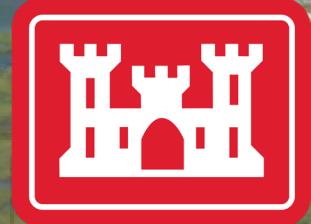


Multiple Award Task Order Contract for Architect and Engineering Services for Civil Works projects primarily for the Fort Worth District and within the Southwestern Division Area of Responsibility-100% Small Business Set-Aside

Solicitation Number: W9126G-20-R-0068

Date: November 15, 2021

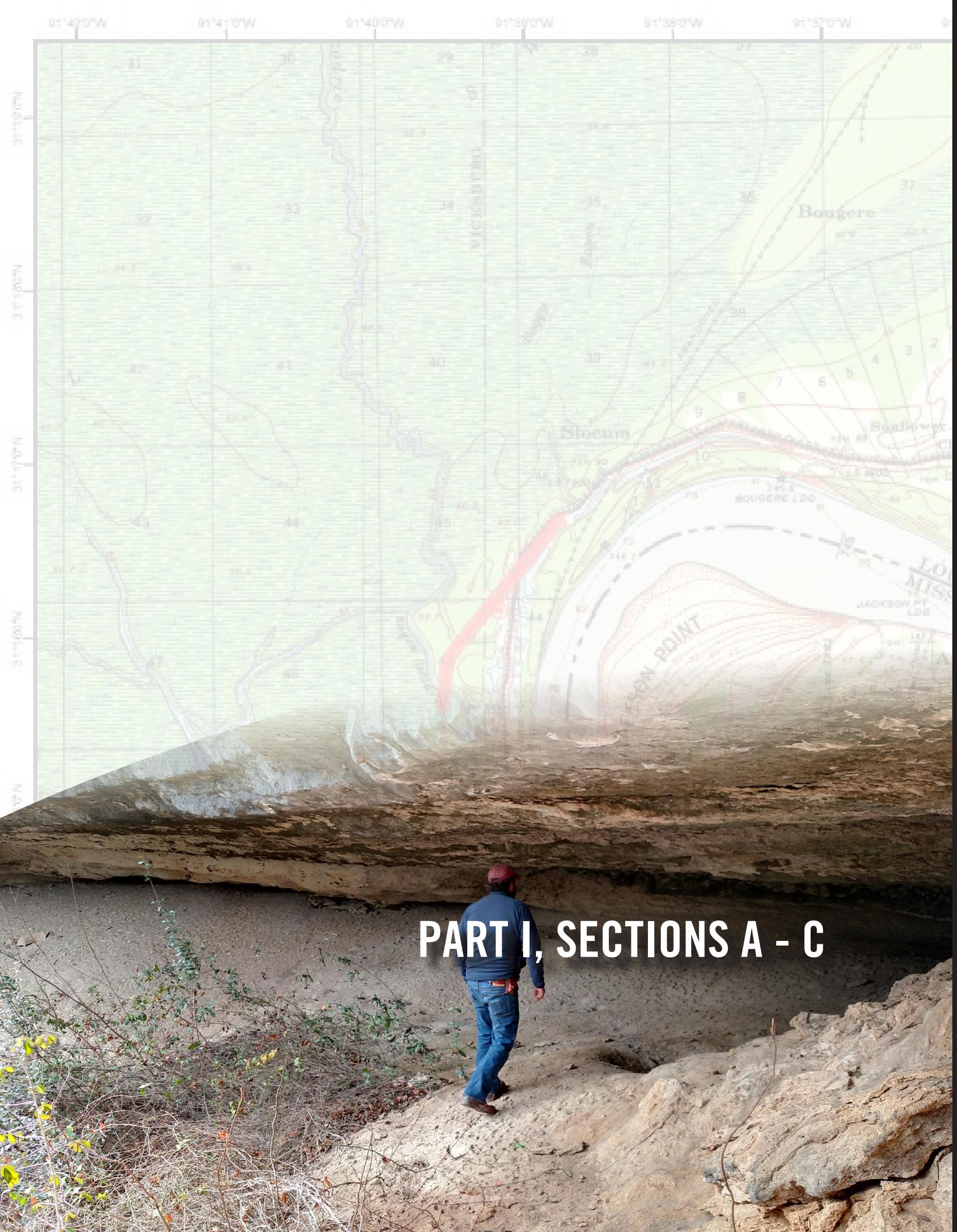
Submitted to:



Submitted by:

MHZ JV

A MENTOR PROTÉGÉ JOINT VENTURE



ARCHITECT - ENGINEER QUALIFICATIONS

PART I - CONTRACT-SPECIFIC QUALIFICATIONS

A. CONTRACT INFORMATION

1. TITLE AND LOCATION (*City and State*)

Architect and Engineering (A-E) Services Multiple Task Order Contract for Civil Works projects primarily for the Fort Worth District and within the Southwestern Division Area of Responsibility 100% Small Business Set-Aside

2. PUBLIC NOTICE DATE

October 14, 2021

3. SOLICITATION OR PROJECT NUMBER

W9126G20R0068, Small Business

B. ARCHITECT-ENGINEER POINT OF CONTACT

4. NAME AND TITLE

Josh Carson – Program Manager

5. NAME OF FIRM

MSMM Huitt-Zollars A Joint Venture

6. TELEPHONE NUMBER

504-570-6098

7. FAX NUMBER

8. EMAIL ADDRESS

joshcarson@msmmeng.com

C. PROPOSED TEAM

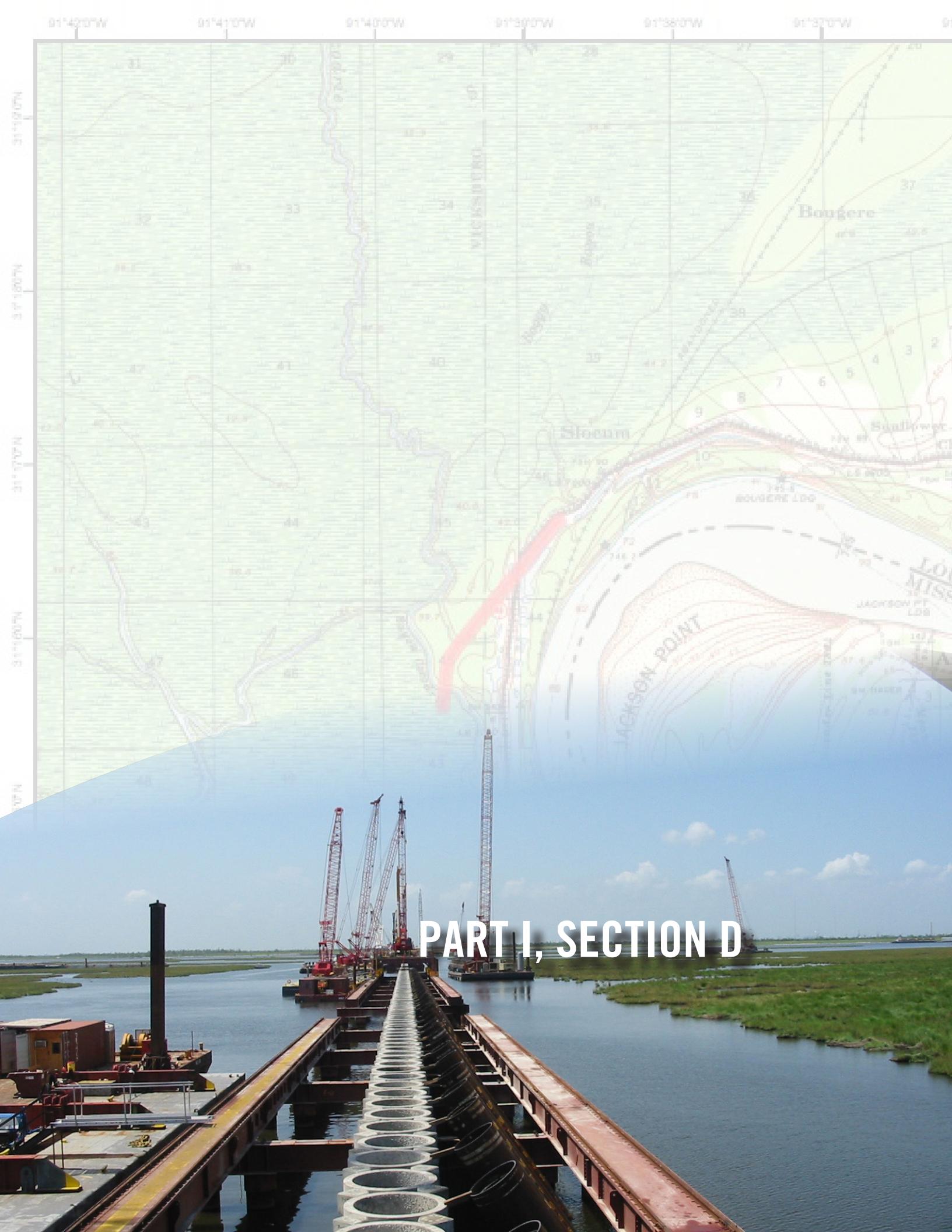
(Complete this section for the prime contractor and all key subcontractors.)

PRIME	J-V PARTNER	SUBCON- TRACTOR	9. FIRM NAME	10. ADDRESS	11. ROLE IN THIS CONTRACT
					(Check)
a	✓		MSMM Huitt-Zollars A Joint Venture (SB) DUNS #117073814 <input type="checkbox"/> CHECK IF BRANCH OFFICE	4640 Carrollton Avenue Suite 220 New Orleans, LA 70119	Program Management, Project Management, Civil Engineering, Structural Engineering, Architecture, Electrical Engineering, Mechanical Engineering, Landscape Architecture, Hydrology, Hydraulic Engineering, Construction Cost Estimating, GIS, Technical Review, Public Information, Land Surveying
b		✓	MSMM Engineering, LLC (SB) DUNS #969989370 <input type="checkbox"/> CHECK IF BRANCH OFFICE	4640 Carrollton Avenue Suite 220 New Orleans, LA 70119	
c		✓	MSMM Engineering, LLC (SB) DUNS #071392535 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	13850 Gulf Freeway Suite 202A Houston, TX 77034	
d		✓	Huitt-Zollars, Inc. DUNS #156399560 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	500 W. 7th Street Suite 300 Fort Worth, TX 76102	
e		✓	Huitt-Zollars, Inc. DUNS #080747660 <input type="checkbox"/> CHECK IF BRANCH OFFICE	5430 LBJ Freeway Suite 1500 Dallas, TX 75240	
f		✓	Huitt-Zollars, Inc. DUNS #879473999 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	10350 Richmond Avenue Suite 300 Houston, TX 77042	
g		✓	Mott MacDonald, LLC DUNS #808549914 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	110 Wild Basin Road Suite 100 Austin, TX 78746	Hydrology, Hydrogeology, Hydraulic Engineering
h		✓	Mott MacDonald, LLC DUNS #808549914 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	1601 5 th Avenue Suite 800 Seattle, WA 98101	
i		✓	Tetra Tech ✓ DUNS #198549560 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	One Park Drive, Suite 200 Research Park, NC 27709	Environmental Engineering, Environmental Planning, Water Resources Planning, Hydrogeology, Economics
j		✓	Tetra Tech ✓ DUNS #148291490 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	1420 5 th Avenue Suite 650 Seattle, WA 98101	
k		✓	Vernadero Group Incorporated (VDSB) DUNS #114054054 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	3400 S. Carrollton Avenue #850752 New Orleans, LA 70185	Environmental Analyses, NEPA Documentation, Biological Surveys, Biological Assessments, Environmental Baseline Surveys

