentley MicroStation and Autodesk AutoCAD as required. LH&J also utilizes add in modules such as ArcView, Civilsoft and InRoads to

enhance the efficiency of data processing and project deliverables. We are competent at working with any vertical and horizontal datum as specified by the Client's requirements. We utilize computer based survey data processing software to achieve maximum efficiency and ensure rapid and reliable deliverables for our Clients. Since placing an increased emphasis on land surveying services, the firm has completed over $1,000,000 in land surveys for in-house designs and others.

The following list highlights this experience:

- Nathan J. Junius, P.E., P.L.S., PTOE/Professional Land Surveyor – 20 years of land surveying experience
- William J. Muller, P.L.S./Professional Land Surveyor – 40+ years of land surveying experience

Resumes for the above personnel are included in Section L of this TEC Questionnaire.

Capabilities include the following and more:

- **Topographic Surveying** (determine relative positions & elevations of natural & man-made features)
- **Drone Surveying** (detailed & expedient multi-acre data-capturing surveying)
- **Property, Boundary, and Right-of-Way Surveys** (preparation of Legal Descriptions, 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)
- **Bathymetric / Hydrographic Surveys** (determine shoreline and depths of bodies of water)
- **Builder's Package** (includes *Boundary Survey & Construction Benchmark*, *Form Board Certificate*, *Top of Slab Certificate*, & *Final FEMA Elevation Certificate*)
- **ALTA Surveys** (American Land Title Association-compliant surveys)and ROW maps to define project boundaries and for acquisition of property)

EVALUATION CRITERIA

1. Professional Training and Experience

Linfield, Hunter & Junius, Inc. (LH&J) has been a provider of quality professional engineering and architectural services for over 60 years and **full land surveying services** for over 20 years. LH&J has been providing services as a prime consultant for many years, successfully completing thousands of projects for clients such as Jefferson Parish, LA DOTD, the Corps of Engineers, the Port of New Orleans, the City of New Orleans, Sewerage and Water Board of New Orleans, Plaquemines Parish Government, and many others. LH&J provides CADD Drafting (**AutoCADD** and **MicroStation**) and Quality Assurance Services for all its land surveying services.

We have been providing very complicated survey services to the U.S. Army Corps of Engineers that conform to all Government requirements for over ten years for many flood protection projects. We are competent at working with any vertical and horizontal datum as specified by the Client's requirements. We utilize computer based survey data processing software to achieve maximum efficiency and ensure rapid and reliable deliverables for our Clients.

2. Capacity for Timely Completion of the Project

Linfield, Hunter & Junius, Inc. (LH&J) currently employs thirty-seven (37) highly qualified design professionals, and has been providing quality engineering services in Southeast Louisiana for over thirty (30) years.

3. Location of Principal Office Where Work Will Be Performed

Linfield, Hunter & Junius, Inc. is located in Jefferson Parish at **3608 18th Street, Metairie, LA 70002.** We are centrally located in the parish, and all work will be performed from this office.

4. Adversarial Legal Proceedings

Linfield, Hunter & Junius, Inc. has no previous or on-going litigation with Jefferson Parish.

5. Prior Successful Completion of Projects Requiring Surveying Services for which Firm Has Provided Verifiable References

Linfield, Hunter & Junius, Inc. has a staff of engineers with significant experience providing the professional services required for this project. **Examination of the Resumes in Item K and the Project Descriptions in Item L demonstrates the extensive experience of our staff** in providing the services required for this project. Our team has a proven track record of completed major projects from feasibility studies following through to completed construction, and has recently completed a number of successful drainage projects which are similar to the scope of work of this project and in the same geographical area.

