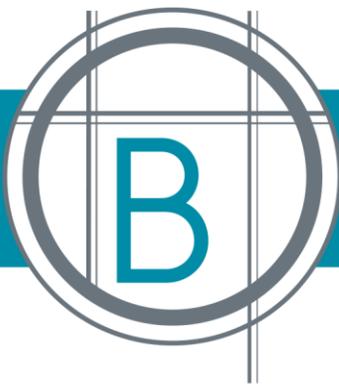


BATTURE<sup>LLC</sup>  
engineers + land surveyors

SOQ 24-020 / RESOLUTION: 144205

5110 FRERET STREET, NEW ORLEANS, LA  
PH.504.533.8644

JEFFERSON PARISH  
COASTAL ENGINEERING  
CONSULTING SERVICES  
AS NEEDED PARISH WIDE



**BATTURE** LLC  
engineers + land surveyors

Jefferson Parish Purchasing Department  
c/o Mark Buttery  
General Government Building  
200 Derbigny Street, Suite 4400  
Gretna, LA 70053

Subject: **SOQ 24-020 - Coastal Engineering Consulting as needed parish wide  
Jefferson Parish Technical Evaluation Committee (TEC) Questionnaire**

Dear Selection Committee,

Founded in 2014, Batture is dedicated to the idea that a highly inspired team can deliver outstanding results while also creating powerful social and environmental change. During every one of our projects, we are energized by this unique purpose. Our clients deserve our best efforts and so does our amazing region and state.

We have established ourselves as a leader in the design of resilient infrastructure for the Coastal Parishes of Louisiana. Our projects re-imagine how infrastructure can better serve communities for the next 50 years rather than duplicating exactly what was done 50 years ago. We believe forward thinking solutions are necessary for Jefferson Parish to thrive in the future; solutions that consider community health, environmental impacts, flood reduction, as well as long-term operation & maintenance costs. Our talented staff members are focused on addressing those issues through their work.

We are thrilled to combine our expertise with that of Coast & Harbor Engineering, Inc., a national firm that specializes in coastal and maritime engineering. By joining our team as a subconsultant, they will contribute their state-of-the-art analysis methods and design tools, increasing our capacity to deliver creative and efficient solutions for Jefferson Parish.

As someone born and raised in Jefferson Parish with extensive experience in Southeast Louisiana, I have a deep understanding of the infrastructure unique to our community. Whether addressing the needs of coastal areas, subdivisions, or commercial corridors, I am confident that Batture LLC and Coast & Harbor Engineering, Inc. can deliver exceptional value through our comprehensive services.

We are eager to collaborate with Jefferson Parish on this project and appreciate your consideration of our statement of qualifications. We look forward to the opportunity to contribute to the development and resilience of our beloved community.

Respectfully,

Robert Mora, PE, PLS, ENV-SP  
Managing Partner  
Batture, LLC  
bmora@batture-eng.com

## TEC Professional Services Questionnaire

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

SOQ 24-020-Coastal Engineering Consulting as needed parish wide  
Resolution No. 144205

**B. Firm Name & Address:**

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, ENV-SP  
Owner & Managing Partner, Bature LLC  
Professional Engineer  
Professional Land Surveyor  
bmora@bature-eng.com  
504.533.8644 x 700

**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.**

Robert Mora, PE, PLS, ENV-SP  
Owner & Managing Partner, Bature LLC  
Professional Engineer  
Professional Land Surveyor  
bmora@bature-eng.com  
504.533.8644 x 700

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

<u>2</u> Administrative	___ Estimators	___ Specification Writers
___ Architects (Licensed)	___ Geologists	<u>2</u> Structural Engineers
___ Chemical Engineers	___ Geotechnical Engineers	___ Graduate Engineers
<u>2</u> Civil Engineers	___ Interior Designers	___ Project Managers
___ Construction Inspectors	<u>1</u> Landscape Architects	___ Clerical
___ Ecologists	<u>3</u> Land Surveyor	___ Grant/Funding Specialist
___ Electrical Engineers	___ Mechanical Engineers	___ Sanitary Engineers
<u>3</u> Engineer Intern	___ Environmental Engineers	
<u>1</u> Professional Land Surveyors		<u>14</u> <b>TOTAL</b>

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

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

## TEC Professional Services Questionnaire

**G. If submittal is by 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      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. Josh Carter, PE, BC.CE Coast & Harbor Engineering, Inc PO Box 202737 Austin, TX 78720	Coastal and Maritime Engineering	No
2. N/A		
3. N/A		

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

    10

## 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:**

Robert Mora, PE, PLS, ENV-SP  
Owner & Managing Partner

**Project Assignment:**

Professional Engineer, Professional in Charge of Project

**Name of Firm with which associated:**

Batture, LLC

**Years' experience with this Firm:**

9 Years

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

B.S. / 2003 / Civil Engineering

**Active registration: Year first registered/discipline:**

2009 / Civil Engineering / 35109  
2010 / Professional Land Surveyor / 5042

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

Robert (Bob) Mora, PE, PLS is founder and managing partner of Batture, LLC and has over 20 years experience in land surveying and civil engineering throughout the New Orleans Metro Area. Mr. Mora has experience providing civil design services on projects for private developers and municipalities. He has successfully managed and completed projects for entities such as the 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. From 2008 – 2011, he worked on the Army Corps of Engineers Hurricane Protection Program as a sub consultant. After managing the construction of over 100 million dollars of flood protection, Mr. Mora was recognized with a Certificate of Appreciation for Exceptional Achievement as a Project Engineer on the Hurricane & Storm Damage Risk Reduction System Mission. Managing this construction work greatly increased his ability to prepare contract plans and specifications.

## TEC Professional Services Questionnaire

<b>KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:</b>
<b>Name &amp; Title:</b> Roderick Richardson Survey Manager
<b>Project Assignment:</b> Survey Manager
<b>Name of Firm with which associated:</b> Batture, LLC
<b>Years' experience with this Firm:</b> 3 Years
<b>Education: Degree(s)/Year/Specialization:</b> B.S. / 2002 / Architectural Engineering
<b>Active registration: Year first registered/discipline:</b> N/A
<b>Other experience and qualifications relevant to the proposed Project:</b> Roderick (Rod) Richardson is Survey Operations Manager at Batture LLC, overseeing project management, surveying, and drafting for land surveying projects. When he joined the team in 2020, he had 18 years of surveying and drafting experience at a New Orleans engineering, architecture, and land surveying firm. He has experience with a variety of programs, including AutoCAD, Carlson Survey, Leica GEO and Carlson Xport. His experience in rural, coastal, and urban settings has afforded Rod with an extensive knowledge of most surveying equipment and the skill of performing surveying tasks through the use of boats and ATV's. Mr. Richardson has completed surveying and drafting tasks for commercial and residential clients; organizations such as LaDOTD, the Orleans Levee Board, and USACE; and city/local municipalities.

## TEC Professional Services Questionnaire

<b>KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:</b>
<b>Name &amp; Title:</b>
Lauren Williams, PLA, ASLA, GIP Professional Landscape Architect
<b>Project Assignment:</b>
QAQC, Landscape Architecture
<b>Name of Firm with which associated:</b>
Batture, LLC
<b>Years' experience with this Firm:</b>
2 Years
<b>Education: Degree(s)/Year/Specialization:</b>
B.L.A. / 2016 / Design Studies(major), Landscape Architecture(minor) M.L.A. / 2018 / Landscape Architecture
<b>Active registration: Year first registered/discipline:</b>
2022 / Louisiana PLA (Landscape Architect) / W-266 2025 / Louisiana Arborist / 184497
<b>Other experience and qualifications relevant to the proposed Project:</b>
Lauren Williams, PLA is a passionate licensed landscape architect, licensed arborist, and green infrastructure professional, specializing in stormwater management in an urban environment. She is dedicated to creating functional and aesthetically pleasing outdoor spaces that harmonize with the natural environment while meeting the needs of diverse communities. In addition to her technical and design skills, Lauren has expertise in community engagement, organizing public events and collaborating closely with stakeholders to ensure that projects reflect the unique needs and aspirations of the communities they serve. Throughout her experience as a project manager, Lauren has led multidisciplinary teams to deliver projects spanning a wide range of types and scales, from small residential green infrastructure designs to urban parks and reforestation initiatives, as well as large-scale commercial developments and higher education campuses. She has played a key role in award winning projects in green infrastructure in both Louisiana and North Carolina.

## TEC Professional Services Questionnaire

<b>KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:</b>
<b>Name &amp; Title:</b> Paul Mattingly, EI Survey/Civil Designer
<b>Project Assignment:</b> Survey/Civil Engineering Design
<b>Name of Firm with which associated:</b> Batture, LLC
<b>Years' experience with this Firm:</b> 3 Years
<b>Education: Degree(s)/Year/Specialization:</b> B.S./ 2016/ Civil Engineering
<b>Active registration: Year first registered/discipline:</b> EI / 33363/ Civil Engineering / 09.30.2025
<b>Other experience and qualifications relevant to the proposed Project:</b> Paul Mattingly, EI is a Survey Technician at Batture. Originally from Covington, LA, Paul graduated with a B.S. in Civil Engineering from LSU in 2016 and soon began working at a construction company where he developed the skills necessary for quantity take off, cost analysis and model building for a range of clients in the public and private sectors. He is experienced in many software platforms, including AutoCAD and Trimble Business Center. Paul is now diversifying his experience and working as a survey technician to ultimately pursue his Professional Land Surveyor license.