I		<input checked="" type="checkbox"/>	ARS Engineers, Inc. (SBE, DBE, MBE, HUB) DUNS #151196813 <input type="checkbox"/> CHECK IF BRANCH OFFICE	12801 N. Central Expressway Suite 1250 Dallas, TX 75243	Land Surveying, GIS and Mapping
m		<input checked="" type="checkbox"/>	ETTL Engineers & Consultants (WOSB) DUNS #052125457 <input type="checkbox"/> CHECK IF BRANCH OFFICE	1717 East Erwin Tyler, TX 75702	Geotechnical Engineering, Testing and Drilling Services
n		<input checked="" type="checkbox"/>	R. Christopher Goodwin & Associates, Inc. (SBE) DUNS #720929188 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	3850 East 13 Street Suite C Lawrence, KS 66044	Archeology, Cultural Resources
o		<input checked="" type="checkbox"/>	R. Christopher Goodwin & Associates, Inc. (SBE) DUNS #139241665 <input type="checkbox"/> CHECK IF BRANCH OFFICE	309 Jefferson Highway Suite A New Orleans, LA 70121	
p		<input checked="" type="checkbox"/>	Neelu, Inc. (WOSB) DUNS #962771957 <input type="checkbox"/> CHECK IF BRANCH OFFICE	601 Basset Ct, SE Smyrna, GA 30080	Value Engineering
q		<input checked="" type="checkbox"/>	Wiss, Janney, Elstner Associates, Inc. DUNS #112561014 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	9511 North Lake Creek Parkway Austin, TX 78717	Hazardous Material Testing
r		<input checked="" type="checkbox"/>	Eustis Engineering, LLC (SB) DUNS #205462945 <input type="checkbox"/> CHECK IF BRANCH OFFICE	4116 Rose Way Houston, TX 77025	Geotechnical
s		<input checked="" type="checkbox"/>	Eustis Engineering, LLC (SB) DUNS #205462945 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	3011 28 th Street Metairie, LA 70002	Engineering, Testing and Drilling Services
t		<input checked="" type="checkbox"/>	Michael Baker International, Inc. DUNS #827041075 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	1501 LBJ Freeway Suite 650 Dallas, TX 75234	
u		<input checked="" type="checkbox"/>	Michael Baker International, Inc. DUNS #079548556 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	2600 Citiplace Drive Suite 450 Baton Rouge, LA 70808	Civil Engineering Support, Geotechnical Analysis Support, Cost Estimating Support
v		<input checked="" type="checkbox"/>	Michael Baker International, Inc. DUNS #048029719 <input checked="" type="checkbox"/> CHECK IF BRANCH OFFICE	2002 W Grand Parkway, N Suite 325 Katy, TX 77449	
w		<input checked="" type="checkbox"/>	JESCO Environmental & Geotechnical Services, Inc. (SB, 8(a), SDB, WOSB, EDWSB) DUNS #948076989 <input type="checkbox"/> CHECK IF BRANCH OFFICE	1701 S. Thibodeaux Rd. Jennings, LA 70546	Phase I and II Environmental Site Assessments, Hazardous Mitigation Analysis, GIS Support, Safety

PART I,
SECTION D

PART I, SECTION D



D. ORGANIZATIONAL CHART OF PROPOSED TEAM

(*Attached*)

LEGEND

MSMM/Huitt-Zollars Joint Venture- MHZ JV
East Texas Testing Lab - ETTL (WOSB)
Vernadero - VN (VDSB)
Tetra Tech - TT
Mott MacDonald - MM
RC Goodwin & Associates- RCA (SBE)
ARS - ARS (SBE)
Neelu, Inc. - NI



PROGRAM MANAGER
Josh Carson (MHZ JV)

PROJECT MANAGER

Scott Chehardy, PE (MHZ JV)
Rob Armstrong, PE, CFM (MHZ JV)

TECHNICAL DISCIPLINES**CIVIL ENGINEER**

Jim Wilson, PE, LEED AP (MHZ JV)
Mike De Leon, PE (MHZ JV)

STRUCTURAL ENGINEER

Bob Yokum, PE (MHZ JV)
William Wallace, PE, NCEES, SECB, MLSE (MHZ JV)

ARCHITECT

Steve Finnegan, AIA (MHZ JV)
Bill Hoelscher, AIA, LEED AP (MHZ JV)

ELECTRICAL ENGINEER

Harry Hawney , PE (MHZ JV)
Scott Parma, PE, LEED AP (MHZ JV)

MECHANICAL ENGINEER

Jeff Wilson, PE, LEED AP (MHZ JV)
Will Krasner, PE (MHZ JV)

LANDSCAPE ARCHITECT

Chris Scott, RLA, ASLA, LEED AP, CNU-A (MHZ JV)

GEOTECHNICAL ENGINEER

Stephen R. Richards, PE (ETTL)

ENVIRONMENTAL ENGINEER

Manish Mardia, PE (MHZ JV)
Saumya Sarkar, PE (TT)

HYDROLOGIC/HYDRAULIC ENGINEER

Allison Woods, PE, CFM, LEED GA (MHZ JV)
Josh Carter, PE, D.CE (MM)

ARCHEOLOGIST

Janice McLean, RPA (RCA)

LAND SURVEYOR

Dustin Davison, RPLS (ARS)

COST ESTIMATOR

Don Daigle, CVS, CPE (MHZ JV)

GIS SPECIALIST

Zachary Steinkuhler, PE, CFM (MHZ JV)

PUBLIC INFORMATION SPECIALIST

Christoff Spieler, PE, LEED AP BD+C, AICP (MHZ JV)

ECONOMIST

James Carney (TT)

BIOLOGIST

Eric Webb, PhD (VN)

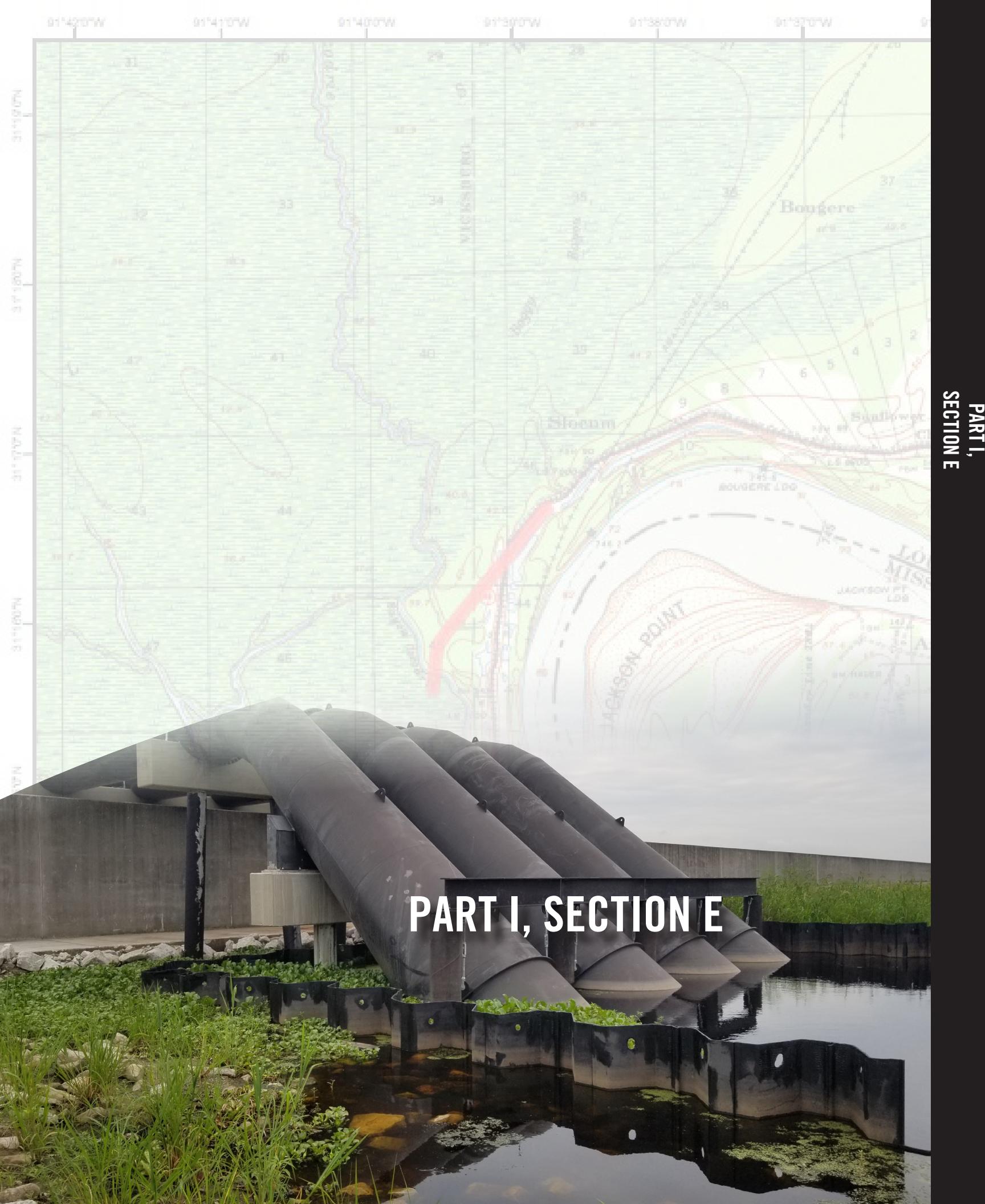
HYDROGEOLOGIST

Glen Wallace, PhD (MM)

CERTIFIED VALUE SPECIALIST

Ramesh Kalvakaalva, PE, CVS (NI)

PART I,
SECTION E



PART I, SECTION E

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Josh Carson	13. ROLE IN THIS CONTRACT Program Manager	14. YEARS EXPERIENCE a. TOTAL 15 b. WITH CURRENT FIRM 8	
15. FIRM NAME AND LOCATION (City And State) MHZ JV – New Orleans, LA		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) N/A	
16. EDUCATION (DEGREE AND SPECIALIZATION) MS, Environmental Science and Policy, Johns Hopkins University - 2011 BS, Biology, Baldwin-Wallace University - 2007		18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Mr. Carson possesses extensive USACE Civil Works and Water Resources program and project management experience. Having previously served as an in-house Project Manager at the USACE New Orleans (MVN) District for five (5) years, he has led the daily operation of Federal planning studies, feasibility studies, operations and maintenance projects, design phase projects and construction phase projects. For the past five (5) years, Mr. Carson has led the daily operation of the MSMM Civil Works Contract at SWF, managing the overall contract, and individual projects for nine engineering task orders completed for Flood Risk Management Reduction, Water Resources and Recreation projects.	
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) Design-Build RFP Development: 277K Levee Raise and Delta Pump Station – Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 2023	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Development of two design-build RFP packages for flood risk reduction measures along the Dallas Floodway, consisting of the 277K levee raise and Delta Pump Station replacement. Other services consisted of cost estimating, value engineering, design, drafting and planning for demolition of existing facilities, and Civil/Structural/Mechanical/Electrical/Architectural engineering analyses and design. Mr. Carson serves as the lead manager for the task order, responsible for the daily oversight of project delivery and interaction and coordination with the SWF Design and Project Management team. Cost: Construction \$6M Delta Pump Station, \$35M 277K Levee Raise Fee: \$1.2M Role: Program Manager		<input checked="" type="checkbox"/> Check if project performed with current firm	
(1) TITLE AND LOCATION (City and State) Texas City I-Wall to T-Wall Conversion Design, Texas City, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 2022	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Development of a design-bid-build package (plans and specs) for approximately a mile of failed Federal floodwall conversion from an I-Wall to a T-wall on an active chemical refinery. Services rendered consist of Architectural, Civil and Geotechnical Engineering, Cost Estimating, BCOES review and will consist of Construction Management and Engineering During Construction. Mr. Carson serves as the lead manager for the project, responsible for coordinating the design effort with SWG, the non-Federal sponsor (Galveston County) and the Chemical Refinery representatives. Cost: \$15M, Fee: \$1.8M Role: Program Manager		<input checked="" type="checkbox"/> Check if project performed with current firm	
(1) TITLE AND LOCATION (City and State) Dallas Floodway Extension Phase II Recreation and Access Design, Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2020 2022	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Development of a design-bid-build package (plans and specs) for a recreational project along the Dallas Floodway Extension. Services rendered included hydrology and hydraulic modeling, civil and structural design analyses, landscape architecture, cost estimating and BCOES review for extensive concrete trails, several bridges including a large bridge over the Trinity River and several other recreational features. Mr. Carson managed the delivery of the complete design-bid-build package, inclusive of all required District and ATR reviews, and coordination and incorporation of City of Dallas preferred design features. Cost: \$4.7M Fee: \$422K Role: Program Manager		<input checked="" type="checkbox"/> Check if project performed with current firm	
(1) TITLE AND LOCATION (City and State) USACE Silver Jackets Southern University Drainage Outfall Ravine and Riverbank Instability Study, Baton Rouge, LA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2020 2022	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Development of a planning level feasibility study inclusive of hydrology and hydraulic modeling, cost estimating and alternatives development for a flood risk management reduction project on the Southern University campus in Baton Rouge, LA. Mr. Carson managed the delivery of the feasibility report by the end of the fiscal year to comply with the requirements of the Silver Jackets program. He managed the hydraulic modeling and the report development and delivery. Cost: \$5-7M Fee: \$390K Role: Program Manager		<input checked="" type="checkbox"/> Check if project performed with current firm	