- Full Topographic Survey, Canal Street – Client: Jefferson Parish Government
- Full Topographic Survey, East and West Livingston Drive – Client: Jefferson Parish Government
- Full Topographic Survey, Russell Street – Client: Jefferson Parish Government
- Full Topographic Survey, Woodvine and Cuddihy Streets – Client: Jefferson Parish Government
- Full Topographic Survey, Magazine Street, New Orleans – Client: City of New Orleans, Dept. of Public Works
- Full Topographic Survey, Woodland Highway Survey (LA407) – Client: LA Dept. of Transportation and Development
- Full Topographic Survey, 17th Street Canal Survey (LA 611), Jefferson/Orleans Parish, LA – Client: U.S. Army Corps of Engineers
- Full Topographic Survey, Club Deluxe Road Widening Survey (LA Hwy 51), Tangipahoa

Parish, LA – Client: Tangipahoa Parish
- Full Topographic Survey, W. Stanford, W. Loyola Force Main Survey, Kenner, LA – Client: City of Kenner, Dept. of Public Works
- Full Topographic Survey, St. Charles Avenue Overlay (State Project 700-36-0162) – Client: City of New Orleans, Dept. of Public Works
- Full Topographic Survey, Magazine Street Reconstruction (State Project 742-36-137 and 742-36-0139) – Client: City of New Orleans, Dept. of Public Works

6. Size of Firm

The size of our firm is ideal for projects such as the proposed project because:

- The firm has a vast amount of experience in land surveying
- The firm is large enough that it can absorb projects of the size of the proposed project and not become overburdened by them.
- The firm is small enough to be nimble and responsive to the client.
- The management structure is not multi-layered, which facilitates resolution of issues that could otherwise slow down a project
- The firm has a total annual land surveying **capacity of $2,000,000.**

Within the past five (5) years the firm has designed, administered, and managed over $5 Million in land surveying. Depending on the scope of work required by Jefferson Parish, LH&J will assemble a team that will be able to commit to the project

7. Past and Current Professional Accomplishments

Since placing an increased emphasis on land surveying services, Nathan Junius has completed over $17,000,000 in land surveys for in-house designs and others. Services to date have included **property surveys**, **right of way maps**, **property taking**, bench leveling, topographic surveys, construction layout surveys and settlement monitoring surveys. A sampling of work to date includes bench leveling for calibration of pumping station gages for Jefferson Parish, topographic surveys for Canal Street Reconstruction in Jefferson Parish, East and West Livingston Drive Reconstruction, Russell Street Reconstruction, Woodvine and Cuddihy Streets Reconstruction, Magazine Street Reconstruction, Geisenheimer Canal Improvements, Labarre Business Park Drainage Improvements, Sewerage Extensions - West Pointe a la Hache to Bohemia, Lake Hermitage Waterline, Metairie Small Animal Hospital, Waterline Extension - Russell Drive to Cedar Grove, Sewage Force Main Replacement Lift Station No. 8 to Belle Chasse Sewage Treatment Plant, and Sewage Force Main Extension - Lift Station No. 7 to Lift Station No. 8 Belle Chasse, Slidell Vo-Tech Site Plan, Metairie Road Bridge Control Survey, Hoey's Bypass Canal Alignment Study, Right of Way Study Metairie Road Bridge, Right of Way Study Hoey's Cut, Vertical Response of Nashville Dock Repair to Crane Loading, Right of Way Survey Maple Ridge Drive Detour, Topographic Right of Way and Boundary Survey Metairie Road Drain Line Relocation, Lexus of New Orleans Topographic Survey, , Children's Hospital Parking Lot Survey, Louisville and Catina Streets Topographic Survey, and Woodlawn Avenue Topographic Survey.

LH&J has been providing quality surveying services to Jefferson Parish, LA DOTD, the City of New Orleans, U.S. Army Corps of Engineers and many more for over 10 years and we have performed engineering projects for LA DOTD for over the last 30 years. We have an excellent track record of providing Government with high quality surveying services which are cost effective and completed in a timely manner. We have also prepared surveys throughout the Southeast

U.S. for CVS/Pharmacies with over 500 potential building sites investigated since 2004. These and other long-term client relationships are a testament to LH&J's dedication to providing high quality services for reasonable prices in a timely manner that meets or exceeds all customer expectations.

Closing Statement

We are extremely interested in this solicitation.