## TEC Professional Services Questionnaire

<b>KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:</b>
<b>Name &amp; Title:</b> Huynh Duc Kevin Dinh, EI Survey/Civil Designer
<b>Project Assignment:</b> Project Engineer
<b>Name of Firm with which associated:</b> Batture, LLC
<b>Years' experience with this Firm:</b> 2 Years
<b>Education: Degree(s)/Year/Specialization:</b> B.S./2019/Civil and Environmental Engineering
<b>Active registration: Year first registered/discipline:</b> EI / 34377 / 2020
<b>Other experience and qualifications relevant to the proposed Project:</b> Huynh Duc Kevin Dinh, EI is an Engineer Intern at Batture specializing in surveying and civil engineering tasks. Kevin graduated from the University of New Orleans in May 2019, excelling in specialized coursework such as Elementary Surveying Measurements and Drones. During college, his involvement in civil engineering extended beyond the classroom. Kevin was involved in the American Society of Civil Engineers, American Concrete Institute, and Society of Women Engineers. He developed leadership skills as the UNO Survey Captain for the ASCE Deep South Conference from 2017-2019. Prior to graduation, Kevin was employed as drafter and land surveying technician for a New Orleans land surveying and engineering firm. Through this experience, he became proficient in using AutoCAD Civil 3D to create architectural and engineering design plans. Additionally, he became a talented field technician in land surveying. At Batture, Kevin assists surveying and civil engineering projects as a drafter and field technician. As an EI, Kevin is involved in various civil design projects within the New Orleans area.

## 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:	
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, Batture is overseeing all professional design and construction administration services for the FEMA HMGP-eligible project site. The project is located in City Park north of the I-610 and explores how the park might be used to manage stormwater and mitigate flooding in the surrounding neighborhoods. For the landscape architecture component of this project, Batture is spearheading a seeding pilot project. Our employees worked closely with LSU Ag Center and local suppliers to develop a series of seed mixes. The application locations, and species varieties contained within each mix, were chosen to best suit the various elevations and water exposure present throughout City Park. The goal of the pilot project is to gather detailed and site-specific data about plant sustainability, functionality, and rate of successful establishment. This data will then be used to inform the overall planting design and implementation.	
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)

### PROJECT NO. 2

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	This project, a component of the Gentilly Resilience District, will 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. The goals for this project are 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, increase recreational opportunities, and develop a replicable model for block-by-block strategies for stormwater management and community resilience across the city. Batture's responsibilities include landscape architecture, stormwater modeling, drainage infrastructure design, stormwater design, and planning/permitting with City agencies.	
Completion Date (Actual or estimated):	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible:
Estimated 2026	\$13,400,000	\$1,640,000

## TEC Professional Services Questionnaire

<b>PROJECT NO. 3</b>		
<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility</b>	
Bucktown BRIC Jefferson Parish, Louisiana  Jefferson Parish Michelle Gonzales Joseph S. Yenni Bldng 1221 Elmwood Park Blvd. Jefferson, LA 70123 504-736-6653 mgonzales@jeffparish.net	The Bucktown BRIC program aims to ensure the longevity and sustainability of this coastal community by finding solutions to stormwater management within the confines of Orpheum Ave, Cherokee Ave, West Esplanade Ave, and Lake Pontchartrain. Batture provided land surveying services as well as conceptual design and landscape architecture. Bature was also responsible for planning and holding two community engagement events to receive feedback from residents and business in the area in an effort to inform functional designs for the project.	
<b>Completion Date (Actual or estimated)</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
December 2023	\$262,813.45	\$61,311

<b>PROJECT NO. 4</b>		
<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
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	This phase of the project focuses on Gretna City Park, an existing public space that occupies nearly 100 acres in the center of the City of Gretna. The existing amenities are focused primarily on passive use with lots of open space, an existing retention pond, forested areas, and some pathways connection to limited parking areas. Project goals included addressing localized flooding and repetitive loss, improving access to the park, introducing more active programming elements, provide landmarks and destinations within the park, provide additional parking, repair existing structure on site such as the outfall weir on Claire Ave, designate pedestrian routes through the park with the use of trails, expand and enhance the existing pond system, improve water quality within the park and district to provide a healthier habitat for local wildlife, and introduce interpretive signage to educate the public about water quality and green infrastructure.	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
September 2020	\$5,605,000	\$20,397.00 (Programming Phase) \$165,100.00 (Design Phase)

## TEC Professional Services Questionnaire

<b>PROJECT NO. 5</b>		
<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
Blue & Green Corridors City of New Orleans New Orleans, Louisiana  Stantec Consulting Services, Inc. Dan Grandal 1340 Poydras Street, Suite 1420 504-654-1758 dan.grandal@stantec.com	The Blue & Green Corridors project is part of the Gentilly Resilience District. Batture was a sub on this groundbreaking resilience and drainage/water management project that aims to transform major boulevards in Gentilly. The large neutral grounds on the major streets in Gentilly present a unique opportunity to construct a network of stormwater management features and multimodal connections. Batture is providing topographic and right-of-way surveys, civil design and landscape architecture on this project. Additionally, this project served to deepen our knowledge of complete street design principles by working side by side with industry experts.	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
2022	\$45,000,000	\$374,053

<b>PROJECT NO. 6</b>		
<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
Dillard Wetlands New Orleans, Louisiana  Freese & Nichols Nina Reins 900 Camp Street, Suite 354 New Orleans, LA 70130 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 landscape architecture services, design analysis and reports, civil engineering, H&H modeling, and structural engineering.	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
Estimated 2026	N/A	\$236,676

## TEC Professional Services Questionnaire

<b>PROJECT NO. 7</b>		
<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
Pontilly Stormwater HMGP Project New Orleans, Louisiana  Fleming Construction Company Debbie Clement 23 E Airline Hwy Kenner, LA 70062 504-464-4000 dclement@flemco.net	The Pontilly Neighborhood Stormwater Network project will reduce flood risk and beautify green spaces in the Pontchartrain Park and Gentilly Woods neighborhoods through the construction of green infrastructure strategies. The project will combine improvements to the Dwyer Canal with a network of interventions along streets, in alleyways, and within vacant lots designed to slow and store stormwater.	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
July 2022	\$15,000,000	\$74,625

<b>PROJECT NO. 8</b>		
<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
City of New Orleans/ DPW Streets Projects 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 has been successfully providing land surveying and civil engineering services on City of New Orleans/ Department of Public Works projects since 2016. Surveying work is completed in accordance with the Department of Public Works standards for street surveys. Drawings include vertical and horizontal project control points, plan & profile drawings and cross sections. Batture utilized contacts with local utility agencies to plot underground utilities located within the street right-of-way. The majority of these projects are Recovery Roads and Hazard Mitigation projects. Batture has conducted surveys for over 750 blocks within the city, solely on the Recovery Roads projects. This translates to over 300,000 linear feet of street surveying. In our roles on these projects we have also surveyed nearly 19,000 linear feet of waterline and over 33,000 linear feet of drainage. Our involvement in the RR Projects covers all of the City of New Orleans: BW Cooper, Central City, Mid City, Lower 9th Ward, City Park, Filmore, Marlyville-Fontainebleau, Leonidas and St. Anthony.	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
Ongoing	Unknown	Unknown

## TEC Professional Services Questionnaire

<b>PROJECT NO. 9</b>		
<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
3969 Tchoupitoulas Street New Orleans, Louisiana  Zangara + Partners Daniel Zangara 3615 Magazine St. New Orleans, LA 70115 504-473-0064 daniel@zangarapartners.com	This project is a mixed-use development proposed for the corners of Austerlitz and Tchoupitoulas. Batture, LLC is tasked with the civil engineering, landscape architecture, and stormwater management components of the project. The landscape architecture component of this site includes designing the site to meet City of New Orleans code requirements for planting and screening, managing stormwater through the use of green infrastructure, and preparing all necessary plans and supporting documents for permit application and successful construction of the project.	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
May 2022	N/A	\$920

<b>PROJECT NO. 10</b>		
<b>Project Name, Location and Owner's contact information:</b>	<b>Nature of Firm's Responsibility:</b>	
Ronald McDonald House New Orleans, Louisiana  Eskew+Dumez+Ripple Jenifer Navard 365 Canal Street, Suite 3150 New Orleans LA 70130 United States 504-561-8686 jnavard@eskewdumezripple.com	This project was the renovation of two buildings of the old U.S. Marine Hospital on Children's Hospitals campus to provide housing to long-term patient families during treatment at Children's Hospital. This project was a part of the ongoing master plan to renovate the U.S. Marine Hospital buildings. Batture provided the landscape architecture and stormwater management services which included tree protection, planting design, and the design of a series of rain gardens. Batture also provided structural engineering for the new 2-story building.	
<b>Completion Date (Actual or estimated):</b>	<b>Estimated Cost:</b>	
	<b>Entire Project:</b>	<b>Work for which Firm was Responsible:</b>
December 2022	\$6,300,000	\$35,700

## 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-licensed landscape architecture, civil engineering, and land surveying firm specializing in site development, stormwater management design, green infrastructure, hydraulic/ hydrodynamic modeling, structural design, and construction management. Based in New Orleans, our company is a certified Small Entrepreneurship (Hudson Initiative) dedicated to Louisiana's progress and protection. Our diverse team includes 4 Professional Engineers, 1 Professional Landscape Architect, and 1 Licensed Land Surveyor with over 70 years of collective experience. Licensed in Louisiana, Mississippi, Alabama, and Florida, we prioritize open communication with clients and deliver services that enhance communities and the environment, integrating low impact design principles into our projects. Leveraging our relationships with permitting authorities, we navigate project challenges efficiently. Additionally, our multi-disciplinary approach allows seamless coordination across professions. We are deeply committed to projects that enhance Louisiana's community resilience while preserving its cultural heritage, and we take pride in projects that combine our design services with our dedication to this commitment. In fact, much of our work focuses on urban infrastructure development, from historic renovations to large-scale green infrastructure projects.

We strive to embody a mission that makes the world a better place directly through our services. In fact, Batture LLC is the only civil engineering company to be accepted into the business program at Propeller, the New Orleans non-profit that works with socially minded companies. It's not just our pro bono work that got us there, but our vision to help transform civil engineering. We believe civil engineering firms will be most successful long-term when they work profitably and collaboratively with the community to discover our greatest opportunities for impact.