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Scott Chehardy, PE	Project Manager	26	8

15. FIRM NAME AND LOCATION (*City And State*)

MHZ JV – Houston, TX

16. EDUCATION (*DEGREE AND SPECIALIZATION*)

BS, Civil Engineering, Southwestern Louisiana University, 1994

17. CURRENT PROFESSIONAL REGISTRATION (*STATE AND DISCIPLINE*)
Professional Engineer/Civil (1999): LA (28532), IN (11700829)

18. OTHER PROFESSIONAL QUALIFICATIONS (*Publications, Organizations, Training, Awards, Etc.*)

Mr. Chehardy will serve at the lead Project Manager for engineering tasks associated with this contract. Mr. Chehardy has a deep understanding of the USACE Civil Works design process, having managed and executed multiple task orders for multiple USACE Districts across Louisiana and Texas. Mr. Chehardy is proficient with navigating USACE reviews utilizing DrChecks, has a long history of executing projects that require ATR/DQC and BCOES reviews and has a great working relationship with engineering personnel at the Fort Worth District. Mr. Chehardy is currently finalizing the design-build RFP package for the Delta Pump Station and previously compiled the 277K Levee Raise DB RFP.

19. RELEVANT PROJECTS

(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (<i>if applicable</i>)
Cow Bayou Drainage Pump Station Complex Design, Orange, TX	2020	2022

(3) DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Check if project performed with current firm

a **Scope:** Development of a 35% design package (plans, specs, and DDR) for a new 8,000 cfs drainage pump station complex consisting of multiple flood risk management reduction measures such as a pump station, safe house, floodwalls, and sector gate. Main responsibilities consisted of civil, structural, and architectural analyses. The task order was to provide a 35% level of design with anticipation of changing the project to a Design-Build RFP. Mr. Chehardy managed the Civil, Structural and Architectural aspects of the project, while USACE led the Electrical and Mechanical aspects. He coordinated all design components, combined information for submittals and was instrumental in establishing elevations for project components based on preliminary H&H modeling work. **Cost:** \$325M **Fee:** \$1.3M
Role: Project Manager

(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (<i>if applicable</i>)
Design-Build RFP Development: 277K Levee Raise and Delta Pump Station, Dallas, TX	2021	2023

(3) DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Check if project performed with current firm

b **Scope:** Development of two design-build RFP packages for flood risk reduction measures along the Dallas Floodway, consisting of the 277K levee raise and Delta Pump Station replacement. Other services consisted of cost estimating, value engineering, design, drafting and planning for demolition of existing facilities, and Civil/Structural/Mechanical/Electrical/Architectural engineering analyses and design. Mr. Chehardy has been the Project/Technical manager for the both design-build projects. His main responsibilities have been to compile the RFP documentation and respond to USACE review comments. **Cost:** \$6M Delta Pump Station, \$35M 277K Levee Raise
Fee: \$1.2M **Role:** Project/Technical Manager

(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (<i>if applicable</i>)
Ascension Parish Environmental Infrastructure Sewer Treatment Plant Design, Hillaryville, LA	2020	2022

(3) DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Check if project performed with current firm

c **Scope:** Development of a design-bid-build package (plans and specs) for the creation of a 1.8 million gallon per day wastewater treatment plant as part of the Federal Section 219 Environmental Infrastructure program. Services consisted of detailed civil/structural/mechanical/electrical/architectural/geotechnical analyses, cost estimating, value engineering, and full USACE review process including BCOES review. Mr. Chehardy is the Technical/Project Manager for the delivery of the design-bid-build package. He managed a multi-disciplinary team that provided a large biddable package before the end of the 2020 Fiscal Year. **Cost:** \$21.5M **Fee:** \$1.5M **Role:** Project/Technical Manager

(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (<i>if applicable</i>)
East Baton Rouge Parish Environmental Infrastructure North Wastewater Treatment Plant Collection System 5 MG Ground Storage Tank and Pump Station, Baton Rouge, LA	2022	2024

(3) DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Check if project performed with current firm

d **Scope:** Development of a design-bid-build package (plans and specs) to provide wastewater storage through the Federal Section 219 EI program. Design includes two pile supported above ground 5 million gallon pre-stressed concrete storage tanks, a 14,000 gpm sewer pump station, new control building and generators for emergency power. Mr. Chehardy is currently managing the design submittals and will be responsible for the oversight of construction phase services when the project is bid by the USACE MVN in the 1st quarter of 2022. **Cost:** \$17M **Fee:** \$1.2M **Role:** Project Manager

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Rob Armstrong, PE, CFM	13. ROLE IN THIS CONTRACT Project Manager	14. YEARS EXPERIENCE a. TOTAL 35 b. WITH CURRENT FIRM 17	
15. FIRM NAME AND LOCATION (City And State) MHZ JV – Dallas, TX			
16. EDUCATION (DEGREE AND SPECIALIZATION) BS, Civil Engineering, University of Oklahoma, 1986	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Engineer (1991): TX (87107), NE (E7244), OK (21127), WA (43982) Certified Floodplain Manager (2838-15N)		
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Rob is experienced in civil engineering site development, open channel hydraulics, channel restoration, geomorphology, hydrologic analyses, storm water analysis, master planning and design, bridge hydraulic and scour studies, and FEMA modeling and permitting.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) Greater Houston Flood Mitigation Consortium – Houston, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES 2020	CONSTRUCTION (if applicable) N/A
a (3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Provided Program Management and technical consulting for this project, the goal of which was the development of a consensus among regional stakeholders about flood mitigation measures and a master plan of identified projects to minimize the impact of flooding in the coastal Houston area. Cost: N/A Fee: \$1.2M Role: Project Manager	<input checked="" type="checkbox"/> Check if project performed with current firm		
(1) TITLE AND LOCATION (City and State) Fort Bliss Main Cantonment Drainage Master Plan – El Paso, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES 2013	CONSTRUCTION (if applicable) N/A
b (3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Preparation of a drainage master plan for the 4.5 square mile main cantonment area. Modeling was completed utilizing InfoWorks SD, implementing both 1D and 2D elements within the study. This complex storm water model included analysis of storm drains, ditches, open channels, culverts, pump stations, detention ponds and retention ponds. The analysis culminated in the development of recommended improvements which consisted of nine individual projects, each one addressing a specific flood risk area. Rob was the task manager for a master drainage study for Fort Bliss that identified major drainage patterns, collector facilities, and drainage concepts and constraints to be used during the analysis of major infill projects on the main cantonment area of Fort Bliss. Cost: N/A Fee: \$325K Role: Task Manager	<input checked="" type="checkbox"/> Check if project performed with current firm		
(1) TITLE AND LOCATION (City and State) Fort Sam Houston Master Drainage Plan – San Antonio, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES 2012	CONSTRUCTION (if applicable) N/A
c (3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: The project included a stormwater master plan for over 3,000 acres, providing an inventory assessment of existing drainage facilities, including inlets, pipes, ditches, and culverts both on and off the installation. Analysis was performed using Infoworks SD and HEC-RAS. Floodplain mapping was performed for multiple recurrence interval storms. Rob served as the lead civil engineer and task manager of the storm water study for the evaluation and assessment of the installed existing capacity of the storm water system at Fort Sam Houston in San Antonio, Texas, building a two-dimensional hydrodynamic model using InfoWorks SD; and for the delineation of the floodplain of the tributaries in the installation, using HEC-HMS and HEC-RAS software. Cost: N/A Fee: \$329K Role: Lead Civil Engineer and Task Manager	<input checked="" type="checkbox"/> Check if project performed with current firm		
(1) TITLE AND LOCATION (City and State) Town of Fairview Master Drainage Study & Floodplain Study – Fairview, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES 2015	CONSTRUCTION (if applicable) N/A
d (3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Rob served as Project Manager for the development of a stormwater master plan for a 1,070-acre basin in Fairview. Tasks included HEC-GeoRAS, GIS-based hydrologic, hydraulic, and geomorphic analyses for the identification of problem areas and the development of regional solutions. The effort included establishing hydro modification controls to reduce the frequency of erosive discharges within the sensitive stream. Cost: N/A Fee: \$363K Role: Project Manager	<input checked="" type="checkbox"/> Check if project performed with current firm		
(1) TITLE AND LOCATION (City and State) Cottonwood Creek Bank Protection – Allen, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES 2015	CONSTRUCTION (if applicable) N/A
e (3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Completed emergency design with collected data, geotechnical investigation, performed alternative analyses, prepared concept plans and final construction bid documents all in 59 days upon receipt of the NTP. The solution relied on soil and rock nails, shotcrete, and a cast-in-place wall in order to limit the project footprint while also meeting the permitting and hydraulic conveyance objectives. Cost: \$ N/A Fee: \$83K Role: Project Manager	<input checked="" type="checkbox"/> Check if project performed with current firm		