- **Linfield, Hunter & Junius, Inc. has extensive experience in providing land surveying services including property surveys, ROW Maps and Title Take-Off on projects in the State of Louisiana and particularly the Southeastern portion of the state.**
- **Linfield, Hunter & Junius, Inc. has the capacity to easily absorb the survey services included in this project assignment.**

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

Signature: _____ **Printed Name:** Nathan J. Junius, P.E., P.L.S., PTOE

Title: President **Date:** March 24, 2022

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

Name:	Public Address:
Linfield, Hunter & Junius, Inc.	3608 18th Street, Suite 200 Metairie,LA 70002

License/Certificate Information w/ Supervision

License	Status	First Issuance Date	Expiration Date	Supervisor(s)
EF.0000510	ACTIVE	05/23/1979	03/31/2023	Mr. Nathan John Junius # PE.0031843 - Active

State of Louisiana

Board of Architectural Examiners

The firm whose name appears on this certificate is in compliance with the provisions of the Louisiana State Board of Architectural Examiners' Licensing Law and Rules and is duly registered and entitled to practice architecture in the State of Louisiana.

CERTIFICATE OF AUTHORITY NO. AE0030 EXPIRES June 30, 2022

Linfield, Hunter & Junius, Inc.

President

Secretary

Executive Director

May 17, 2021 — Date

$75.00 — Fee Paid

(ALL CERTIFICATES BECOME DELINQUENT AFTER EXPIRATION DATE)

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

Name:	Public Address:
Linfield, Hunter & Junius, Inc.	*3608 18th Street, Suite 200* *Metairie,LA 70002*

License/Certificate Information w/ Supervision

License	Status	First Issuance Date	Expiration Date	Supervisor(s)
VF.0000532	*ACTIVE*	*06/15/2004*	*09/30/2022*	*Mr. Nathan John Junius # PLS.0004958 - Active*

Print Close

9643 Brookline Avenue | Suite 121 | Baton Rouge, LA 70809-1433
225-925-6291 | Fax 225-925-6292

Drainage Master Plan for the East Bank of Jefferson Parish

SOQ 22-014 - Resolution No. 138896

March 24, 2022

TEC Professional Services Questionnaire

A. Project Name and Advertisement Resolution Number:

Professional Engineering and Supplemental Services for a Drainage Master Plan for the East Bank of Jefferson Parish
Resolution Number: 138896; SOQ 22-014

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

Batture, LLC
5110 Freret Street
New Orleans, LA 70115

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:

Robert Mora, PE, PLS
Managing Partner
Phone: 504.261.7143
Email: bmora@batture-eng.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.

Jennifer Snape, PE
Managing Partner
Phone: 480.522.9502
Email: jsnape@batture-eng.com

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

4 Administrative	___ Estimators	___ Specification Writers
___ Architects (Licensed)	___ Geologists	2 Structural Engineers
___ Chemical Engineers	___ Geotechnical Engineers	___ Graduate Engineers
4 Civil Engineers	___ Interior Designers	___ Project Managers
2 Construction Inspectors	1 Landscape Architects	___ Clerical
1 Ecologists	4 Land Surveyor	___ Grant/Funding Specialist
___ Electrical Engineers	___ Mechanical Engineers	___ Sanitary Engineers
8 Engineer Intern	___ Environmental Engineers	
2 Professional Land Surveyors		28 **TOTAL**

F. Is this submittal by a JOINT-VENTURE? Please check: YES [ ] NO [✓]

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

TEC Professional Services Questionnaire

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

1.

N/A

2.