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

**Signature:**  **Print Name:** Robert J. Mora, II

**Title:** Owner & Managing Partner **Date:** 07/10/2024

## TEC Professional Services Questionnaire

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

SOQ #24-020 Coastal Engineering Consulting Services as needed parish wide. Resolution No. 144205

**B. Firm Name & Address:**

Coast & Harbor Engineering, Inc.  
PO Box 202737  
Austin, TX 78720



**COAST & HARBOR  
ENGINEERING**

**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:**

Josh Carter, PE, BC.CE  
PO Box 202737  
Austin, TX 78720

office: (512) 615-0816  
email: josh.carter@coastharboreng.com  
LA PE: 33391

**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.**

Josh Carter, PE, BC.CE  
PO Box 202737  
Austin, TX 78720

office: (512) 615-0816  
email: josh.carter@coastharboreng.com  
LA PE: 33391

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

<input type="checkbox"/> Administrative	<input type="checkbox"/> Estimators	<input type="checkbox"/> Specification Writers
<input type="checkbox"/> Architects (Licensed)	<input type="checkbox"/> Geologists	<input type="checkbox"/> Structural Engineers
<input type="checkbox"/> Chemical Engineers	<input type="checkbox"/> Geotechnical Engineers	<input type="checkbox"/> Graduate Engineers
<input type="checkbox"/> Civil Engineers	<input type="checkbox"/> Interior Designers	<input type="checkbox"/> Project Managers
<input type="checkbox"/> Construction Inspectors	<input type="checkbox"/> Landscape Architects	<input type="checkbox"/> Clerical
<input type="checkbox"/> Ecologists	<input type="checkbox"/> Land Surveyor	<input type="checkbox"/> Grant/Funding Specialist
<input type="checkbox"/> Electrical Engineers	<input type="checkbox"/> Mechanical Engineers	<input type="checkbox"/> Sanitary Engineers
<input type="checkbox"/> Engineer Intern	<input type="checkbox"/> Environmental Engineers	<input type="checkbox"/> <u>12</u> Other (Coastal Engineers)
<input type="checkbox"/> Professional Land Surveyors		<b><u>12</u> TOTAL</b>

**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. 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:**  
 12

## 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:**

Josh Carter, PE, BC.CE - Principal

**Project Assignment:**

Principal-in-Charge

**Name of Firm with which associated:**

Coast & Harbor Engineering, Inc.

**Years' experience with this Firm:**

5 months

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

MS, Civil and Environmental Engineering, Massachusetts Institute of Technology / 2002 / Coastal Engineering  
BS, Ocean Engineering, Texas A&M University / 1999 / Coastal Engineering

**Active registration: Year first registered/discipline:**

Professional Engineer: LA, #33391, 2007; TX, #97258, 2006; FL, #80996, 2016; MS, #18618, 2008;  
AL, #34115-E, 2013; VA, 57398, 2017

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

Josh is a Principal Coastal Engineer. He has participated in 100s of coastal projects along the Gulf and as Engineer of Record for more than 20. He designs coastal structures such as breakwaters, groins, revetments, living shorelines; beach/dune nourishment and marsh creation; and navigation channels. Josh has worked in nearly all parts of coastal Jefferson Parish and has working models of Lake Pontchartrain, Barataria Bay, and areas north, as well as all of Grand Isle. Josh has delivered projects up to \$500M in construction.

**Selected experience**

**Bucktown Harbor Marina Entrance Improvement Project, Jefferson Parish, LA:** Principal-in-Charge for evaluation, design, and construction of improvements to the entrance of the Bucktown Harbor Marina to reduce wave energy penetration into the marina. Oversaw data collection, wave modeling, and feasibility study. Directed the design and permitting of the project. Managed construction administration and inspection.

**Grand Isle Barrier Shoreline Stabilization Study, Jefferson Parish, LA:** Coastal Engineer for a study which developed a long-term solution to reduce storm damage and create a recreational beach. He conducted coastal engineering analysis and evaluated alternatives through numerical modeling. His coastal engineering analysis led to an understanding of the processes controlling the shoreline change at Grand Isle which allowed for solutions developed to address the processes responsible for shoreline change.

**Grand Isle Levee/Dune Hot Spot Emergency Stabilization and Repair, Grand Isle, Jefferson Parish, LA:** Project Director for emergency project to stabilize an erosional hotspot has formed on the western end of the Island where chronic erosion has continued to threaten the USACE levee/dune system, adjacent infrastructure, and recreational beach. The project consisted of constructing a 2,800-foot-long stone revetment for immediate protection, and design of beach and breakwaters for long-term stabilization. Designed 5 rock breakwaters and a 750,000 CY beach nourishment along the westernmost 2 miles of Grand Isle including design of a borrow site at the Caminada Pass ebb shoal.

**Jefferson Floodwall – Hurricane Forces on I-10 Bridge, Jefferson Parish, LA:** Coastal Engineer responsible for analyzing hurricane wave-induced forces and moments on bridge span locations at the I-10 bridge.

## TEC Professional Services Questionnaire

**Josh Carter** continued

**East/West Grand Terre Island Shoreline Stabilization, Jefferson and Plaquemines, LA:**

Coastal Engineer responsible for evaluating the shoreline erosion rate and predicting the rate of shoreline retreat for each of the proposed beach nourishment alternatives. A sophisticated methodology was pioneered to evaluate the morphology and lifetime of the beach nourishment by combing cross-shore profile modeling, 2-dimensional wave and wave-induced current modeling, and the measured coastal erosion at the site. This methodology led to a better understanding of the capacity of each proposed nourishment alternatives to withstand the erosive forces acting on the islands' shorelines.

**Bayou Bonfouca Marsh Creation – Numerical Modeling, St. Tammany Parish, LA:**

Project Manager for numerical modeling conducted to support a marsh creation project. He directed the evaluation of impacts of dredging the proposed borrow source on changes to the local wave climate and resulting changes in shoreline morphology. He also directed 3-dimensional circulation and water quality modeling to investigate the potential for the borrow source to act as a trap for low dissolved oxygen water and developed variations to the borrow cut design to maximize flushing of the borrow cut to eliminate water quality impacts.

**Elmer's Island Breach Repair, Jefferson Parish, LA:**

Coastal Engineer who computed statistics for waves, winds, water levels, and storm occurrence. He also directed and conducted numerical modeling in support of the analysis and design calculations. Modeling work included circulation modeling, wave penetration modeling, and shoreline morphologic modeling. Results from these analyses were used to develop alternative breach fill solutions. Mr. Carter also managed field data collection tasks including topographic/bathymetric surveys, geotechnical field investigation, sediment borrow source investigation and preliminary and final design assistance.

**Living Shoreline Demonstration Project, St. Bernard Parish, LA:**

Project Manager for a demonstration project which evaluated living shoreline products to reduce wave energy that reached the shore and stimulate oyster growth to increase the biodiversity in the immediate area. He was responsible for the overall project delivery, Mr. Carter directed the morphologic analysis, evaluation nine

living shoreline products, and design. The evaluation investigated the product's ability to reduce wave energy past the structure utilizing 3D computational fluid dynamics modeling tools. He also managed final design, bidding phase services and managed construction administration.

**Mandeville Wetlands Protection, Mandeville, LA:**

Project Manager for a protection project needed to reduce erosion to the cypress wetland, maintain the hydraulic connection with stormwater outfalls that feed into the wetlands and into Lake Pontchartrain, and serve as a walkway between two adjacent parks. He was responsible for data collection efforts and analysis of existing conditions including wind and wave climate, tide elevations, and sediment transport patterns. He also directed an alternatives analysis for three alternatives: a rock revetment, a living shoreline, and a hybrid structure which combined the advantages of the revetment and living shoreline concepts.

**Cameron Parish Shoreline Restoration, Cameron Parish, LA:**

Project Manager for a \$42M beach nourishment project along the Gulf Coast Beach which consisted of importing dredged sand from 20 miles offshore. He was responsible for existing and new field data collection, coastal engineering analysis, project alternatives development, alternatives analysis, and borrow source investigation, and managed acquisition of required regulatory approval for its mining. He also participated in the analysis of analytical, empirical, and numerical modeling of waves, tides, sediment transport and shoreline morphology. The design team utilized the results of the coastal engineering analysis to develop alternative shoreline nourishment methods and configuration. He also managed the construction oversight services.

**Bio-Engineered Oyster Reef Demonstration, Cameron Parish, LA:**

Project Manager for a demonstration project which evaluated a new concrete oyster reef technology, the Oysterbreak™ and compared the performance of the Oysterbreak™ structures to traditional rock structures in their ability to provide shoreline stabilization to a marsh shoreline in the open Gulf of Mexico in very weak soil conditions. He was responsible for the analytical and numerical modeling, including 2D and 3D VOF numerical modeling of the structure's stability and ability to reduce wave impacts on the shoreline. He also coordinated and developed the final design, technical specifications, construction contracting documents, and coordinating with agencies and client for project review.