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Jim Wilson, PE, LEED AP	13. ROLE IN THIS CONTRACT Civil Engineer	14. YEARS EXPERIENCE a. TOTAL 33 b. WITH CURRENT FIRM 9	
15. FIRM NAME AND LOCATION (City And State) MHZ JV, New Orleans, LA			
16. EDUCATION (DEGREE AND SPECIALIZATION) BS, Civil Engineering, Michigan Technological University, 1988	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Engineer/Civil (1993): TX (128376), LA (35456), MI (38800), FL (85114) LEED Accredited Professional 2008		
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Mr. Wilson is a Senior civil/drainage/levee engineer with 30+ years of civil engineer experience. He is the designer of record for all of the recent civil works design completed at the Fort Worth District, inclusive of multiple Dallas floodway projects. Mr. Wilson is fully versed in the USACE civil works and water resources design process and is intimately familiar with the use of the SWF AEIM. He also provides construction phase services inclusive of engineering during construction. Mr. Wilson will continue to serve as the designer of record for tasks assigned on this contract.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) Texas City I-Wall to T-Wall Conversion Design, Texas City, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 2022	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Development of a design-bid-build package (plans and specs) for approximately a mile of failed Federal floodwall conversion from an I-Wall to a T-wall on an active chemical refinery. Services rendered consist of Architectural, Civil and Geotechnical Engineering, Cost Estimating, BCOES review and will consist of Construction Management and Engineering During Construction. Mr. Wilson is the lead civil engineer and designer of record for the project. He is responsible for all design submittals, response to DQC/ATR/IEPR/BCOES review comments, and the relocation of all site utilities. Cost: \$15M Fee: \$1.8M Role: Lead Civil Engineer			
(1) TITLE AND LOCATION (City and State) Dallas Floodway Extension Phase II Recreation and Access Design, Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2020 2022	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Development of a design-bid-build package (plans and specs) for a recreational project along the Dallas Floodway Extension. Services rendered included hydrology and hydraulic modeling, civil and structural design analyses, landscape architecture, cost estimating and BCOES review for extensive concrete trails, several bridges including a large bridge over the Trinity River and several other recreational features. Mr. Wilson was the lead civil engineer and designer of record for the project. He was responsible for the site layout, setting elevations, establishing erosion control measures and site security measures. Cost: \$4.7M Fee: \$422K Role: Lead Civil Engineer			
(1) TITLE AND LOCATION (City and State) Timber Creek Recreational and Site Development Design, Austin, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 2022	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Development of a design-bid-build package (plans and specs) for the development of a public park in Austin, TX. Services consisted of geotechnical investigations, civil and structural design analyses, cost estimating, topographic survey, and coordination with the non-Federal sponsor, the Travis County Parks department. Mr. Wilson was the lead civil engineer and designer of record for this project. He developed the plans, specs, and DDR for the project inclusive of civil site design, detailed design of several recreational features for creation of the park, and sewer design to incorporate a new restroom facility. He was also responsible for project permitting. Cost: \$3.7M Fee: \$356K Role: Lead Civil Engineer			
(1) TITLE AND LOCATION (City and State) Replacement of Granger Lake Office Building, Granger TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2019 2022	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Development of a design-bid-build package (plans and specs) for the creation of a new Lake office management building and demolition of the existing facilities. Design services included civil, structural, electrical and mechanical engineering, as well as architectural and landscape architectural design. Mr. Wilson was the lead civil engineer for the project. He established the site design, designed the septic field, government parking lot and fencing, and the force protection. Cost: \$3.2M Fee: \$358K Role: Lead Civil Engineer			

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Mike De Leon, PE	13. ROLE IN THIS CONTRACT Civil Engineer	14. YEARS EXPERIENCE a. TOTAL 24	b. WITH CURRENT FIRM 15
15. FIRM NAME AND LOCATION (City And State) MHZ JV – Dallas, TX		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Engineer (2003): TX (91753)	
16. EDUCATION (DEGREE AND SPECIALIZATION) BS, Civil Engineering, Texas A&M University, 1998		18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Mr. De Leon has 24 years of civil engineering design experience with a focus on major infrastructure and civil site development. He understands USACE design requirements from his eight years on the Fort Bliss Program preparing \$1B in civil infrastructure designs. He also has extensive experience in the design and management of hydrology and hydraulics projects. His experience encompasses roadway drainage analysis, bridge hydraulic studies, permitting, management, creation and utilization of GIS databases, storm water quality, and stream channel analysis.	
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) Design-Build RFP Development: 277K Levee Raise and Delta Pump Station – Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 2023	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Developed the D/B Contractor RFP including 35% preliminary drawings for USACE solicitation of the Delta Pump Station Replacement. The Pump Station, owned by the City of Dallas for the Dallas Floodway System, includes storm water pump station replacement of the high flow pumps and pump house, as well as reuse of the structural chamber, incorporation of a new electrical control room, an enlarged plaza area, new concrete access road, security fencing replacement, site stair replacement, replacing heating and ventilation systems, and installing a new trash rack system. Cost: \$ 35M Fee: \$244K Role: Civil Engineer		<input checked="" type="checkbox"/> Check if project performed with current firm	
a			
(1) TITLE AND LOCATION (City and State) Dallas Floodway Extension Recreation and Bridge Design – Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2020 2022	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Design of approximately 2 miles of concrete trails, a large bridge crossing the Trinity River, two bridges crossing secondary waterways, a raised wooded boardwalk to reduce maintenance events in higher prone flooding areas, bird watching platforms, parking lots and multiple gates and pipe rail fences. Cost: \$4.5M Fee: \$8K Role: Civil Engineering ITR		<input checked="" type="checkbox"/> Check if project performed with current firm	
b			
(1) TITLE AND LOCATION (City and State) Development of Laredo 7 RFPs – Laredo, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 ONGOING	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: The purpose of this project was to design plans for the Laredo 7 segments of the border fence along the U.S.-Mexico border. The fence segments were designed to be either 18-ft. or 30-ft.-tall depending on project alignment location, and to meet the Tactical Infrastructure Design Standard for Primary Pedestrian Fence. The design also included plans for automated vehicle gates. The automated vehicle gates' design planned for metal structures with a minimum height of 18 feet and minimum width of 20 feet. Structural design includes several bridges of varying length to provide access across multiple arroyos and waterways for the maintenance and patrol roads. Cost: \$998M Fee: \$5.4M Role: Civil Engineer		<input checked="" type="checkbox"/> Check if project performed with current firm	
d			
(1) TITLE AND LOCATION (City and State) FEMA Recertification of the Texas City Hurricane and Flood Protection System – Galveston County, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2014 N/A	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Inspection, analysis and preparation of documentation to show that the Texas City Hurricane-Flood Protection Levee met the requirements of 44 CFR Section 65.10 of the National Flood Insurance Program (NFIP) regulations for Federal Emergency Management Agency (FEMA) Levee Certification. Work consisted of certifying that this 20 mile long, coastal flood and hurricane levee system meets the levee design criteria for freeboard, closures, embankment protection, embankment and foundation stability, settlement, interior drainage, and other design criteria established by FEMA. Cost: \$175K Fee: \$633K Role: Civil Inspection		<input checked="" type="checkbox"/> Check if project performed with current firm	
d			
(1) TITLE AND LOCATION (City and State) Emergency Repairs to Gulf Coast Jetties and the Texas City Dike – Texas City, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2012 2012	
c			
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Preparation of bridging documents and design-build RFP of nine jetty systems and Texas City Dike along the Texas Gulf Coast for a \$40M project for SWG. Performed site investigation and hydrographic/topographic survey. MII cost estimate prepared. The plans, RFP and cost estimate were prepared in accordance with applicable USACE Technical Manuals, Coastal Criteria and Standards. Cost: \$40M Fee: \$61K Role: Civil Engineer		<input checked="" type="checkbox"/> Check if project performed with current firm	

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Bob Yokum, PE	13. ROLE IN THIS CONTRACT Structural Engineer	14. YEARS EXPERIENCE a. TOTAL 41 b. WITH CURRENT FIRM 10	
15. FIRM NAME AND LOCATION (City And State) MHZ JV – New Orleans, LA			
16. EDUCATION (DEGREE AND SPECIALIZATION) MS, Civil Engineering, Tulane University, 1980 BS, Civil Engineering, University of New Orleans, 1975	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Engineer (1984)First Year Registered, LA, (21422)		
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Mr. Yokum, a former USACE New Orleans District Structural Engineer, has over 40 years of experience providing structural design for Federal projects. Mr. Yokum specializes in designing flood risk reduction measures and has designed levees, flood walls, locks, gates and drainage structures for his entire career. Mr. Yokum developed the unbalanced load criteria used by USACE for all levee design projects. This criteria sets the guiding design calculations for designing heavy structural projects that have water on one side of a project feature and land on the other.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) East Baton Rouge Parish Environmental Infrastructure North Wastewater Treatment Plant Collection System 5 MG Ground Storage Tank and Pump Station, Baton Rouge, LA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2022 2024	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE a Scope: Development of a design-bid-build package (plans and specs) to provide wastewater storage through the Federal Section 219 EI program. Design includes two pile supported above ground 5 million gallon pre-stressed concrete storage tanks, a 14.00 gpm sewer pump station, new control building and generators for emergency power. Mr. Yokum designed the reinforced concrete structures for all of the process units, the pump stations and the slabs on grade. He also designed the CMU electrical/control building, as well as provided pile design for all structures and buildings. Cost: \$17M Fee: \$1.2M Role: Structural Engineer			
(1) TITLE AND LOCATION (City and State) Dallas Floodway Extension Phase II Recreation and Access Design – Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2020 2022	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE b Scope: Development of a design-bid-build package (plans and specs) for a recreational project along the Dallas Floodway Extension. Services rendered included hydrology and hydraulic modeling, civil and structural design analyses, landscape architecture, cost estimating and BCOES review for extensive concrete trails, several bridges including a large bridge over the Trinity River, and several other recreational features. Mr. Yokum provided the structural design for the bridges and bridge plaza's. He worked with the hydraulic engineer and Coast Guard to reach a project consensus on the bridge pilings and provided detailed design of the bridge components and overall concept. He was also able to save the Federal Government and City of Dallas roughly \$1M by utilizing two bridges that were manufactured for a previous project for two of the crossings. Cost: \$4.7M Fee: \$422K Role: Structural Engineer			
(1) TITLE AND LOCATION (City and State) Cow Bayou Drainage Pump Station Complex Design – Orange, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2020 2022	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE c Scope: Development of a 35% design package (plans, specs and DDR) for a new 8,00 cfs drainage pump station complex consisting of multiple flood risk management reduction measures such as pump station, safe house, floodwalls and sector gate. Main responsibilities consisted of civil, structural, and architectural analyses. The task order was to provide a 35% level of design with anticipation of changing the project to a Design-Build RFP. Mr. Yokum was the lead structural engineer for the project. He designed the foundation for the pump station, hydraulic gates, floodwall, pump station safehouse, and the fuel yard. He developed detailed calculations for these design components which were reviewed and approved by USACE. Cost: \$325M Fee: \$1.3M Role: Structural Engineer			
(1) TITLE AND LOCATION (City and State) Texas City & Vicinity Hurricane Flood Protection Project, I-Wall to T-Wall Conversion – Texas City, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 2022	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE d Scope: Development of a design-bid-build package (plans and specs) for approximately a mile of failed Federal floodwall conversion from an I-Wall to a T-wall on an active chemical refinery. Services rendered consist of Architectural, Civil and Geotechnical Engineering, Cost Estimating, BCOES review and will consist of Construction Management and Engineering During Construction. Mr. Yokum is the lead structural engineer for the project and is responsible for designing the floodwall conversion from an I-Wall to a T-wall. Mr. Yokum is also responsible for designing a large swing gate for the project. Cost: \$15M Fee: \$1.8M Role: Structural Engineer			