N/A

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. N/A		
2. N/A		
3. N/A		

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

15

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:

Jennifer Snape, PE
Managing Partner

Project Assignment:

Principal Engineer / Professional in Charge of Project

Name of Firm with which associated:

Batture LLC

Years' experience with this Firm:

6 years

Education: Degree(s)/Year/Specialization:

Master's Certificate /2012/ Coastal Engineering
B.S./2004/Civil Engineering

Active registration: Year first registered/discipline:

2010/LA Civil Engineering PE # 35470

Other experience and qualifications relevant to the proposed Project:

Ms. Snape has a wide range of project experience including hydrologic and hydraulic modeling for coastal systems; design of coastal erosion protection systems; environmental consulting and due diligence studies; and permitting through federal, state, and local agencies. She has successfully managed and delivered projects for private and public clients, including Plaquemines Parish, the City of New Orleans, Sewerage & Water Board of New Orleans, St. Bernard Parish, St. Tammany Parish, and others. Ms. Snape has proficiently completed the project planning, engineering and design, hydraulic model selection, hydraulic model development, hydraulic model verification, alternatives analyses, and permitting tasks for numerous projects. Ms. Snape has experience as lead design engineer for non-rock alternatives to shoreline protection projects, applicable where rock revetments or foreshore installations are not possible. She has also provided design support for soft engineering solutions to shoreline erosion problems and bank stabilization projects.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Robert Mora, PE, PLS Managing Partner
Project Assignment:
Principal Engineer / Professional in Charge of Project
Name of Firm with which associated:
Batture LLC
Years' experience with this Firm:
8 years
Education: Degree(s)/Year/Specialization:
B.S./2003/ Civil Engineering
Active registration: Year first registered/discipline:
2009/LA Civil Engineering PE #35109 2010/LA Land Surveying PLS # 5042
Other experience and qualifications relevant to the proposed Project:
Mr. Mora has coastal experience in both wetland assimilation projects and hurricane protection projects. He has thorough experience in drafting and modeling within various platforms of AutoCAD. He has successfully managed and completed projects for entities such as Jefferson Parish, CPRA, LaDOTD, Sewerage and Water Board of New Orleans, City of New Orleans Department of Public Works, Regional Planning Commission, St. Bernard Parish, Orleans Levee Board, and Army Corps of Engineers. Additionally, Mr. Mora has extensive experience with construction management/administration and project management. His management experience and project success is a testament to his ability to coordinate between agencies, companies, and clients in an effective manner.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Mark Schexnayder, MS
Coastal Biologist

Project Assignment:

Project Manager

Name of Firm with which associated:

Batture LLC

Years' experience with this Firm:

1 year

Education: Degree(s)/Year/Specialization:

B.S./1983/Marine Biology
M.S./1987/ Botany/Biology

Active registration: Year first registered/discipline:

Professional Association of Diving Instructors (PADI)

Other experience and qualifications relevant to the proposed Project:

Mark Schexnayder is a career biologist who joined the Batture team in 2020. Over his career, he earned respected roles such as Louisiana Department of Wildlife and Fisheries (LDWF) Louisiana shrimp program manager and the Director of the LDWF Marine Laboratory on Grand Terre before joining LSU AgCenter in 2000 as a Coastal Advisor. Mark helped craft the Bayou St. John Management Plan and lead several restoration projects in the bayou and in New Orleans City Park. He was named a Special Assistant to the Chancellor to oversee recovery efforts in the Greater New Orleans Area after Hurricane Katrina. He was also part of a team that installed nine artificial fishing reefs in Lake Pontchartrain. When the 2010 BP oil spill occurred, Mark returned to LDWF to help coordinate fisheries recovery efforts. As Deputy Assistant Secretary for the Office of Fisheries, his projects included the development of seafood sustainability, certification and traceability programs. Additionally, he represented LDWF on the Crab, Shrimp and Oyster Task Forces. As an employee of Batture, Mark is able to apply his talents to public parks and coastal projects, as well as local, State and Federal government projects.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Troy Jeanfreau, PE
Civil Operations Manager

Project Assignment:

Engineering Design Lead

Name of Firm with which associated:

Batture LLC

Years' experience with this Firm:

1 year

Education: Degree(s)/Year/Specialization:

B.S./1993/Civil Engineering

Active registration: Year first registered/discipline:

1999/LA Civil Engineering PE #28248

Other experience and qualifications relevant to the proposed Project:

Troy Jeanfreau, PE is a professional Civil Engineer, licensed throughout the Gulf Coast. His 26 years of experience includes project management and design work in drainage, sewer, earthen levees, sediment diversion, floodwalls, floodgates, pump stations, roadways, . He has performed numerous engineering projects for public and private clients on the local, state, and federal level. He has also served on the program management side with both municipal and federal clients, providing oversight of projects designed by other consultants, providing design reviews and coordination between the consultant and the multiple other agencies involved. Additionally, he serves as the Quality Control Manager with an oversight role not only on project level quality reviews, but also on office level spanning across multiple departments and disciplines.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Andrew Doyle, PLA, ASLA Landscape Architect
Project Assignment:
Landscape Architect
Name of Firm with which associated:
Batture LLC
Years' experience with this Firm:
3 years
Education: Degree(s)/Year/Specialization:
B.L.A. / 2013 / Landscape Architecture
Active registration: Year first registered/discipline:
2016 / LA Landscape Architecture CLARB #0739
Other experience and qualifications relevant to the proposed Project:
Andrew Doyle, PLA is a Registered Professional Landscape Architect with a background in designing and implementing sustainable site interventions in the urban environment. He specializes in H&H modeling, large scale ecological planning, sustainable urban design strategies, watershed management master planning, and green infrastructure-based stormwater management. He has extensive experience in designing stormwater management and green infrastructure interventions. Past projects focused on field data collection, regional mapping and GIS analysis, 2-D and 3-D H&H modeling, and site-specific detail design using digital modeling software. He skillfully prepares graphic-based representations using computer-based modeling and rendering software to articulate design ideas generated by multi-disciplinary project teams to communicate innovative design strategies to the general public. He has been involved in numerous large-scale HMGP projects in the New Orleans area and he has managed several transportation studies, assisted in the creation and adoption of complete streets policies, and completed Stage 0 feasibility studies that evaluate the impacts of potential capital projects.

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:	
St. Anthony Green Streets - Programming and Design New Orleans, Louisiana City of New Orleans DPW Stephanie Dreher stephanie.dreher@nola.gov 504-658-8000 1300 Perdido Street Suite 6W03 New Orleans, LA 70112	Batture, LLC is leading the design team for this project , part of the Gentilly Resilience District. The goal is to create a network of small green infrastructure improvements that will capture water where it falls, reduce runoff flowing into the city's drainage system, infiltrate stormwater, and reduce flooding. We are working to improve stormwater management and reduce flood risk and subsidence, empower residents to participate in adapting their block and neighborhood parks to manage water and build resilience, enhance social cohesion and community well-being, and develop a replicable model for block-by-block strategies for stormwater management and community resilience across the city. Batture is the prime consultant for this project, overseeing all street design. Batture LLC is performing all surveying tasks within the project.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
On-going	$13,400,000	$1,640,000

PROJECT NO. 2

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
Lakeview City Park Drainage New Orleans, Orleans Parish, LA City of New Orleans Mary Kincaid 1300 Perdido St New Orleans, LA 70112 (504) 658-8048 mkincaid@nola.gov	As prime consultant for the Lakeview City Park Drainage Improvements Project, Batture is overseeing all professional design and construction administration services for the FEMA HMGP-eligible project site in City Park of New Orleans. This project explores how New Orleans City Park might be used to manage stormwater and mitigate flooding in the surrounding neighborhoods. In addition to project management, Batture is providing engineering design, H&H modeling, water quality monitoring, habitat assessments, beneficial use of dredge material, surveying, and construction administration services. Plans and specifications for the project site may include the following design features: large retention/detention basins, street basins, streetside bioswales, streetscapes, green alleyways, and upgraded grey infrastructure.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
Design - Estimated February 2022 Construction - Estimated April 2023	$15,828,879 (Construction) $1,606,245 (Consulting)	$890,000 (Estimated)