## TEC Professional Services Questionnaire

<b>KEY PERSON, SPECIALIST, OR INDIVIDUAL</b>
<b>Name &amp; Title:</b>
Scott Fenical, PE, BC.CE, D.PE - Principal Coastal Engineer
<b>Project Assignment:</b>
Senior Coastal Engineer
<b>Name of Firm with which associated:</b>
Coast & Harbor Engineering, Inc.
<b>Years' experience with this Firm:</b>
5 months
<b>Education: Degree(s)/Year/Specialization:</b>
MS, Ocean Engineering, Texas A&M University / 1996 / Coastal Engineering BS, Mechanical Engineering, University of California, Santa Barbara / 1994
<b>Active registration: Year first registered/discipline:</b>
Professional Engineer: CA, 59466, 1999; TX, 116337, 2014
<b>Other experience and qualifications relevant to the proposed Project:</b>
<p>Mr. Fenical's 29 years of experience also includes planning, engineering, and design of a wide range of shoreline protection projects such as beach nourishment, coastal armoring, inlet and waterway maintenance, and dune restoration. He prepares and reviews engineering plans and designs for coastal/ shoreline structures including maintenance dredging, habitat restoration, artificial reef development, breakwaters, groins, revetments, beach nourishment, and dune restoration. His numerical modeling and analysis experience includes wave transformation, wave-generated nearshore circulation, tide and wind-generated circulation, sediment transport under waves and currents, and water quality.</p> <p><b>Selected experience</b></p> <p><b>Caminada Bridge Design Criteria Development, Caminada Pass, Jefferson Parish, LA:</b> Coastal engineer responsible for storm surge analysis and modeling, wave transformation modeling and wave loading analysis for the re-development of Caminada Pass Bridge. Mr. Fenical also performed evaluation of historical hurricane data which included measuring storm surge, wave heights, and hurricane parameters. Based on evaluation of these hurricane parameters, design hurricane events were estimated for the 100-year event for the project design. Storm surge was evaluated based existing studies, as well as those predicted by numerical modeling tools. He also developed a bathymetry/topography database relevant to the project site and a detailed numerical modeling domain covering the entire Gulf of Mexico and lower half of Louisiana.</p> <p><b>Grand Isle Shoreline Stabilization Study, Jefferson Parish, LA:</b> Coastal Engineer who worked on the coastal processes analysis team developing and implementing numerical modeling for existing conditions and for proposed alternatives. Mr. Fenical developed the wave transformation modeling as well as the combined tide, wave, and wind-induced currents, which were used to drive sediment transport and sediment transport pathway models. Results of the evaluation were used in the design to achieve the optimal performance of various alternative components.</p> <p><b>East/West Grand Terre Islands Shoreline Stabilization Project, Jefferson/Plaquemines Parish, LA:</b> Coastal Engineer responsible for overseeing the coastal modeling. The modeling included regional and nearshore spectral wind wave transformation, nearshore wave-induced currents, regional tidal current circulation verified with field data, coupled wave-induced and tidal-induced currents, and sediment transport under combined waves and currents. The sediment transport modeling was coupled with a shoreline response model to predict beach fill longevity. Also, the fate and longevity of the beach fill was modeled with particle tracking models. Mr. Fenical performed marsh fill volume calculations and cohesive sediment transport modeling of the marsh material under waves to determine scour of the marsh material over the project lifetime.</p>

## TEC Professional Services Questionnaire

<b>KEY PERSON, SPECIALIST, OR INDIVIDUAL</b>
<b>Name &amp; Title:</b>
Arpit Agarwal, PE – Principal
<b>Project Assignment:</b>
Senior Coastal Engineer
<b>Name of Firm with which associated:</b>
Coast & Harbor Engineering, Inc.
<b>Years' experience with this Firm:</b>
5 months
<b>Education: Degree(s)/Year/Specialization:</b>
MS, Civil Engineering, University of Delaware / 2005 / Coastal Engineering Bachelor of Technology, Naval Architecture & Ocean Engineering, Indian Institute of Technology, 2003
<b>Active registration: Year first registered/discipline:</b>
Professional Engineer: LA 46339, 2021; TX 104878, 2009
<b>Other experience and qualifications relevant to the proposed Project:</b>
<p>Mr. Agarwal has served as a Project Manager and Coastal Engineer in planning and data collection efforts, alternatives analyses, and design for a variety of coastal work such as shoreline stabilization, coastal protection, and marine terminal projects. He is proficient in performing sophisticated analytical and numerical analysis on a variety of meteorologic and oceanographic data types. His experience has ranged from developing his own computer codes and using available numerical models to performing modeling and analysis of wave transformation, tide and wind induced currents, propeller wash, sediment transport, shoreline change, and morphology.</p> <p><b>Selected experience</b></p> <p><b>Grand Isle Levee/Dune Emergency Stabilization, Grand Isle, LA:</b> Coastal Engineer responsible for managing the coastal engineering analysis which included statistical analysis of coastal processes, wave and circulation modeling, morphology analysis including shoreline change and bed bottom morphology, shoreline morphology modeling and development of sediment budget along the Grand Isle shoreline. He also helped in the development and analysis of different alternatives for mitigating shoreline erosion.</p> <p><b>Cameron Parish Shoreline Stabilization, LA:</b> Coastal Engineer for beach nourishment project that placed 2 million cubic yards of sand along the shoreline protecting State Highway 82/27. He was responsible for conducting coastal modeling to determine the fate of beach nourishment material. He developed and analyzed configurations of beach nourishment and identified the most feasible. He utilized wave modeling to transform waves to nearshore to design the project. His work also helped in determining if the dredging of borrow source sites had any adverse impact on the current shoreline. Additionally, he developed a dynamic sediment budget to predict the future shoreline positions.</p> <p><b>Bayou Bonfouca Marsh Creation - Numerical Modeling, St. Tammany Parish, LA:</b> Arpit developed wave models for evaluating changes to the wave climate leeward of the proposed borrow sites for the Bayou Bonfouca Marsh Creation Project. Mr. Agarwal conducted the borrow area impact analysis using the numerical model SWAN to assess the impact of the borrow area on local wave energies impacting the shoreline.</p> <p><b>Bird's Foot Delta Hydrologic Restoration, Plaquemines Parish, LA:</b> The 521,000-acre delta has degraded and restoration is proposed through increasing the hydraulic connection between the Mississippi River, main passes, and crevassing for land building. Mr. Agarwal conducted hydraulic and morphologic numerical modeling incorporating riverine and coastal hydrodynamics and 3D effects to capture salinity over a large range of scales to capture river processes down to detailed crevasse splay land building, and evaluated a dredge template that balances long-term land building and habitat benefits without impacts to navigation.</p>

## TEC Professional Services Questionnaire

<b>KEY PERSON, SPECIALIST, OR INDIVIDUAL</b>
<b>Name &amp; Title:</b>
Craig Harter – Coastal Engineer
<b>Project Assignment:</b>
Coastal Engineer
<b>Name of Firm with which associated:</b>
Coast & Harbor Engineering, Inc.
<b>Years' experience with this Firm:</b>
5 months
<b>Education: Degree(s)/Year/Specialization:</b>
MS, Ocean Engineering, Texas A&M / 2015 / Coastal Engineering BS, Civil Engineering, California Polytechnic State University, San Luis Obispo, 2010
<b>Active registration: Year first registered/discipline:</b>
Professional Engineer: TX, 134941, 2020
<b>Other experience and qualifications relevant to the proposed Project:</b>
<p>Mr. Harter is a professional engineer with of experience in coastal modeling. He is skilled in a variety of numerical modeling software for coastal processes such as wave transformation (SWAN), general circulation and storm surge (ADCIRC), and detailed hydrodynamics (Flow 3D). Mr. Harter has effectively created, calibrated, and validated modeling tools to understand the coastal setting and analyze project performance.</p> <p><b>Selected experience</b></p> <p><b>Grand Isle Levee Dune and Beach Nourishment, Coastal Protection and Restoration Authority of Louisiana, Grand Isle, LA.</b> Coastal engineer responsible for developing and calibrating a dynamically coupled 2D depth averaged hydro – morphological model in Delft 3D to simulate inlet dynamics and sediment bypassing across the inlet on the west end of Grand Isle. Utilized the model to identify changes to the inlet dynamics under the influence of two breakwater scenarios and three proposed dredge pit scenarios. Used the changes to bypassing from the coupled model to force a 1D shoreline response model (Gencade) to identify potential changes to the shoreline position as a result of the proposed project alternatives. (2016 - 2017).</p> <p><b>Cameron Creole Marsh Hydraulic Analysis, Coastal Protection and Restoration Authority of Louisiana, Cameron Parish, LA:</b> Coastal engineer. Developed an innovative approach to simulating tidal currents by using machine learning technology by creating a neural network that was trained to act as an accurate and efficient surrogate hydrodynamic model that predicted tidal currents and water levels 300,000 times faster than the numerical model and with remarkable accuracy. His work accelerated the computational timeline of more than 200 storm surge scenarios. Developed the methodology to evaluate the complete hurricane-induced risks including water elevation, wave conditions, and probabilistic hydrodynamic loads on project features.</p> <p><b>Little Bay Drainage Improvements, Rockport, TX:</b> Coastal engineer for hydrological, hydraulic, and hydrodynamic circulation modeling of Little Bay. Developed joint annual exceedance probability curves for storm surge and precipitation using statistical modeling from historical data. Simulated the joint influence of extreme surge and precipitation using HEC-RAS 5 in terms of flood extent and peak velocity. Further analyzed the sensitivity of the hydraulic system to the latency between surge and precipitation peaks as well as the shape of the storm surge hydrograph. The results of the analysis will be used by our team to explore potential mitigation measures to increase the overall circulation between Little Bay and Aransas Bay and alleviate prolonged flooding.</p>