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME William Wallace, PE, SECB, NCEES, MLSE	13. ROLE IN THIS CONTRACT Structural Engineer	14. YEARS EXPERIENCE a. TOTAL 42	b. WITH CURRENT FIRM 11
15. FIRM NAME AND LOCATION (City And State) MHZ JV – Fort Worth, TX	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Engineer (1986): NM (22715), FL (79230), OK (27607), WA (52055), TX (59641) Structural Engineering Certification Board (2008): 2158 NCEES Model Law Structural Engineer		
16. EDUCATION (DEGREE AND SPECIALIZATION) MS, Civil Engineering, University of Texas at Arlington, 1982 BS, Civil Engineering, University of Texas at Arlington, 1978	18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Mr. Wallace designs complex structures for major civil works projects for USCAE. Projects includes reinforced concrete hydraulic structures such as trapezoidal channel paving, rectangular channels, impact basins, drop structures, retaining walls, and reinforced concrete for principal and auxiliary spillways of lakes and dams. He provides structural design for modifications to dams and appurtenant structures to mitigate to dam safety concerns utilizing finite element analysis software to model the effects of the soil and water loading on the structures. He is involved in the Association of State Dam Safety Officials and written papers and presentations, provided training to other structural engineers on design of reinforced concrete hydraulic structures. He is a voting member of ACI 350, Structural Design of Environmental Concrete Structures.		
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) Design-Build RFP Development: 277K Levee Raise and Delta Pump Station – Dallas, TX	(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 2023		
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE a Scope: Developed the D/B Contractor RFP including 35% preliminary drawings for USACE solicitation of the Delta Pump Station Replacement. The Pump Station, owned by the City of Dallas for the Dallas Floodway System, includes storm water pump station replacement of the high flow pumps and pump house, as well as reuse of the structural chamber, incorporation of a new electrical control room, an enlarged plaza area, new concrete access road, security fencing replacement, site stair replacement, replacing heating and ventilation systems, and installing a new trash rack system. Cost: \$ 35M Fee: \$244K Role: Structural Engineer	<input checked="" type="checkbox"/> Check if project performed with current firm		
(1) TITLE AND LOCATION (City and State) Dallas Floodway Extension Recreation and Bridge Design – Dallas, TX	(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2020 2022		
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE b Scope: Design of approximately 2 miles of concrete trails, a large bridge crossing the Trinity River, two bridges crossing secondary waterways, a raised wooded boardwalk to reduce maintenance events in higher prone flooding areas, bird watching platforms, parking lots and multiple gates and pipe rail fences. Cost: \$5M Fee: \$8K Role: Structural Engineering ITR	<input checked="" type="checkbox"/> Check if project performed with current firm		
(1) TITLE AND LOCATION (City and State) Emergency Repairs to Gulf Coast Jetties and the Texas City Dike – Texas City, TX	(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2012 2012		
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE c Scope: Preparation of bridging documents and design-build RFP of nine jetty systems and Texas City Dike along the Texas Gulf Coast for a \$40M project for SWG. Performed site investigation and hydrographic/topographic survey. MII cost estimate prepared. The plans, RFP and cost estimate were prepared in accordance with applicable USACE Technical Manuals, Coastal Criteria and Standards. Cost: \$40M Fee: \$61K Role: Structural Engineer	<input checked="" type="checkbox"/> Check if project performed with current firm		
(1) TITLE AND LOCATION (City and State) Federal Flood Damage Reduction Projects at Addicks and Barker Reservoirs Floodgates Repair – Houston, TX	(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2012 2012		
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE d Scope: Prepared engineering design analysis for mechanical, electrical and structural components of the floodgates and operators for SWG. Performed flow and hydraulic calculations for new systems. Prepared construction documents and specifications for replacement of gate system, standby diesel generators and appurtenant facilities, replacement of the grating, and painting. Design analysis report and MII cost estimate were prepared. Reviewed submittals and shop drawings during construction. Cost: \$1.1M Fee: \$386K Role: Structural Engineer	<input checked="" type="checkbox"/> Check if project performed with current firm		
(1) TITLE AND LOCATION (City and State) Dam Safety and Improvements Program – Fort Hood, TX	(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2014 2015		
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE e Scope: Participated in assessment of 51 dams to develop a formal dam safety program. Provided structural and civil engineering expertise and prepared HEC models and MII estimating. DB RFPs for three dams prepared to address erosion repairs, dam embankment modifications, armoring, vegetation removal, and spillway modifications. Inspected spillways and intake structures of 12 dams. Cost: N/A Fee: \$425K Role: Structural Engineer	<input checked="" type="checkbox"/> Check if project performed with current firm		

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Steve Finegan, AIA	13. ROLE IN THIS CONTRACT Architect	14. YEARS EXPERIENCE a. TOTAL 34 b. WITH CURRENT FIRM 5	
15. FIRM NAME AND LOCATION (City And State) MHZ JV – New Orleans, LA			
16. EDUCATION (DEGREE AND SPECIALIZATION) MS, Architecture, Tulane University, 1984 BS, Architecture, Tulane University, 1980		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Architect (1987): TX (25434), LA (3898), TN (106064), MS (2873), AL (5101)	
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Mr. Finegan is a licensed architect with extensive recent Federal experience (USACE and the Air Force) providing architectural design services for government office buildings, drainage pump station safe houses and pump buildings, sewer treatment plants, and military facilities including labs, barracks, and munitions facilities. Additionally, Mr. Finegan has extensive experience providing construction phase services, including leading construction progress meetings, responding to contractor RFI's, reviewing and approving pay requests, and providing design during construction.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) Replacement of Granger Lake Office Building, Granger TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2019 2022	
<input type="checkbox"/> Check if project performed with current firm			
Scope: Development of a design-bid-build package (plans and specs) for the creation of a new Lake office management building and demolition of the existing facilities. Design services included civil, structural, electrical and mechanical engineering, as well as architectural and landscape architectural design. Mr. Finegan was the lead designer for the project. He worked with USACE and the Lake Management staff to develop a government office complex that met their needs and complied with the budget constraints. Cost: \$3.2M Fee: \$358K Role: Lead Architect			
(1) TITLE AND LOCATION (City and State) Cow Bayou Drainage Pump Station Complex Design – Orange County, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2020 2022	
<input type="checkbox"/> Check if project performed with current firm			
Scope: Development of a 35% design package (plans, specs, and DDR) for a new 8,000 cfs drainage pump station complex consisting of multiple flood risk management reduction measures such as a pump station, safe house, floodwalls, and sector gate. Main responsibilities consisted of civil, structural, and architectural analyses. The task order was to provide a 35% level of design with anticipation of changing the project to a Design-Build RFP. Mr. Finegan provided the architectural design for the drainage pump station safe house. His design included all facilities required for the safe house, inclusive of restrooms, dormitory housing and dining hall facilities. Cost: \$325M Fee: \$1.3M Role: Lead Architect			
(1) TITLE AND LOCATION (City and State) Ascension Parish Environmental Infrastructure Sewer Treatment Plant Design, Hillaryville, LA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2022 2024	
<input type="checkbox"/> Check if project performed with current firm			
Scope: Development of a design-bid-build package (plans and specs) for the creation of a 1.8 million gallon per day wastewater treatment plant as part of the Federal Section 219 Environmental Infrastructure program. Services consisted of detailed civil/structural/mechanical/electrical/architectural/geotechnical analyses, cost estimating, value engineering, and full USACE review process including BCOES review. Mr. Finegan designed the 3,200 square foot administration building and all internal features (offices, lab, kitchen, bathrooms, warehouse, etc.) Cost: \$21.5M Fee: \$1.5M Role: Lead Architect			
(1) TITLE AND LOCATION (City and State) Design-Build RFP Development: 277K Levee Raise and Delta Pump Station – Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 2023	
<input type="checkbox"/> Check if project performed with current firm			
Scope: Development of two design-build RFP packages for flood risk reduction measures along the Dallas Floodway, consisting of the 277K levee raise and Delta Pump Station replacement. Other services consisted of cost estimating, value engineering, design, drafting and planning for demolition of existing facilities, and Civil/Structural/Mechanical/Electrical/Architectural engineering analyses and design. Mr. Finegan was responsible for reviewing the plans and specs and providing ITR comments to the lead architect, prior to the deliverables being made to USACE. Cost: Construction \$6M Delta Pump Station, \$35M 277K Levee Raise Fee: \$1.2M Role: Architect providing ITR Review of Plans and Specs			

**E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)**

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Bill Hoelscher, RA, LEED AP	Architect	33	21

15. FIRM NAME AND LOCATION (*City And State*)

MHZ JV – Fort Worth, TX

16. EDUCATION (DEGREE AND SPECIALIZATION)	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)
M. Arch, University of Texas at Arlington, 1988 BA, Arts, University of Dallas, 1984	Registered Architect (1991): TX (14074), WA (10939) LEED Accredited Professional

18. OTHER PROFESSIONAL QUALIFICATIONS (*Publications, Organizations, Training, Awards, Etc.*)

William Hoelscher has experience providing complete architectural and space planning services to dozens of clients for one-time and multiple-unit projects of varying types and sizes. His work has included restaurants, offices, retail outlets, industrial facilities, and residences. His experience also includes providing design for USACE and Department of Homeland Security projects.

19. RELEVANT PROJECTS

(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (<i>if applicable</i>)
Renovations of the 1st Cavalry Headquarters – Fort Hood, TX	2018	2019

(3) DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Check if project performed with current firm

a **Scope:** The project was a \$48M renovation of a 130K SF Army Division Headquarters and Command Operations Facility including renovations of all administrative/office, an Operations Center (OC), Network Operations Center (NOC) and Sensitive Compartmented Information Facility (SCIF) served by an exterior Tactical SCI Vehicle Area (TSVA), including a Special Technical Operations (STO) Facility. Design of temporary swing space was also required. Our team provided full design construction documents and specifications (SpecsIntact) for the civil, structural, mechanical, electrical, telecom, plumbing and landscape disciplines. The site included increased parking improvements while still meeting AT/FP and ABA. The new mechanical systems were designed to exceed ASHRAE 90.1 by greater than 20%. Operationally critical areas of the facility were provided with redundant HVAC and the entire facility is served by a backup generator in the event of a primary electrical failure. **Cost:** \$46M **Fee:** \$1M **Role:** Architect

(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (<i>if applicable</i>)
CCAD Hangar 8 Renovation DB RFP – Corpus Christi Army Depot, TX	2018	2020

(3) DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Check if project performed with current firm

b **Scope:** Hangar 8 serves as part of the rotary wing rebuild activities at CCAD. This complex project includes a major overhaul of the systems and facility layout of approximately 70K square feet. The project includes upgrades to comply with applicable codes, UFCs and standards for all electrical, structural, fire suppression, HVAC, and concrete floor repairs. Services included a charrette to gather the user's specific requirements, validate the 1391 and prepare a ENG Form 3086. The team then prepared a design-build RFP, performed a structural evaluation and participated in the value engineering study with an independent design team. The design team continued support through the bidding phase with responses to RFIs and pre-proposal conference presentations. The design-build RFP was prepared in accordance with the AEIM and was submitted at each design phased with MII cost estimates. The project originally had a CCL of \$12.1M; however, after the charrette an ENG 3086 was complete, the project was reprogrammed for \$20M. **Cost:** \$20M **Fee:** \$368K **Role:** Architect

(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (<i>if applicable</i>)
Renovation of Historic Building B5676 and Hangar B6426 – Barksdale AFB, LA	2015	2016

(3) DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Check if project performed with current firm

c **Scope:** Revised floor plan layouts were developed for B5676 to meet the program and user needs. New HVAC, Electrical, Fire Alarm/Mass Notification and Fire Suppression system were designed to meet ASHRAE 90.1. B6426 Hangar 4 was renovated in place with the building occupied and operational thru out. The existing kitchen and day room were relocated from the ground floor to the second to make room for two additional Apparatus bays increasing capacity from 4 to 6 vehicles. B6426 Hangar 3 was gutted with selective demolition and asbestos abatement. All MEP systems were removed to leave a clean slate for future renovation. **Cost:** \$7.7M **Fee:** \$587K **Role:** Architect

(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (<i>if applicable</i>)
Replacement of Granger Lake Office Building, Granger TX	2013	2016

(3) DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Check if project performed with current firm

d **Scope:** Development of a design-bid-build package (plans and specs) for the creation of a new Lake office management building and demolition of the existing facilities. Design services included civil, structural, electrical and mechanical engineering, as well as architectural and landscape architectural design. **Cost:** \$3.2M **Fee:** \$358K **Role:** Architect for ITRs