TEC Professional Services Questionnaire

PROJECT NO. 3		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility**	
LA SAFE Gretna Resilience District Kickstart Ph. I Gretna, Louisiana City of Gretna Matthew Martinec PO Box 404 Gretna, LA 70054 (504) 363-1568 mmartinec@gretnala.com	The Gretna Resilience District Kickstart is an ambitious parish-owned Resilient Infrastructure and Community Nonstructural Mitigation/Flood Risk Reduction project. The improvements include green infrastructure features to increase storage capacity and improve conveyance of stormwater in an area with a high concentration of repetitively flooded homes and businesses. In addition, the canal enhancements include the creation of recreational amenities for biking, walking and interactive community spaces. Batture is performing all H&H modeling (and surveying associated with the modeling), structural engineering, civil site design, stormwater management design, habitat assessments, and some cost estimation for the project.	
Completion Date (Actual or estimated)	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
September 2020	$5,605,000	$20,397.00 (Programming Phase) $165,100.00 (Design Phase)

PROJECT NO. 4		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
St. Bernard Campus Water Resilience Project New Orleans, Louisiana City of New Orleans, Stantec Dan Grandal, Stantec Senior Principal 1615 Poydras St, Suite 850, New Orleans, LA 70112 (504) 322-3050 ext 109 dan.grandal@stantec.com	Batture, LLC is performing the surveying and assisting in the engineering design of the water management project along Bayou St John and within the Gentilly Resilience District. This combination green and gray infrastructure drainage upgrades design project aims to reduce flooding and improve recreation opportunities as a part of the larger Gentilly Resilience District. This project sits on the banks of Bayou St. John and will serve as a community nexus as well as stormwater detention facility. The project will include underground and above ground detention, recreation fields, a playground, and significant tree planting.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
December 2020	$7,000,000	$100,000

TEC Professional Services Questionnaire

PROJECT NO. 5		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Stage 0/Stage 1 Feasibility Study: Causeway Boulevard at US 90/Jefferson Highway Jefferson, Jefferson Parish, LA Regional Planning Commission Jeffrey W. Roesel, Executive Director 10 Veterans Boulevard New Orleans, LA 70124 (504) 483-8500 rpc@norpc.org	Batture, LLC is assisting Design Engineering, Inc. in generating the Stage 0/Stage 1 report for the improvement of the Causeway Boulevard/Jefferson Highway interchange to accommodate additional traffic from the Ochsner Hospital expansion. The Stage 0 identified various alternatives and potential utilities, environmental constraints, or other issues that could influence the concept's feasibility, timing, and impact on the physical, natural, and human environment. Batture produced the "Environmental Impacts" report section, including DOTD's Stage 0 Environmental Checklist. Batture will provide environmental and surveying services including right-of-way surveying and identify any conflicting issues present for the revised Stage 0 and Stage 1. The project began in January of 2018.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
December 2020	N/A	$152,875

PROJECT NO. 6		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Oak Park Stormwater Management and Flood Mitigation Project New Orleans, Louisiana City of New Orleans Oleksii (Alex) Novikov (504) 658-8037 onovikov@nola.gov	This project, funded by a FEMA HMGP grant, is a drainage improvement project where 5 vacant, adjacent properties will be transformed into a stormwater management area to reduce flooding in the neighborhood. The project will also utilize a portion of the right-of-way of the adjacent street for pervious paving and a bio-swale to increase storage and filtration of some runoff before it enters the underground detention tank on the lots. Multiple alternatives for various design storms were modeled in EPA SWMM 5 to determine which alternative will best alleviate flooding. The alternatives used green infrastructure components which included retention/detention systems, street basins, rain gardens, and street side bioswales. Batture, LLC modeled all alternatives and analyzed the results, producing the modeling report and supporting tables/figures.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2018	$1,590,000	$13,000

TEC Professional Services Questionnaire

PROJECT NO. 7		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Wisner Tract Master Plan New Orleans City Park New Orleans, Louisiana Conners Ladner, PLA Design Workshop 812 San Antonio Street, Suite 401 Austin, TX 78701	Batture, LLC assisted in the overall efforts to develop a Master Plan for the Wisner Tract portion of New Orleans City Park by providing civil engineering and surveying services. The surveying scope included collecting data on elevations, cross sections of lagoons and bridge crossings, drainage structures, utility locations. We also performed a topographic survey. This data was used to support the H&H modeling of the site. In addition, Batture provided guidance to the prime consultant, including analysis of the site's existing and proposed hydrology, meeting participation, and design support.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2021	N/A	$16,000