## TEC Professional Services Questionnaire

<b>KEY PERSON, SPECIALIST, OR INDIVIDUAL</b>
<b>Name &amp; Title:</b>
Thomas Everett, PE – Coastal Engineer
<b>Project Assignment:</b>
Coastal Engineer
<b>Name of Firm with which associated:</b>
Coast & Harbor Engineering, Inc.
<b>Years' experience with this Firm:</b>
5 months
<b>Education: Degree(s)/Year/Specialization:</b>
MS, Coastal and Ecological Engineering, Louisiana State University / 2016 / Coastal Engineering BS, Civil Engineering, Louisiana State University 2014
<b>Active registration: Year first registered/discipline:</b>
Professional Engineer: TX, #137249, 2020
<b>Other experience and qualifications relevant to the proposed Project:</b>
<p>Thomas Everett, PE is a Professional Engineer with nearly a decade of experience in coastal analyses, design, and restoration projects, working as a technical lead, project manager and staff manager. Work history includes complex modeling efforts in nearshore hydrodynamics, circulation, riverine sediment transport and morphology, and field data collection and processing with a focus in the Gulf of Mexico, and extensive experience in Louisiana and Texas.</p> <p><b>Selected experience</b></p> <p><b>Bird's Foot Delta Hydrologic Restoration Project (MR-173):</b> Lead project engineer for a project that proposes to restore the hydrology, freshwater, and sediment delivery to the Eastern Bird Foot Delta. Project engineer responsible for developing understand the dynamics of the Bird's Foot Delta developing modeling approach. Responsible for 3D hydraulic and morphologic coastal modeling of the Lowermost Mississippi River and Bird's Foot Delta complex.</p> <p><b>Pontchartrain Pond Hydrodynamic Assessment:</b> Project manager and coastal engineer for a project that includes the analysis and design of a channel to restore circulation to Pontchartrain Pond along the south shore of Lake Pontchartrain in Jefferson Parish, LA. A fully coupled surface wave and circulation model of Pontchartrain Pond and alternative channel designs were developed. The model calculated flow velocities and water quality within the designed channels to determine channel stability.</p> <p><b>Slidell Breakwater Restoration:</b> Project manager and coastal engineer for a project that developed a design concept and detailed cost estimate for a breakwater system in Slidell, LA on the shore of Lake Pontchartrain. A coastal engineering analysis was conducted to develop a project site understanding, to aid in numerical modeling, alternatives analysis, and development of a preliminary shoreline protection system. The goal of the shoreline protection system was to reduce storm induced wind-waves along the project shoreline. Numerical modeling was used to develop, evaluate, and recommend alternatives at the project site.</p> <p><b>Biloxi Marsh Living Shoreline Project, Coastal Protection and Restoration Authority of Louisiana (CPRA), St. Bernard Parish, LA:</b> Coastal Engineer for a living shoreline project that will build approximately 11 miles of shoreline protection to reduce shoreline erosion and enhance ecological habitat. Constructed a nearshore wave model to transform offshore wave energy to the breakwater structure. Validated the model against wave gauge measurements. Additionally, he assisted in a comprehensive shoreline change analysis to determine short- and long-term retreat rates across the project site. From the shoreline change analysis and wave modeling, a relationship between incident wave energy and shoreline retreat rate was determined for each breakwater type.</p>

## 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:**  
**Bucktown Harbor Marina Entrance Improvement Project**

Jefferson Parish Ecosystem and Coastal Management, Michelle Gonzales: (504)736-6653

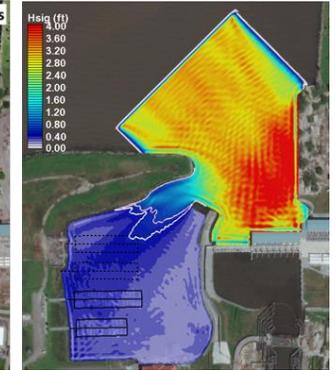
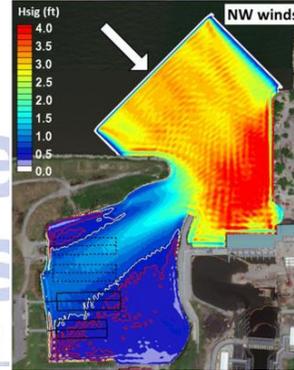
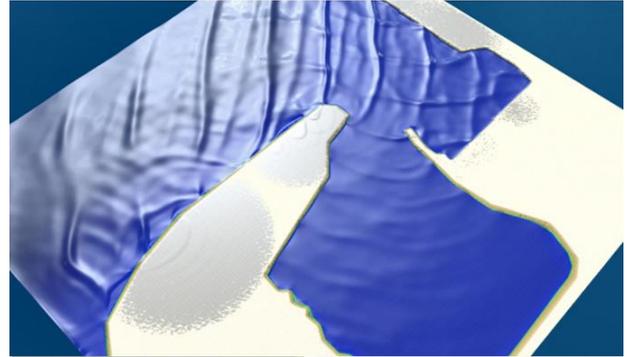
**Nature of Firm’s Responsibility:**

See below

Ships were experiencing large motions during regular winter storm events. Coast & Harbor Engineering (CHE), as part of Mott MacDonald\*, developed alternative solutions including a variety of structural modifications to the entrance and reconfiguration of the entrance channel. The improved entrance provides calm mooring conditions and improved navigation safety.

We evaluated wave energy penetration into the Marina Entrance which caused unacceptable motion of vessels moored in the marina. Waves were shown to diffract around the entrance as well as reflect off of the eastern wall of the 17<sup>th</sup> Street Canal outfall. A number of entrance configurations were developed and tested using wave modeling to provide an entrance that reduced waves to an acceptable level while still providing for safe navigation through the entrance. The recommended solution was coordinated with the Marina Tenants, US Coast Guard, the USACE, SLFPA-E, CPRA and the Parish.

The new entrance was designed and all permits were obtained for the project construction, including a USACE Section 10/404 permit, a USACE Section 408 approval in coordination with SLFPA-E and CPRA, and a SLFPA-E permit.



*Top: modeling of waves entering marina; middle: wave modeling of (left) existing conditions and (right) with recommended solution, and bottom: completed entrance jetty.*

CHE, working as Mott MacDonald, provided engineering services during construction as well as construction inspection. Construction was completed in December 2022, with final acceptance obtained in April 2023.

*\*CHE staff provided services as part of Mott MacDonald for Jefferson Parish from 2018-2023, and former CHE staff re-formed CHE in February 2024.*

Completion Date (Actual or estimated)	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible
April 2023	Construction: \$1.09M	Engineering and Construction Admin: \$219K

## TEC Professional Services Questionnaire

### PROJECT NO. 2

**Project Name, Location and Owner's contact information:**

**Grand Isle Levee/Dune Emergency Stabilization, Jefferson Parish, LA**

CPRA, Rudy Simoneaux (225) 342 0981

**Nature of Firm's Responsibility:**

See below

In 2008, CHE engineers\* conducted a study to evaluate historical construction activities along the Grand Isle Gulf shoreline. We determined coastal processes and forces that controlled shoreline stability and developed long-term engineering solutions and recommendations that would provide storm damage reduction, preserve structural integrity for the Grand Isle gulf shoreline.



Since 2008, a series of projects have been undertaken by the USACE based on CHE's recommendations. The USACE projects have stabilized much of the Grand Isle shoreline however, an erosional hotspot has formed on the western end of the Island where chronic erosion has continued to threaten the USACE levee/dune system, adjacent infrastructure, and recreational beach. The CPRA employed CHE\* to develop a solution to stabilize this hot-spot.



Our engineers conducted an analysis to understand the coastal processes and morphology at the hot spot. We evaluated regional morphology through a 2d morphologic model and developed a sediment budget. We then used these findings to develop and evaluate alternatives to reduce storm damage and stabilize the western shoreline. The four alternatives included replacing the GI-01C project template, larger scale beach nourishment, beach nourishment and breakwaters, and beach nourishment and headland breakwaters. These alternatives were evaluated by their performance, cost, and recreational value.



A 2,800-foot-long stone revetment was constructed as a temporary solution, and later 5 breakwaters and a 750,000 CY beach nourishment was design and constructed. CHE provided engineering design and construction administration for each of these projects.

*\*CHE staff provided services as part of Mott MacDonald for CPRA from 2014-2024, and former CHE staff re-formed CHE in February 2024 and continue to provide services to CPRA as CHE.*

Completion Date (Actual or estimated)	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible
March 2021	Construction: \$15M	Engineering and Construction Admin: \$500k

# TEC Professional Services Questionnaire

## PROJECT NO. 3

**Project Name, Location and Owner's contact information:**

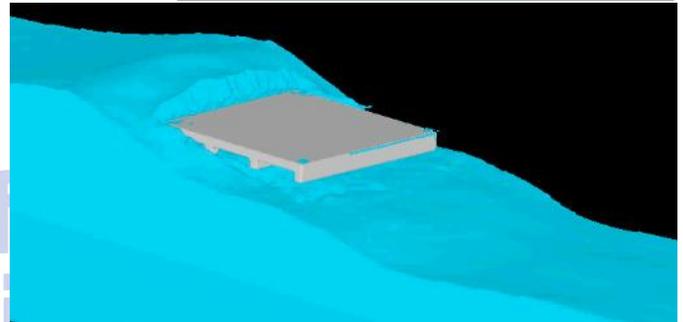
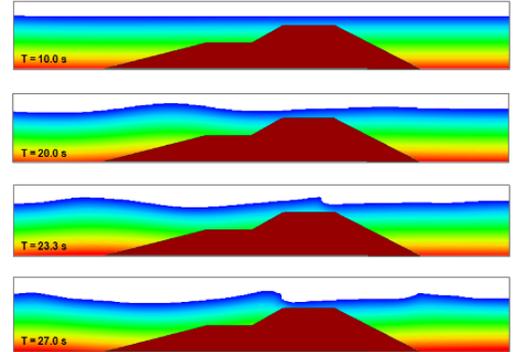
**Hurricane Forces on Jefferson Lakefront Floodwall, Jefferson Parish, LA**  
 LADOTD, Rahman & Associates, Inc. Rahman Bhatti (504) 469-0022

**Nature of Firm's Responsibility:**

See below

CHE engineers\* analyzed three proposed floodwall alternatives for the Jefferson Lakefront floodwall at the intersection with the I-10 Bridge by conducting numerical modeling and computing hurricane wave-induced forces and moments on selected bridge span locations.