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Harry Hawney, PE	13. ROLE IN THIS CONTRACT Electrical Engineer	14. YEARS EXPERIENCE a. TOTAL 44 b. WITH CURRENT FIRM 11	
15. FIRM NAME AND LOCATION (<i>City And State</i>) MHZ JV – Houston, TX			
16. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B. Eng., Electronics Engineering, National University of Ireland, 1970 MBA, Trinity College, 1971		17. CURRENT PROFESSIONAL REGISTRATION (<i>STATE AND DISCIPLINE</i>) Professional Engineer: (1981): LA (19229)	
18. OTHER PROFESSIONAL QUALIFICATIONS (<i>Publications, Organizations, Training, Awards, Etc.</i>) Mr. Hawney's has over 40 years of power and electrical engineering experience which includes site lighting, drainage pump stations, roadways, airports, power plants, water treatment and wastewater treatment facilities, and electrical and generator layouts for new facilities. He is proficient and experienced in designing airfield lighting as well as the relocation of high voltage powerlines, transfer poles and SCADA systems.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (<i>City and State</i>) East Baton Rouge Parish Environmental Infrastructure North Wastewater Treatment Plant Collection System 5 MG Ground Storage Tank and Pump Station, Baton Rouge, LA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2022 2024	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE a Scope: Development of a design-bid-build package (plans and specs) to provide wastewater storage through the Federal Section 219 EI program. Design includes two pile supported above ground 5 million gallon pre-stressed concrete storage tanks, a 14,00 gpm sewer pump station, new control building and generators for emergency power. Mr. Hawney is the lead electrical engineer for the project. He was responsible for providing the electrical schedules, site plans, aeration electrical plan, admin building power and lighting plan, operation control power plan, and MCC on 1-line diagrams. Cost: \$17M Fee: \$1.2M Role: Electrical Engineer			
(1) TITLE AND LOCATION (<i>City and State</i>) Timber Creek Recreational and Site Access Design – Austin TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2021 2022	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE b Scope: Development of a design-bid-build package (plans and specs) for the development of a public park in Austin, TX. Services consisted of geotechnical investigations, civil and structural design analyses, cost estimating, topographic survey, and coordination with the non-Federal sponsor, the Travis County Parks department. Mr. Hawney was the lead electrical engineer, he was responsible for establishing a new meter at the main roadway, running underground conduit to a new power pole and transformer (hung above the 50-year floodplain), running power to the restroom facility and grinder station and designing the new fire loop that will supply water to the entire public park. Mr. Hawney was also responsible for providing site lighting. Cost: \$3.7M Fee: \$356K Role: Electrical Engineer			
(1) TITLE AND LOCATION (<i>City and State</i>) Section 219 Environmental Infrastructure, Sewer Lift Station and Force main at the East Baton Rouge Landfill – Baton Rouge, LA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2019 2020	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE c Scope: Through the Section 219 Environmental Infrastructure Program and USACE MVN, our team completed expedited design for 3,200 linear feet of 48" ductile iron force main and a new effluent pump station at the Baton Rouge landfill. Due to an emergency, plans and specs, cost estimates and the DDR were developed and approved within 6 months. Mr. Hawney was the lead electrical engineer for the project. He was responsible for design of the new electrical controls, the inclusion of a new generator and generator hookups for the new sewer liftstation, and design of site lighting. Cost: \$3.2M Fee: \$366K Role: Electrical Engineer			
(1) TITLE AND LOCATION (<i>City and State</i>) Harahan Drainage Pump to the River – Harahan, LA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2016 2018	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE d Scope: Our team provided final design services for this USACE MVN flood risk management project. Project elements included a 700 ft. suction canal, a 1,200 cfs pumping station, three 9,000 ft. long 84-inch diameter discharge pipes to the Mississippi River levee, the levee crossing design, and reinforced concrete discharge basin in the Mississippi River. Mr. Hawney provided design for the detailed electrical controls, provided electrical power design set-up for the safe house, and provided site lighting design. He was also responsible for designing the emergency back-up generator, the generator connections and designing the SCADA system that can be used when the station is not manned. Cost: \$135M Fee: \$879K Role: Electrical Engineer			

**E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)**

12. NAME Scott Parma, PE, LEED AP	13. ROLE IN THIS CONTRACT Electrical Engineer	14. YEARS EXPERIENCE a. TOTAL 40 b. WITH CURRENT FIRM 17	
15. FIRM NAME AND LOCATION (<i>City And State</i>) MHZ JV – Fort Worth, TX			
16. EDUCATION (<i>Degree and Specialization</i>) BS, Electrical Engineering, Texas A&M University, 1981	17. CURRENT PROFESSIONAL REGISTRATION (<i>State and Discipline</i>) Professional Engineer (1993): TX (75690) LEED Accredited Professional		
18. OTHER PROFESSIONAL QUALIFICATIONS (<i>Publications, Organizations, Training, Awards, Etc.</i>) Mr. Parma's engineering experience includes power distribution, electrical systems analysis, system planning, and electrical system design and construction administration. He has completed a wide variety of projects in the utility, transportation, and vertical construction markets for both private and government clients. Parma has been the lead electrical engineer for the team's major design assignments for all our federal projects.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (<i>City and State</i>) Design-Build RFP Development: 277K Levee Raise and Delta Pump Station – Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2021 2023	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Developed the D/B Contractor RFP including 35% preliminary drawings for USACE solicitation of the Delta Pump Station Replacement. The Pump Station, owned by the City of Dallas for the Dallas Floodway System, includes storm water pump station replacement of the high flow pumps and pump house, as well as reuse of the structural chamber, incorporation of a new electrical control room, an enlarged plaza area, new concrete access road, security fencing replacement, site stair replacement, replacing heating and ventilation systems, and installing a new trash rack system. Cost: \$ 35M Fee: \$244K Role: Electrical Engineer			
(1) TITLE AND LOCATION (<i>City and State</i>) Dallas Floodway Extension Recreation and Bridge Design – Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2020 2022	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Design of approximately 2 miles of concrete trails, a large bridge crossing the Trinity River, two bridges crossing secondary waterways, a raised wooded boardwalk to reduce maintenance events in higher prone flooding areas, bird watching platforms, parking lots and multiple gates and pipe rail fences. Cost: \$5M Fee: \$8K Role: Electrical Engineer for ITRs			
(1) TITLE AND LOCATION (<i>City and State</i>) Short Circuit & Arc Flash Analysis – Various Locations		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2018 N/A	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Tasked to provide Arc Flash Analysis and studies for 24 Lake Facilities managed by the USACE Fort Worth District. The lake facilities consist of Outlet Works, Spillways, and Hydro Electric Plants. In order to accomplish an Arc Flash Study, gathered all the information regarding the facility electrical system from both record drawings and the actual installation by visiting the site and recording data such as wire lengths and sizes, circuit breaker and fuse data, and other information. Cost: N/A Fee: \$680K Role: Lead Electrical Engineer			
(1) TITLE AND LOCATION (<i>City and State</i>) Damage Assessments for Galveston County Following Hurricane Harvey		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2018 N/A	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Damage assessments for the County's facilities and infrastructure including nearly 85 miles in length, 32 county buildings, one bridge, two county parks and one lift station; prepared damage assessment reports and cost estimates. Prepared the final report using GIS database and geo-linked each damage assessment report with photographs. Coordinated and submitted all data to FEMA. Cost: \$85M Fee: 3.9M Role: Electrical Engineer and Assessor			
(1) TITLE AND LOCATION (<i>City and State</i>) Federal Flood Damage Reduction Projects at Addicks and Barker Reservoirs Floodgates Repair – Houston, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2012 2012	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Prepared engineering design analysis for mechanical, electrical and structural components of the floodgates and operators for USACE Galveston District. Performed flow and hydraulic calculations for new systems. Prepared construction documents and specifications for replacement of gate system, standby diesel generators and appurtenant facilities, replacement of the grating, and painting. Design analysis report and MII cost estimate were prepared. Reviewed submittals and shop drawings during construction. Cost: \$7.7M Fee: \$1.1M Role: Electrical Engineer			

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Jeff Wilson, PE, LEED AP	13. ROLE IN THIS CONTRACT Mechanical Engineer	14. YEARS EXPERIENCE a. TOTAL 17 b. WITH CURRENT FIRM 17	
15. FIRM NAME AND LOCATION (City And State) MHZ JV – Fort Worth, TX			
16. EDUCATION (DEGREE AND SPECIALIZATION) BS, Mechanical Engineering, University of Texas at Arlington, 2003 BA, Architecture, University of Texas at Arlington, 1998	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Engineer (2006): CA (36160), WA (49618), NM (21194), MD (45121), TX (103832), MI (6201059687)		
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Jeff has served as the senior mechanical engineer for USACE, Army and IIS projects. His design experience has included new construction and facility renovations. He has also prepared engineering analyses and studies related to energy conservation/reduction and performed detailed HVAC design requirements and load simulators for commercial and industrial complexes.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) Design-Build RFP Development: 277K Levee Raise and Delta Pump Station – Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 2023	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Developed the D/B Contractor RFP including 35% preliminary drawings for USACE solicitation of the Delta Pump Station Replacement. The Pump Station, owned by the City of Dallas for the Dallas Floodway System, includes storm water pump station replacement of the high flow pumps and pump house, as well as reuse of the structural chamber, incorporation of a new electrical control room, an enlarged plaza area, new concrete access road, security fencing replacement, site stair replacement, replacing heating and ventilation systems, and installing a new trash rack system. Cost: \$ 35M Fee: \$244K Role: Mechanical Engineer			
(1) TITLE AND LOCATION (City and State) Repair Hurricane Damage Goose Island State Park – Rockport, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2018 2019	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Coastal erosion and beach nourishment restoration, eco-system habitat restoration and coastal hurricane storm damage repair (structural and non-structural) due to Hurricane Harvey of 320 acre state park on Aransas Bay. Site Investigation and preparation of detailed plans, specifications and estimates to repair beach erosion with living shoreline and hurricane storm surge damage to bulkheads, lift station controls and pumps, recreation hall, site structures and beach and 1,800 linear foot fishing pier. Cost: \$2M Fee: \$236K Role: Lead Mechanical Engineer			
(1) TITLE AND LOCATION (City and State) FEMA Recertification of the Texas City Hurricane and Flood Protection System – Galveston County, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2014 N/A	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Inspection, engineering analysis of USACE design and preparation of technical documentation to certify that the Texas City Hurricane Flood Protection Levee meets the requirements of 44 CFR Section 65.10 of the National Flood Insurance Program regulations for Federal Emergency Management Agency Levee Certification. Certification of this 21.2 mile long, coastal flood and hurricane levee system meets the coastal levee design criteria for freeboard, closures, embankment protection, embankment and foundation stability, settlement, interior drainage, pump stations and other design criteria established by FEMA. Cost: N/A Fee: \$175K Role: Mechanical Engineer & Assessor;			
(1) TITLE AND LOCATION (City and State) Federal Flood Damage Reduction Projects at Addicks and Barker Reservoirs Floodgates Repair, Houston, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2012 2012	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Prepared engineering design analysis for mechanical, electrical and structural components of the floodgates and operators for SWG. Performed flow and hydraulic calculations for new systems. Prepared construction documents and specifications for replacement of gate system, standby diesel generators and appurtenant facilities, replacement of the grating, and painting. Design analysis report and MII cost estimate were prepared. Reviewed submittals and shop drawings during construction. Cost: \$1.1M Fee: 386K Role: Lead Mechanical Engineer			
(1) TITLE AND LOCATION (City and State) Damage Assessments for Galveston County Following Hurricane Harvey		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2018 N/A	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Damage assessments for the County's facilities and infrastructure including nearly 85 miles in length, 32 county buildings, one bridge, two county parks and one lift station; prepared damage assessment reports and cost estimates. Prepared final report using GIS database and geo-linked each damage assessment report with photographs. Coordinated and submitted all data to FEMA. Cost: N/A Fee: \$820K Role: Mechanical Engineer and Assessor			