PROJECT NO. 8		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
District 5 Project Development Jefferson Parish, Louisiana Jefferson Parish Michelle Gonzales (504)736-6653 mgonzales@jeffparish.net	Batture was chosen by Jefferson Parish to provide coastal engineering and consulting services on an as-needed basis to identify projects located throughout the parish that would benefit Jefferson Parish and District 5. Our senior biologist is working alongside the Coastal Management Director and District 5 staff to pursue potential funding mechanisms in support of the Parish's coastal interests. The project scope includes coastal planning & design, mapping, CAD support, and bidding. We will provide cost benefit analyses, meeting support and collaboration, design drawings, and cost estimates. Additional responsibilities include project start up, project coordination, reporting, and invoicing. The project manager submits monthly project reports and attends all pertinent project and grant meetings	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
Estimated August 2022	$30,000	$30,000

TEC Professional Services Questionnaire

PROJECT NO. 9		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Emergency Repairs to Marina Parking Lot New Orleans, Louisiana Non-Flood Protection Asset Management Authority (Lakefront Management Authority) Jesse Noel, PE (504) 293-2477 jnoel@nolalakefront.com	The Non-Flood Protection Asset Management Authority (NFPAMA), now known as the Lakefront Management Authority, established this project to temporarily address erosive failure issues within the Orleans Marina Parking Lot. Batture worked with Fleming construction during the selective demolition of the parking lot to better understand the extent of scouring underneath the asphalt parking lot. Batture surveyed the bulkhead wall and drainage structures on site before and after work was completed. Batture collected existing data - including surveying and reviewing as-built drawings, prepared construction documents, reviewed bids, and managed construction of the repairs. Since the temporary repairs were complete, Batture has continued to monitor the parking lot and made recommendations on additional repairs on an as-needed basis.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
April 2019	N/A	$22,750

PROJECT NO. 10		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Dillard Wetlands New Orleans, Louisiana Freese & Nichols Nina Reins 900 Camp Street, Suite 354 504-478-1065 nina.reins@freese.com	The Dillard Wetland is a 27-acre parcel of forested low-lying land on the west side of the London Canal opposite of Dillard University and is one of the last remaining parcels of forest within city limits. The Greater New Orleans Water Plan envisaged the Dillard Wetlands as providing a retreat from urban life. The existing low-lying area would be nourished by an influx of stormwater from the surrounding neighborhoods, supporting a healthy wetland ecosystem. Batture is sub-consultant to Freese and Nichols. We provided surveying services for Phase I of the project, including boundary survey, topographic survey, and tree identification/assessments. In Phase II, we are providing design analysis and reports, civil engineering, H&H modeling, and structural engineering.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
Estimated August 2022	N/A	$236,676

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. N/A		
2. N/A		
3. N/A		
4. N/A		

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

Established in 2014, Batture LLC is a Louisiana-based civil engineering and land surveying firm specializing in hydraulic/hydrodynamic modeling, land surveying, site development, environmental research, engineering design, and construction management. Our company is a certified Disadvantaged Business Enterprise (DBE) and a Small Entrepreneurship (Hudson Initiative), dedicated to the progress and protection of Southeast Louisiana. The highly-diversified team of Batture LLC possesses a wide range of professional knowledge. Most of the work that we do is centered around infrastructure, open space development, and housing, with projects ranging from residential jobs to large neighborhood-wide green infrastructure projects. Batture LLC has successfully completed projects for many local and government agencies, including Jefferson Parish, Lakefront Management Authority, City of New Orleans, Sewerage & Water Board of New Orleans, City of N.O. Department of Public Works, City of N.O. Network for Economic Opportunity, Port of N.O., St. Bernard Parish, and others. The team at Batture prides itself on maintaining excellent communication with clients and delivering projects that improve the livelihood of communities.

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

Signature: _____ **Print Name:** Robert Mora

Title: Managing Partner **Date:** 03/23/2022