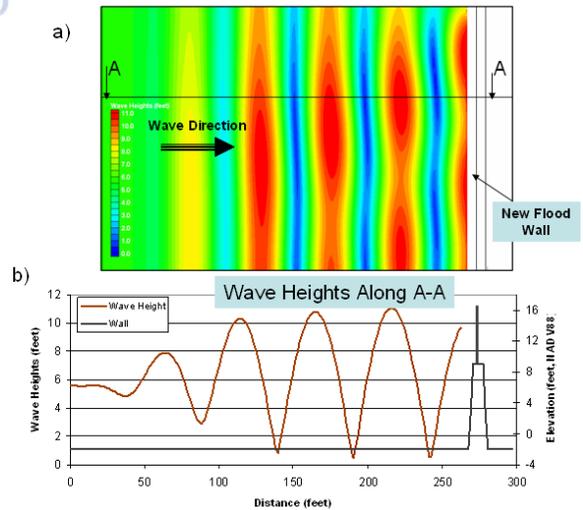
We conducted an analysis to determine the effects of the existing floodwall on waves during the design hurricane event. Hurricane wave forces and moments about the trailing edge were evaluated using AASHTO Guide Specifications. We used 2-D and 3-D computational fluid dynamics (CFD) models to evaluate the effects of the submerged existing floodwall on transformation of incident wave parameters to the selected bridge span locations. Then, our engineers determined input wave parameters to be used for wave force calculations from the numerical modeling results. We evaluated two combinations of applied forces and moments on the selected bridge spans (maximum vertical force and maximum horizontal force) following AASHTO guidelines. Results were used in the design of the floodwall.



Existing conditions water surface elevation from CFD modeling results

\* CHE staff provided professional engineering services from 2003 to 2014, and as part of Mott MacDonald from 2014-2024. Former CHE staff reformed CHE in February 2024.

Example wave transformation modeling results, interaction with vertical wall



Completion Date (Actual or estimated)	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible
2009	Unknown	\$27k

## TEC Professional Services Questionnaire

### PROJECT NO. 4

**Project Name, Location and Owner's contact information:**  
**Caminada Bridge Design, Caminada Pass, Jefferson Parish, LA**  
 LADOTD, Rahman & Associates, Inc. Rahman Bhatti (504) 469-0022

**Nature of Firm's Responsibility:**  
 See below

Louisiana Department of Transportation and Development (LADOTD) required technical information on wave forces for the Caminada Bridge design. Caminada Bridge is located in Caminada Pass. Caminada Pass separates the Caminada-Moreau Headlands (CMH) from Grand Isle. Caminada Pass connects the Gulf of Mexico on the south side to Barataria Bay to the North. Louisiana Highway 1 runs from the CMH to Grand Isle and is connected by the bridge over Caminada Pass.



The project vicinity is subject to high winds, storm surge, and wave impacts due to tropical storm and hurricane events that dominate the design conditions by becoming completely inundated by storm surge during major storm events.

CHE engineers\* developed statistical information on extreme wave storm events and hurricanes and coordinated with LADOTD on the design events for the analysis. The design storm event was selected based on statistical analysis of historical events (included Hurricane Katrina) at the project site in coordination with LADOTD. The maximum water surface elevation was determined based on the results of numerical modeling, using a 2-Dimensional circulation numerical model (ADCIRC) and a spectral wave generation/propagation model (SWAN).

Wave forces on the bridge were determined using the most advanced engineering methods and numerical models. Wave forces calculations included vertical forces on the bridge deck and on pile caps, and horizontal forces on piles, girders, railings and pile caps.

We reviewed a series of draft and final reports from AASHTO and became familiar with the AASHTO methodology for computing wave forces. We also computed vertical forces on Caminada Bridge using the AASHTO methodology.

The results of the computations derived from the AASHTO methodology were compared to the results of the computations derived from our methods and an evaluation of the differences was reported to LADOTD.

*\*CHE staff provided professional engineering services from 2003 to 2014, and as part of Mott MacDonald from 2014-2024. Former CHE staff re-formed CHE in February 2024.*

Completion Date (Actual or estimated)	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible
2008	Unknown	\$70k

## TEC Professional Services Questionnaire

### PROJECT NO. 5

**Project Name, Location and Owner's contact information:**  
**Biloxi Marsh Living Shoreline Project (PO-0174), St. Bernard Parish, LA**  
 CPRA, Rudy Simoneaux (225) 342 0981

**Nature of Firm's Responsibility:**  
 See below

The Biloxi Marshes consist of approximately 121,000 acres of brackish and salt marshes, which provide an important storm buffer for New Orleans as well as key habitat and ecosystem services. The marshes have been greatly impacted by shoreline erosion from wind-driven waves.

The project created 11 miles of bioengineered oyster reef breakwater fringing the marshes to reduce shoreline erosion, prevent further marsh degradation, promote community resilience, and enhance local fisheries and oyster production. The artificial oyster reef coastal structures were created using precast concrete units in a variety of configurations provide coastal protection and ecosystem restoration benefits by using artificial reefs to reduce wave energy impacting the shoreline thereby reducing erosion and increasing coastal habitat. CHE Engineers\* provided planning, data collection, coastal engineering, engineering design, created detailed plans and specifications and provided engineering services during construction.

CHE Engineers evaluated project feasibility assessment. We conducted detailed coastal modeling and analysis to develop an understanding of the coastal processes acting at the site. We conducted wave modeling to determine the wave energy impacting the shoreline and evaluated historical shoreline change rates. This information was used to develop a model of shoreline erosion as a function of wave energy. We then developed detailed 3D computational fluid dynamic (CFD) model simulations of 12 artificial reef units (ARU) in multiple configurations to determine the wave interactions and wave transmission through the reef structures for the local wave climate. Multiple alternative project layouts were evaluated across the 11 mile project shoreline; the best performing layout was computed to save between 133 and 145 acres of wetlands over the next 20 years and provide 129 acres of reef habitat while minimizing impacts to the local habitat during construction.

CHE Engineers developed final design plans, specifications, and construction contract documents, which allowed for procurement of ARUs in a competitive process which are all protected by patent.

CHE Engineers, along with its subconsultants, provided construction administration, engineering support, and inspection throughout construction.

We evaluated construction progress and schedule compliance, meeting environmental regulatory requirements, provided daily inspection in a remote site with multiple working plants, provided regular reporting of progress, change order review, baseline and monthly schedule review. Construction was completed 9 months ahead of schedule (55% of allotted time) and \$8M (15%) under budget.

*\*CHE staff provided services as part of Mott MacDonald for CPRA from 2014-2024, and former CHE staff re-formed CHE in February 2024 and continue to provide services to CPRA as CHE.*



Completion Date (Actual or estimated)	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible
2023	\$51M	\$3.2M

## TEC Professional Services Questionnaire

### PROJECT NO. 6

**Project Name, Location and Owner's contact information:**

**Cameron-Creole Hydraulic Restoration Project (CS-87) Cameron Parish, LA**  
 CPRA, Katie Freer (225) 342-4635

**Nature of Firm's Responsibility:**

See below

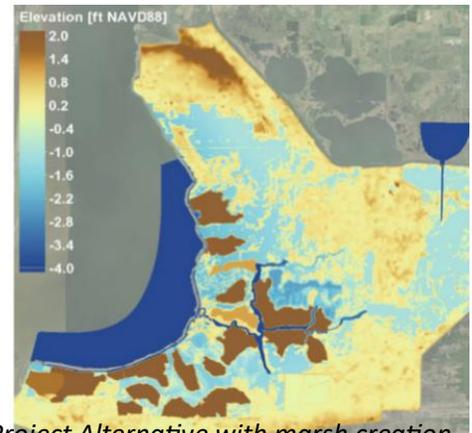
The Cameron-Creole watershed in southwest Louisiana has experienced wetland loss due to saltwater intrusion and flood stress. In the 1950s, the construction of the levee system was carried out to mitigate the effects of saltwater intrusion. While the flow control structures have acted to limit saltwater intrusion from the lake to the marsh, they have also exacerbated flood stress during and after heavy rainfall events by decreasing the hydraulic connectivity with Calcasieu Lake.

CHE Engineers\* evaluated alternatives to improve the ability to manage the water level using machine learning technology. These options consisted of increasing the area of the gate structures, converting the gate structures to flap-gates or gates that only allow water to flow out of the marsh, and increasing the drainage area by adding additional flap-gates. The Machine Learning data driven model allowed us to simulate over 8,000 variations of the additional flap gates within minutes and assisted the team in developing an optimal solution. This analysis revealed that the addition of one-way water control structures could help improve the drainage of the area and improve marsh health.

Our engineers further explored the various characteristics of the water control structures and their potential impact on the health of the Cameron-Creole watershed using a high-resolution numerical model. The project alternatives included different configurations of added one-way water control structures as well as conveyance improvements and large-scale marsh creation features. We included the marsh creation cells within the model; results showed improving conveyance around the new marsh cells are important to overall watershed marsh health.

The construction of one-way water control structures will reduce the average water level in the marsh and increase the overall area of healthy marsh. We identified seven locations along the lake rim that are suitable for the construction of these structures. The addition of 4,000 acres of new marsh could help improve the drainage of this area. Other improvements determined as part of our analysis include the dredging of the Grand Bayou and extending the connection of the East Prong to the eastern portion of the watershed.