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME William Krasner, PE	13. ROLE IN THIS CONTRACT Mechanical Engineer	14. YEARS EXPERIENCE a. TOTAL 19 b. WITH CURRENT FIRM 9	
15. FIRM NAME AND LOCATION (<i>City And State</i>) MHZ JV – Houston, TX			
16. EDUCATION (<i>Degree and Specialization</i>) MS, Engineering Management, University of Texas at Austin, 2011 BS, Mechanical Engineering, Rice University, 1993	17. CURRENT PROFESSIONAL REGISTRATION (<i>State and Discipline</i>) Professional Engineer (2004): First Year Registered, TX (93782), LA (33539), NM (22584)		
18. OTHER PROFESSIONAL QUALIFICATIONS (<i>Publications, Organizations, Training, Awards, Etc.</i>) Mr. Krasner provides design for plumbing, process piping, steam systems, fueling, irrigation, pumping stations, lift stations, well/hydro-pneumatic tank water systems and site utility systems. He has also been responsible for designing and developing pump stations, lift station and other site/civil works projects for various governmental, educational, commercial and residential buildings.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (<i>City and State</i>) Damage Assessments for Galveston County Following Hurricane Harvey		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2018 N/A	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE a Scope: Damage assessments for the County's facilities and infrastructure including nearly 85 miles in length, 32 county buildings, one bridge, two county parks and one lift station. Final products included damage assessment reports and cost estimates. Prepared damage assessment reports and cost estimates. The final report was prepared using GIS database and geo-linked each damage assessment report with photographs. Coordinated and submitted all data to FEMA. Cost: N/A Fee: 850K Role: Mechanical Engineer and Assessor			
(1) TITLE AND LOCATION (<i>City and State</i>) East Water Purification Plant, Northeast Water Purification Plant, and Ardmore Complex – Houston, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2015 ONGOING	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE b Scope: The service center consists of an electrical maintenance bay, machine shop bay, mechanical maintenance bay with overhead crane, pumps/motors/parts supply storage, carpenters shop and instrumentation and meter shops; administrative offices and work stations; conference rooms; training room; crew areas consisting of a break room, showers, lockers and restrooms; warehouse storage; emergency generator; site security; parking areas, elevator, utilities, landscaping and storm water detention and quality ponds. Cost: \$30M Fee: \$1.4M Role: Mechanical Engineer			
(1) TITLE AND LOCATION (<i>City and State</i>) Federal Flood Damage Reduction Projects at Addicks and Barker Reservoirs Floodgates Repair, Houston, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2012 2013	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE c Scope: Prepared engineering design analysis for mechanical, electrical and structural components of the floodgates and operators for SWG. Performed flow and hydraulic calculations for new systems. Prepared construction documents and specifications for replacement of gate system, standby diesel generators and appurtenant facilities, replacement of the grating, and painting. Design analysis report and MII cost estimate were prepared. Reviewed submittals and shop drawings during construction. Cost: \$1.1M Fee: 386K Role: Mechanical Engineer QC			
(1) TITLE AND LOCATION (<i>City and State</i>) Repair Hurricane Damage Goose Island State Park – Rockport, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2018 2019	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE d Scope: The new Angleton Area Engineer and Maintenance Facility located 45 miles south of Houston, TX consists of planning for five buildings totaling 38,395 square feet on a 15.490 acre greenfield site in Angleton, TX. Other planned site features include relocating a 160 foot tall antenna tower and fuel island from the nearby TxDOT Angleton Area Facility. Lastly the new site will include a detention pond and asphalt parking for visitors and employee's. Cost: \$2M Fee: \$236K Role: Mechanical Engineer			
(1) TITLE AND LOCATION (<i>City and State</i>) FEMA Recertification of the Texas City Hurricane and Flood Protection System – Galveston County, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2014 N/A	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE e Scope: Inspection, engineering analysis of USACE design and preparation of technical documentation to certify that the Texas City Hurricane Flood Protection Levee meets the requirements of 44 CFR Section 65.10 of the National Flood Insurance Program regulations for Federal Emergency Management Agency Levee Certification. Certification of this 21.2 mile long, coastal flood and hurricane levee system meets the coastal levee design criteria for freeboard, closures, embankment protection, embankment and foundation stability, settlement, interior drainage, and other design criteria established by FEMA. Cost: N/A Fee: \$175K Role: Mechanical Engineer			

**E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)**

12. NAME Chris Scott, RLA, ASLA, LEED AP, CNU-A	13. ROLE IN THIS CONTRACT Landscape Architect	14. YEARS EXPERIENCE a. TOTAL 31 b. WITH CURRENT FIRM 14	
15. FIRM NAME AND LOCATION (City And State) MHZ JV – Dallas, TX			
16. EDUCATION (DEGREE AND SPECIALIZATION) BA, Landscape Architecture, Texas Tech University, 1992		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Registered Landscape Architect (1999): WA (1065), NM (398), CO (LA.0000904), CA (5316), TX (1976), OR (LA0633)	
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Chris Scott is the team leader for Planning and Landscape Architecture in the HZ Dallas office. He has extensive experience in all areas of landscape design, including a focus in parks and recreation development on a regional scale.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) Cedar Hill State Park Flood Repairs and Utility Replacements – Cedar Hill, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2019 2019	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Prepared a new master plan for the Day Use Area and designed: Stabilization of up to 4,000 linear feet of the eroded shoreline; Landscaping, Grading and Revegetation; Trails and sidewalks; Replacement for Comfort Station (CS) #7; Renovation of CS Nos. 6 and 9; Two (2) new CS at the boat ramp and near the fishing pier; a New Group Recreation Hall; New swim area with an ADA accessible route; New picnic tables with reinforced concrete slabs and shelters; New playground and equipment; Replacement of a lift station and grinder pumps; Electrical and IT services and New and Replacement waterlines and sanitary sewer force mains. Cost: \$4.6M Fee: \$952K Role: Landscape Architect			
(1) TITLE AND LOCATION (City and State) Memorial Park at the Brazos River – Sugar Land, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2016 2017	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Landscape Architect for the master plan and final design of this 420-acre regional park along the Brazos River in Sugar Land, Texas. The park was constructed entirely within the floodway of the Brazos River and has jurisdictional wetlands within its boundaries. Scope of services included topographic and aerial LIDAR surveying, environmental assessment, wetlands delineation, threatened and endangered species assessment, coordination and permitting with USACE, archeological investigations, hydraulic and hydrologic engineering, and development of a conceptual park master plan. Cost: N/A Fee: \$386K Role: Landscape Architect			
(1) TITLE AND LOCATION (City and State) Arrow Brooke Park – Aubrey, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2019 2020	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Arrow Brooke is a 13-acre master-planned community park located in Denton County just north of U.S. Highway 380 on FM 1385. Arrow Brooke Park has been master planned and developed for the Denton County Fresh Water Supply District #10. Mr. Scott led a team to develop 3 soccer fields, a football field, a baseball field, hike and bike trails, family pavilion, restrooms and concessions facility, dog park, playgrounds, and other park site amenities. Cost: \$1.3M Fee: \$258K Role: Landscape Architect			
(1) TITLE AND LOCATION (City and State) Cottonwood Creek Trail and Bank Stabilization – Allen, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2016 2016	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Our team performed alternative analysis, prepared concept plans and final construction bid documents within 59 days. In order to limit the project footprint, our team's solution relied considerably on soil and rock nails, shotcrete, and a cast-in-place wall; these features also met the permitting and hydraulic conveyance objectives. The project lies within a FEMA Zone AE floodplain with a defined floodway. Cost: \$1.8M Fee: \$83K Role: Landscape Architect			
(1) TITLE AND LOCATION (City and State) Soos Creek Trail – King County, WA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2018 ONGOING	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Scott served as Landscape Architect for the current phase of this project, which encompasses the final section of trail from SE 192nd Street in King County to the Renton Maple Valley Highway (SR-169), where it connects to Cedar River Trail. The design required sensitivity to critical protected areas of streams used for seasonal spawning salmon and steelhead and a resident trout population as well as wetland areas. Considerable coordination occurred with adjacent suburban development that made erosion control issues a major concern, as well as with multiple environmental agencies with jurisdiction, and city and utility companies. Cost: \$5.5M Fee: \$750K Role: Landscape Architect			

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Stephen R. Richards, PE	13. ROLE IN THIS CONTRACT Geotechnical Engineer	14. YEARS EXPERIENCE a. TOTAL 50 b. WITH CURRENT FIRM 31	
15. FIRM NAME AND LOCATION (City And State) ETTL Engineers & Consultants Inc. – Tyler, TX			
16. EDUCATION (DEGREE AND SPECIALIZATION) BS, Civil Engineering, Rutgers University, 1972	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Engineer (1976), TX (46424), AR (8984), OK (18776), LA (21106)		
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Four decades of civil engineering and construction experience including 25 years of responsible charge of geotechnical design and construction materials engineering for transportation, industrial, commercial and residential projects.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) RGAAF Grated Trench Drain Repair - Fort Hood, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2015 2015	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE a Scope: Repairs to existing grated trench drains on an operational airfield. Geology was Walnut Clay formation consisting of weathered limestone (gravelly lean and fat clays). Coordinated coring of pavement, soil sampling, Dynamic Cone Penetrometer (DCP) testing and hole patching within limitations of active aircraft use. Conducted swell testing to evaluate swell pressures on drain structure and assessed surface infiltration-related erosion beneath pavement. Cost: \$2.8M Fee: \$49K Role: Geotechnical Engineer and Project Manager			
(1) TITLE AND LOCATION (City and State) Lake Tyler Dam & Spillway Forensic Investigation – Tyler, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2012 2012	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE b Scope: Laboratory testing included: Atterberg liquid and plastic limits, percentage of fines passing No. 200 sieve, moisture content, unit weight, Unconsolidated/Udrained Triaxial (UU) Compression, Consolidated/Udrained Triaxial (CU) Compression, Direct Shear, sieve analysis, Particle Size Analysis by Hydrometer, permeability, Pinhole Dispersion, specific gravity, Standard Proctor, and crumb test. Evaluated data, determined cause of seepage and erosion, evaluated preliminary remediation designs, produced recommendations in Preliminary Design Report. Construction Phase: Qualified prospective cut-off wall contractors, developed protocol for CSB field sampling and laboratory testing for UU, permeability and unit weight. Cost: \$9M Fee: \$112K Role: Geotechnical Engineer and Project Manager			
(1) TITLE AND LOCATION (City and State) Dallas Floodway Extension Phase II Recreation and Access Design, Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2019 2022	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE c Scope: provided a Geotechnical Investigation and foundation design recommendations to define and evaluate the general subsurface conditions along the proposed trail extensions and creek crossings located in the Trinity River Floodplain between loop 12 and IH30 bridges in Dallas, Texas. Specifically, the study was conducted to determine the following: Subsurface stratigraphy with the limits of exploratory borings; classification and strength of the foundation soils; appropriate foundation types and bearing capacities to be used in the design; and construction related issues that may be anticipated by the investigation. Cost: \$4.7M Fee: \$60K Role: Geotechnical Engineer and Project Manager			
(1) TITLE AND LOCATION (City and State) USACE Design of New Border Patrol Station (for Border Wall) – Freer, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2018 2018	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE d Scope: Provided a Geotechnical Investigation and foundation design recommendations. Construction included: 48,000 SF patrol station building, 100' tall communication tower, emergency generator, 16,950 SF vehicle maintenance building, 6750 SF equestrian facility, 2800 SF boat storage, 2100 SF ATV storage, 8704 SF in-door firing range, 3523 SF kennel, 18,769 SF helipad, 30' diameter water tank, 1200 SF pump house, 1500 SF vehicle inspection booth, fuel station, 12,000 gallon UST, wash bays, central utility plant, drives, parking areas, perimeter fences, exterior lighting and security cameras. Boring depths were determined during the field investigation and were based on lithologies encountered, depth to bedrock and USACE requirements. Cost: \$6M Fee: \$181K Role: Geotechnical Engineer and Project Manager			