*\*CHE staff provided services as part of Mott MacDonald for CPRA from 2014-2024, and former CHE staff re-formed CHE in February 2024 and continue to provide services to CPRA as CHE.*



*Project Alternative with marsh creation*



*Flow paths of hydraulic conveyance in the Cameron-Creole Watershed for preferred*

Completion Date (Actual or estimated)	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible
2022	Est. \$160M	\$250k

## TEC Professional Services Questionnaire

### PROJECT NO. 7

**Project Name, Location and Owner's contact information:**  
**Bayou Bonfouca Marsh Creation - Modeling St. Tammany Parish, LA**  
 CPRA, Shannon Haynes (225) 342-9424

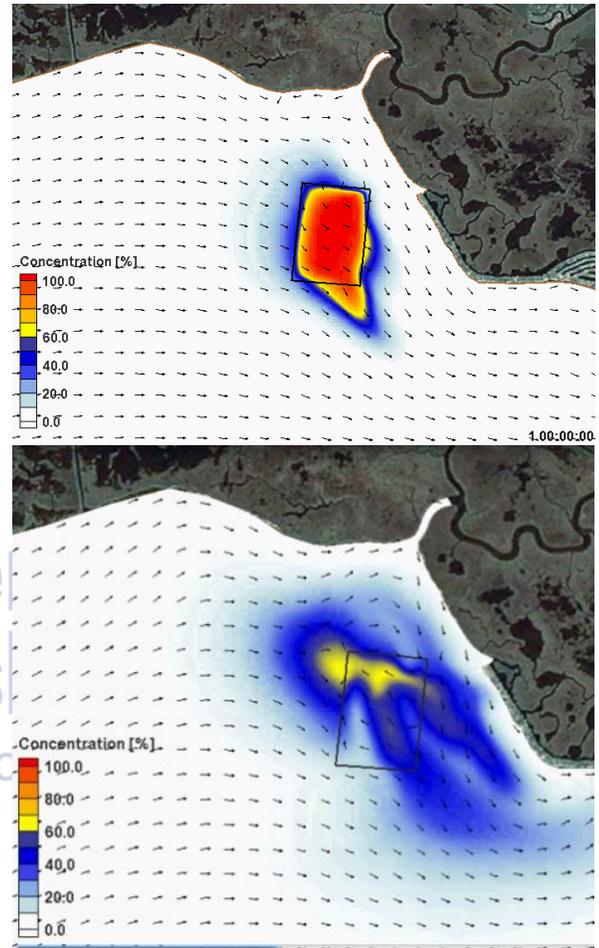
**Nature of Firm's Responsibility:**  
 See below

The Bayou Bonfouca Marsh Creation Project (PO-104) created marsh in open water areas adjacent to Bayou Bonfouca with sediment pumped from Lake Pontchartrain. The proposed marsh creation sediment borrow area was located in Lake Pontchartrain approximately 3,000 feet offshore.

CHE Engineers\* provided numerical modeling services for design and permitting. Our engineers evaluated changes to the wave climate as a result of dredging the borrow site and analyzed the water quality and mixing characteristics in the proposed borrow pit for various cut configurations to determine if variation in the cut design can improve mixing in the pit to improve pit water quality.

We evaluated changes to the wave climate as a result of dredging the borrow site and developed a wave modeling domain of Lake Pontchartrain and of the proposed borrow pit site and conducted two-dimensional wave generation and transformation modeling using the SWAN model.

We also developed a 3D circulation model of Lake Pontchartrain to simulate tide and wind-induced currents and mixing. We developed a variety of borrow site cut configurations and compared the residence time of each to minimize the residence time and maximize mixing and flushing, thereby improving the water quality in and near the borrow site.



*Concentration from borrow pit as simulated by 3D circulation modeling*

*\*CHE staff provided professional engineering services from 2003 to 2014, and as part of Mott MacDonald for CPRA from 2014-2024. Former CHE staff re-formed CHE in February 2024 and continue to provide services to CPRA as CHE.*

Completion Date (Actual or estimated)	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible
2013	Est. \$28.2M	\$42k

## TEC Professional Services Questionnaire

### PROJECT NO. 8

**Project Name, Location and Owner's contact information:**

**Mandeville Wetlands Protection, Mandeville, LA**

Neel-Schaffer, Inc., Barry Brupbaker (985) 674-9820

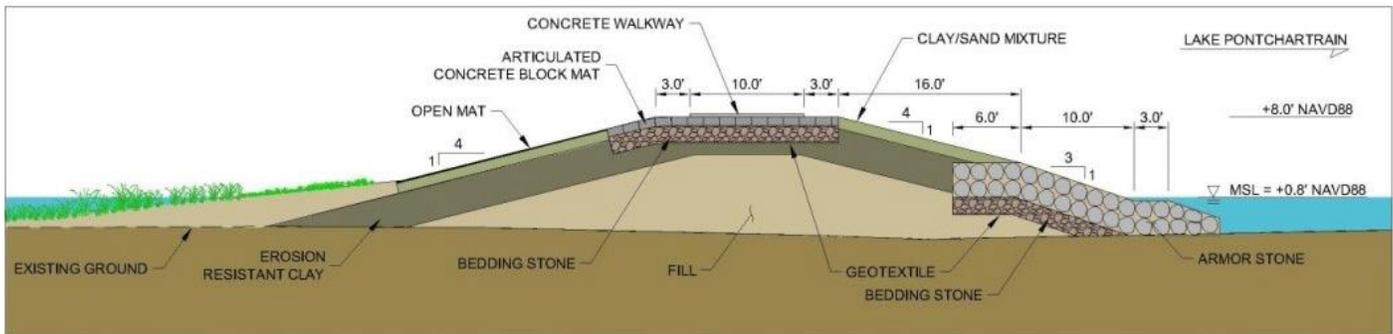
**Nature of Firm's Responsibility:**

See below

A cypress wetland located between two public parks on the north shore of Lake Pontchartrain in Mandeville, Louisiana is rapidly eroding. The City of Mandeville wanted a solution that would reduce erosion to the cypress wetland, maintain the hydraulic connection with stormwater outfalls that feed into the wetlands and into Lake Pontchartrain, and serve as a walkway between two adjacent parks.

Mott MacDonald developed conceptual designs for three concepts: a rock revetment, a living shoreline, and a hybrid structure which combined the advantages of the revetment and living shoreline while meeting the project goals and minimizing construction and maintenance costs.

The hybrid structure, which encompasses the advantages of both the stone revetment and living shoreline, provides the green space in the upper portion of the embankment while maintaining stability during the storm events.



*\*CHE staff provided professional engineering services from 2003 to 2014, and as part of Mott MacDonald for from 2014-2024. Former CHE staff re-formed CHE in February 2024.*

Completion Date (Actual or estimated)	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible
2012	unknown	\$50k

## TEC Professional Services Questionnaire

### PROJECT NO. 9

**Project Name, Location and Owner's contact information:**  
**La Quinta Terminal Aquatic Habitat Creation, Corpus Christi, TX**  
 Port of Corpus Christi Authority, Sarah Garza (361) 885-6163

**Nature of Firm's Responsibility:**  
 See below

As part of the mitigation requirements for the La Quinta Terminal Expansion Project, aquatic habitat within the La Quinta channel needed to be created to support the transplanting of seagrass and smooth cordgrass.

CHE Engineers\* developed and evaluated several habitat berm alternatives by analyzing the amount of habitat each would produce, constructability requirements, and their overall performance to determine the most cost-effective solution. The project features a protection berm designed to protect the marsh habitat from excess wave energy, aquatic habitat mitigation berms, and smooth cordgrass and seagrass plantings. Our engineers designed the berms to the ideal elevation for planting smooth cordgrass and strategically placed channels to provide sufficient circulation within the project site.

The project created over 30 acres of wetlands, provides enough sacrificial upland material to accommodate sea level rise and erosion over the next 20 years, and protects the mitigation site to maintain healthy smooth cordgrass growth.



*\*CHE staff provided professional engineering services from 2003 to 2014, and as part of Mott MacDonald from 2014-2024. Former CHE staff re-formed CHE in February 2024.*

Completion Date (Actual or estimated)	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible
2015	Est. \$42M	\$220k

## TEC Professional Services Questionnaire

### PROJECT NO. 10

**Project Name, Location and Owner's contact information:**  
**Carancahua Boat Ramp Access Channel Dredging, Jackson County, TX**

Jackson County, TX, Kathy Smartt, (512) 800-4740

**Nature of Firm's Responsibility:**

See below

The boat ramp basin was subject to rapid silting and depths were insufficient for recreational vessels and rapid deployment of rescue and emergency vessels. During low tide, the ramp is completely inaccessible due to sediment buildup in the basin and access channel. The ramp area and navigation channel have been dredged numerous times, but rapidly re-silts. CHE Engineers\* conducted an engineering analysis and design services to improve the boat ramp, adjacent bulkhead, and dredge the entrance channel and boat basin.

We conducted a coastal analysis to determine the processes controlling sedimentation along the project shoreline including analysis of wind, water levels, river inflow, and shoreline change. We also determined site morphology through a shoreline change analysis and performed circulation modeling to determine the effects of extending the breakwaters and wave modeling to determine any additional sheltering effects due to the proposed breakwater extensions as well as to determine the incident wave height and period for use in the design of the structures.

Based on our analysis, we developed several alternatives and evaluated them using several criteria such as permitting difficulty, cost, constructability, and performance to recommend the best alternative within the available project funding. We then developed technical specifications, construction level drawings, and cost estimates for project features including the breakwater modifications, channel and boat basin configuration, boat ramp improvements, bulkhead improvements, and dredge material placement areas.

A key to the success of the project was the creation of wetlands adjacent to the jetties using the dredge spoils protected by a small breakwater. This allowed for beneficial use of the dredged material and turned what is typically an environmental burden into a benefit. Regulatory agencies praised the creation of wetlands which more than mitigated for the dredging of wetlands on the site, making the project self-mitigating which dramatically reduced regulatory review time and construction costs.

*\*CHE staff provided professional engineering services from 2003 to 2014, and as part of Mott MacDonald from 2014-2024. Former CHE staff re-formed CHE in February 2024.*



Completion Date (Actual or estimated)	Estimated Cost:	
	Entire Project:	Work for which Firm was Responsible
2014	Est. \$960k	\$163k

## TEC Professional Services Questionnaire

<b>M. List all prior and/or on-going litigation between Firm and Jefferson Parish. Please attach additional pages if necessary.</b>		
<b>Parties:</b>		<b>Status/Result of Case:</b>
<b>Plaintiff:</b>	<b>Defendant:</b>	
<b>1.</b> N/A	N/A	N/A
<b>2.</b> N/A	N/A	N/A
<b>3.</b> N/A	N/A	N/A
<b>4.</b> N/A	N/A	N/A

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

**About us**  
**Coast & Harbor Engineering (CHE)** is a specialty coastal engineering consulting firm with worldwide experience and strong technical specializations in coastal and hydraulic engineering. Our coastal engineers are experts in the analysis and design related to various coastal protection and coastal habitat restoration projects. These projects include coastal resilience measures such as shoreline protection and stabilization, evaluation of sea level rise and storm impacts; ecosystem enhancement; and design of harbors, waterways, marine terminals, and beneficial use of dredged material.

CHE was originally formed in 2003 and provided specialty hydraulic and coastal engineering services across the US and worldwide. In 2014, CHE was acquired by Mott MacDonald, where CHE staff led the coastal discipline and hydraulic and coastal design aspects of small to multi-billion dollar projects. In February 2024, former owners and leaders of CHE worked with Mott MacDonald to re-form CHE into an independent, small business providing specialized hydraulic and coastal engineering services.

**We have executed unique coastal projects in Louisiana since 2003.** Behind these successful projects has been a team of dedicated engineers, project managers, and technicians – who understand that in addition to technical excellence, success depends on sustained coordination and synergy between client, engineers, regulatory agencies, and stakeholders. Our team’s strong local knowledge of Louisiana’s coast, infrastructure, programs, goals, and governmental agencies, combined with our experience in planning, evaluating, designing, permitting, and overseeing coastal projects throughout the Gulf of Mexico makes us especially qualified to provide all-inclusive engineering services for Jefferson Parish.

**Our expertise**

- Coastal planning
- Feasibility studies
- Marsh and ridge restoration
- Shoreline stabilization & protection
- Dredging
- Beneficial use of dredge material
- Living shoreline design
- Coastal & hydraulic modeling
- Coastal structure design
- Coastal restoration design
- Permitting
- Cost estimates
- Field investigations

# TEC Professional Services Questionnaire

## Evaluation Criteria

### 1. Professional training and experience in relation to coastal engineering

CHE's specialized coastal and hydraulic engineering services has helped state agencies and local municipalities across the gulf coast by utilizing advanced modeling capabilities to restore coastal habitats, implement living shoreline solutions, and protect shorelines.

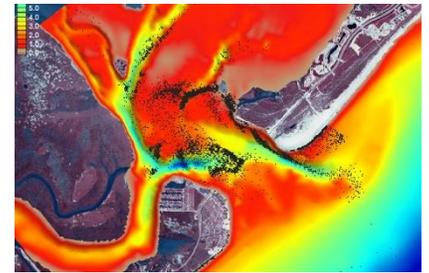
CHE is recognized as a leader in the field of coastal engineering through advanced certification, participation in professional organizations, and numerous papers and lectures presented by our staff. Two of our principals are Board Certified in Coastal Engineering by the Academy of Coastal Ocean Ports and Navigations Engineers (ACOPNE). Board Certification is a voluntary, post-license credential that provides recognition of advanced expertise in the coastal engineering field, superior experience, and a commitment to lifelong learning in coastal engineering. Certification is designated by abbreviations BC.CE.

#### Utilizing advanced modeling capabilities

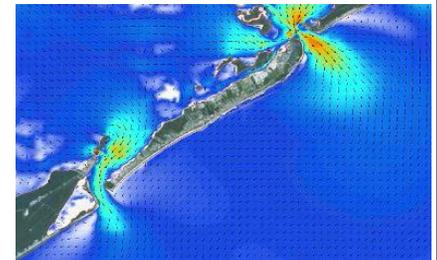
CHE's coastal engineers are experts in wave mechanics and wave induced sediment transport, storm flood propagation, storm prediction and statistical analysis, beach morphology and nearshore processes, bay and estuary hydrodynamics, and hydrodynamics of navigation channels, including vessel wakes.

Our engineering analyses focus on both the short-term and long-term impacts of these processes as well as the long-term impacts of eustatic sea level rise, subsidence, and hurricanes. Our understanding of physical processes goes beyond natural forces; we also have expertise in the analysis of impact caused by manmade structures and construction such as breakwaters and dredging.

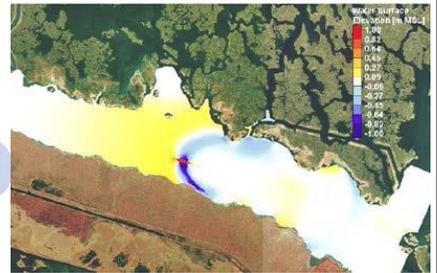
We have performed advanced analysis on a variety of coastal processes by conducting numerical modeling, feasibility studies, and evaluating alternatives. Our engineers are highly skilled in developing, verifying, and applying data processing software, statistical analysis programs, numerical modeling tools, and data visualization techniques to effectively simulate waves, currents, and sediment transport. We have successfully used these tools to properly simulate extremely diverse coastal environments and design sustainable solutions.



Coastal sediment transport modeling



Coastal circulation modeling



Vessel hydrodynamics modeling

#### Wave growth and transformation

- SWAN
- HWAVE
- BOUSS-2D
- CMS-WAVE
- MIKE21
- CELERIS

#### Wave-Structure Interaction

- FLOW3D
- Open Foam

#### Tide, wind and wave-induced circulation

- ADCIRC
- SELFE
- Delft 3D
- DFLOW-FM
- MIKE 21/3
- CMS-FLOW
- ADH
- FESWMS
- HEC-RAS

#### Sediment Transport and Morphology

- MIKE 21/3
- Delft 3D
- MORPHO
- COHSED
- GENCADE/GENESIS
- SBEACH
- XBEACH
- LAGRESED
- SED2D
- FLOW3D

#### Vessel Hydrodynamics (CHE's Proprietary Models)

- VH-LS (steady longwave)
- VH-LU (unsteady longwave)

#### Propwash (CHE's Proprietary Models)

- VH-OS (steady propwash)
- VH-PS (unsteady propwash)

#### Water Quality

- MIKE
- Delft3D-Qual
- SELFE

# TEC Professional Services Questionnaire



## Implementing living shoreline technology

As a leader in the coastal engineering industry, CHE has been on the forefront of designing living shoreline solutions to prevent shoreline erosion and create nearshore habitat. In Louisiana, we designed the first project to use artificial reef products and have advanced to creating over 13 miles of artificial reefs, now one of the largest living shoreline projects of its kind in the Gulf of Mexico.



## Dredge Engineering

CHE has demonstrated long-term success on a variety of complex dredging challenges. Our dredging experts have developed designs for every kind of dredging effort, from small scale specialty dredging for environmental restoration to large scale marsh creation and beach nourishment and production-based navigation dredging. We continuously work with the dredging industry to approach dredging design with an understanding from the construction industry.



## Protection shorelines and coastal infrastructure

We have created lasting improvements to coastal communities by protecting coastal roads and stabilizing shorelines threatened by erosion, flooding, and hurricanes. We have designed resilient coastal structures such as revetments, breakwaters, seawalls, and groins. We have also nourished dune and beaches all along the gulf coast



## Beneficial use of dredged material

Dredged material disposal is the most challenging aspect of dredging engineering. Creative beneficial use (BU) helps expand options for both disposal of dredged material and create opportunities for ecosystem restoration and coastal protection. CHE frequently uses BU techniques. For example, BU on the Carancahua Boat Ramp dredging project not only allowed for very inexpensive dredging by placing material nearby the dredge site, BU turned what would have been an environmental impact into a benefit, expediting permitting and creating habitat



## Restoring Coastal Habitats

CHE designs solutions that promote healthy ecosystems by restoring coastal habitat. Our engineers enhance ecosystems that rely on coastal, wetland, and riverine environments. Using advanced modeling tools, we simulate the natural processes impacting the habitat to gain an understanding of the issues to restore natural dunes and vegetation, improved water quality, created marshes, create living shorelines.



## Coastal Engineering Design

CHE Engineers have extensive experience in all aspects of coastal engineering design, including performing a variety of analyses and technical evaluations such as wave loading, geotechnical stability, wave transformation, and scour as well as developing cost estimates for coastal protection and restoration projects. We also plan and manage field investigations such as geotechnical, cultural resources, bathy surveys, and similar. CHE Engineers have developed designs for 100s of projects along the Gulf coast and managed construction and inspect of these designs.

# TEC Professional Services Questionnaire

## 2. Size of Firm

Coast & Harbor Engineering employs twelve experienced coastal engineers. Two of our principals are Board Certified in Coastal Engineering by the Academy of Coastal Ocean Ports and Navigations Engineers. Board Certification is a voluntary, post-license credential that provides recognition of advanced expertise in the coastal engineering field. Nine of our staff are licensed Professional Engineers.

CHE engineers provide a full range of experience and expertise in delivering professional engineering services. We regularly evaluate project feasibility, develop project designs including engineering plans and technical specifications, and provide engineering support during construction including construction administration and inspection.



## 3. Capacity for timely completion

Coast & Harbor Engineering is presently prepared and available to begin working with the Parish immediately if awarded the contract. Based on the currently contracted work, CHE has prepared man-hour forecasts extending to the anticipated length of this contract. Based upon those projections and estimates of anticipated future work for that same period, CHE believes at this time that the proposed staff are more than adequate to handle the current contracted and projected work.

## 4. Past Performance

See Section L.

## 5. Principal Office Location

CHE operates as a fully remote work force, with no central office. The Principal Office address for CHE is PO Box 202737, Austin, TX 78720.

## 6. Adversarial legal proceedings between the Parish and CHE

CHE does not currently have and has never had any adversarial legal proceedings involving Jefferson Parish

## 7. Project References

In addition to the reference indicated in Section L, below are two more clients who can attest to our coastal engineering capabilities and timely execution of projects.

### Rudy Simoneaux

#### Coastal Protection and Restoration Authority

Chief, Engineering Division  
150 Terrace Ave  
Baton Rouge, LA, 70802  
225.342.0981  
rudy.simoneaux@la.gov

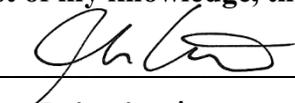
### Thomas Durnin

#### Texas General Land Office

Project Manager, Coastal Resource Division  
1700 N. Congress Ave, Ste 300  
Austin, TX 78701  
512.463.1192  
thomas.durnin@glo.texas.gov

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

Signature: \_\_\_\_\_

  
Principal

Print Name: Josh Carter, PE, BC.CE

Title: \_\_\_\_\_

Date: 7/8/2024