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Manish Mardia, PE	13. ROLE IN THIS CONTRACT Environmental Engineer	14. YEARS EXPERIENCE a. TOTAL 27 b. WITH CURRENT FIRM 10	
15. FIRM NAME AND LOCATION (<i>City And State</i>) MHZ JV – New Orleans, LA			
16. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) MS, Civil Engineering, University of Jodhpur, 1994 BS, Civil Engineering, Louisiana State University, 1990	17. CURRENT PROFESSIONAL REGISTRATION (<i>STATE AND DISCIPLINE</i>) Professional Engineer/Environmental (1999): LA (28482), MS (18522)		
18. OTHER PROFESSIONAL QUALIFICATIONS (<i>Publications, Organizations, Training, Awards, Etc.</i>) Mr. Mardia is a professional engineer with 27 years of experience designing and managing civil works projects for USACE. Mr. Mardia has successfully executed over 60 task orders related to flood risk reduction and drainage projects. His design expertise spans earthen levee and floodwall evaluation, inspection and design, drainage pump station evaluation and design, and preparation of engineering reports related to environmental infrastructure projects, drainage evaluation projects and the evaluation of existing facilities and infrastructure.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (<i>City and State</i>) Cow Bayou Drainage Pump Station Complex Design, Orange, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2020 2022	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Development of a 35% design package (plans, specs, and DDR) for a new 8,000 cfs drainage pump station complex consisting of multiple flood risk management reduction measures such as a pump station, safe house, floodwalls, and sector gate. Main responsibilities consisted of civil, structural, and architectural analyses. The task order was to provide a 35% level of design with anticipation of changing the project to a Design-Build RFP. Mr. Mardia provided design of the fuel storage area, in addition to designing wastewater infrastructure as part of the site design for placement of the new drainage pump station complex. Cost: \$325M Fee: \$1.3M Role: Environmental Engineer			
(1) TITLE AND LOCATION (<i>City and State</i>) Texas City I-Wall to T-Wall Conversion Design, Texas City, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2021 2022	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Development of a design-bid-build package (plans and specs) for approximately a mile of failed Federal floodwall conversion from an I-Wall to a T-wall on an active chemical refinery. Services rendered consist of Architectural, Civil and Geotechnical Engineering, Cost Estimating, BCOES review and will consist of Construction Management and Engineering During Construction. Mr. Mardia provided design services consisting of the construction approach for driving sheetpile beneath an active chemical fuel line and rack, as well as the movement and transport of materials within an active chemical refinery. Cost: \$15M, Fee: \$1.8M Role: Environmental Engineer			
(1) TITLE AND LOCATION (<i>City and State</i>) Ascension Parish Environmental Infrastructure Sewer Treatment Plant Design, Hillaryville, LA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2022 2024	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Development of a design-bid-build package (plans and specs) for the creation of a 1.8 million gallon per day wastewater treatment plant as part of the Federal Section 219 Environmental Infrastructure program. Services consisted of detailed civil/structural/mechanical/electrical/architectural/geotechnical analyses, cost estimating, value engineering, and full USACE review process including BCOES review. Mr. Mardia was the lead environmental engineer for the project, he provided design of the treatment process facility and equipment, as well as provided detailed environmental calculations to USACE. Mr. Mardia was also responsible for the project permitting. Cost: \$21.5M Fee: \$1.5M Role: Environmental Engineer			
(1) TITLE AND LOCATION (<i>City and State</i>) East Baton Rouge Parish Environmental Infrastructure North Wastewater Treatment Plant Collection System 5 MG Ground Storage Tank and Pump Station, Baton Rouge, LA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2022 2024	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Development of a design-bid-build package (plans and specs) to provide wastewater storage through the Federal Section 219 EI program. Design includes two pile supported above ground 5 million gallon pre-stressed concrete storage tanks, a 14,000 gpm sewer pump station, new control building and generators for emergency power. Mr. Mardia is the lead environmental engineer for the project. He has provided extensive coordination and design regarding the selection of the tank, as well as of the environmental controls. Mr. Mardia has developed a detailed DDR reviewed by USACE, documenting this process. Cost: \$17M Fee: \$1.2M Role: Environmental Engineer			

**E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)**

12. NAME Saumya Sarkar, PE	13. ROLE IN THIS CONTRACT Environmental Engineer	14. YEARS EXPERIENCE a. TOTAL 11 b. WITH CURRENT FIRM 11	
15. FIRM NAME AND LOCATION (<i>City And State</i>) Tetra Tech, Inc. – Research Park, NC [Sits in Dallas, TX]			
16. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) MS, Environmental Engineering and Science, Clemson University, 2009 BS, Civil Engineering, Indian Institute of Technology BHU, 2007	17. CURRENT PROFESSIONAL REGISTRATION (<i>STATE AND DISCIPLINE</i>) Professional Engineer: (2020), TX (137702)		
18. OTHER PROFESSIONAL QUALIFICATIONS (<i>Publications, Organizations, Training, Awards, Etc.</i>) Mr. Sarkar is experienced in the development, implementation, communication, and interpretation of watershed, water quality, and H&H models; GIS analysis, resiliency analysis, and software development. He has supported federal, state, and municipal governments in watershed-based planning, stormwater management, flood mitigation planning, TMDL development, BMP implementation and evaluation, and resiliency analysis.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (<i>City and State</i>) Negley Run Section 219 Environmental Infrastructure, Pittsburgh, PA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2020 N/A	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: This project strives to propose engineering solutions to reduce excessive flooding in Washington Blvd. and Negley Run Blvd. Performed H&H modeling using EPA-SWMM and XPSWMM 1D2D to assess the extent and magnitude of flooding under existing conditions and with proposed mitigation measures - diversion channel, detention basins, swales and regenerative stormwater conveyance. Modeled existing and proposed system hydraulics using XPSWMM for design storms with return periods of 2, 10, 50 and 100-year and 1-hr and 24-hr durations, and three historic rainfall events. Cost: N/A Fee: \$463K Role: Environmental Engineer			
(1) TITLE AND LOCATION (<i>City and State</i>) Water System Design for Dallas Water Gardens, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2019 N/A	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Assessed the feasibility of converting a portion of the Able Sump system to wetlands through a grant-funded public-private partnership. Led modeling using XPSWMM to describe existing system hydraulics, hydrology and water quality and subsequently evaluate flood mitigation and water quality benefits under proposed wetland scenarios. Reviewed existing asset data to inform model development. Coordinated stakeholder meetings, managed client expectations, led report development and delivery. Through conversion of six existing ponds in the Cedars neighborhood, this project is planned to achieve environmental and community improvement goals by improving water quality, reducing flooding, and creating recreation opportunities through the addition of boardwalks and greenspace. Cost: N/A Fee: \$354K Role: Environmental Engineer			
(1) TITLE AND LOCATION (<i>City and State</i>) Hazard Mitigation Grant Program – Houston, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2019 N/A	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Reviewed HEC-RAS and HEC-HMS models for the development of Hazard Mitigation Grant Program applications for the City of Houston's proposed resiliency projects to address flooding. All project areas selected for evaluation for the grant program flooded in 2017 due to hurricane Harvey. The resiliency projects required review of existing models and development of post-project models to determine the level of benefit associated with the project. Benefits were determined for the 10-, 50- 100-, and 500-year storm events. Cost: N/A Fee: \$80K Role: Environmental Engineer and Modeler			
(1) TITLE AND LOCATION (<i>City and State</i>) BMP Performance Under a Changing Climate, New England		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2018 N/A	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: The project aimed at evaluating the impact of climate change on the performance of urban, agricultural, and forestry BMPs. Developed city block scale biogeochemical models for stormwater green infrastructure practices using RHESSys; developed watershed models using SWAT to simulate agricultural and forestry BMPs; simulated long-term hydrological and water quality outcomes under historic and future climate; authored and co-authored two peer-reviewed manuscripts. Cost: N/A Fee: \$158K Role: Environmental Engineer			

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Allison Wood, PE, CFM, LEED GA	13. ROLE IN THIS CONTRACT Hydrologic/Hydraulic Engineer	14. YEARS EXPERIENCE a. TOTAL 6 b. WITH CURRENT FIRM 6
15. FIRM NAME AND LOCATION (City And State) MHZ – Dallas, TX		
16. EDUCATION (DEGREE AND SPECIALIZATION) BS, Environmental Engineering, Southern Methodist University, 2015 BS, Mathematics, Southern Methodist University, 2015	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Engineer (2018): LA (44470), CO (PE.0056483), TX (132907) Certified Floodplain Manager: 3442-18N LEED Green Associate	
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Allison has focused her career in hydrologic and hydraulic studies and design throughout Texas. She is experienced in both 1D & 2D hydraulic modeling as well as creating and utilizing GIS databases and python scripting. Her H&H experience also includes open channel hydraulics, streambank protection, detention design, bridge hydraulic and scour studies, river migration, stormwater modeling, low impact development stormwater studies, and FEMA modeling and permitting.		
19. RELEVANT PROJECTS		
(1) TITLE AND LOCATION (City and State) Greater Houston Flood Mitigation Consortium – Houston, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2019 N/A
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE a Scope: Wood was a key team member in collecting data and producing content for the Greater Houston Flood Consortium, a group of leading researchers and organizations that came together post-Harvey to compile, analyze, and share scientifically informed data about flooding risk and mitigation opportunities to inform high-level decision making as Houston rebuilds. The Consortium was focused on interdisciplinary solutions that incorporate updated scientific data, more sustainable design standards, and socio-economic equality. Cost: N/A Fee: \$500K Role: Hydraulic Engineer		
(1) TITLE AND LOCATION (City and State) Rush Creek Scour-Erosion Protection Design – Arlington, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2017 NA
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE b Scope: Rush Creek experienced significant erosion over last several years. Rainfall events with sufficient magnitude to cause erosion have lately occurred more frequently than usual. The Creek has responded and the continued erosion is placing nearby public and private infrastructure at risk. Hydraulic modeling (steady and unsteady) was performed to verify that the proposed project would not have any adverse impact to existing water surface elevations as the project lies within a FEMA Zone AE floodplain with a defined floodway. Cost: N/A Fee: \$128K Role: Hydraulic Engineer		
(1) TITLE AND LOCATION (City and State) SH 63 Bridge Replacement – Sabine River, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2020 2023
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE c Scope: Providing hydraulic design and river migration study for 1,875 FT long bridge crossing on Sabine River. Study used historical imagery and GIS for future bridge crossing selection. HEC-RAS 1D/2D model used to map 3.5 mile wide floodplain. Flood frequency analysis using Bulletin #17C method. Provided resiliency assessment for 95% confidence limit for 1% AEP storm event. RASMapper and GIS used to analyze 2D model results. Cost: \$220M Fee: \$3.1M Role: Lead Hydraulic Engineer		
(1) TITLE AND LOCATION (City and State) Sloan Creek Master Drainage Study – Fairview, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2019 N/A
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE d Scope: Developed Stormwater Master Plan including criteria for detention facilities, storm drainage infrastructure, stream preservation alternatives, water quality Best Management Practices and water reuse alternatives. Developed analysis of low-impact development best practices. BMPs selected for water quality and peak discharges for 2 year storm event through simulation hydrologic modeling in HEC-HMS. Innovative solutions included flow duration curve analysis to prevent hydromodification from future development, increased detention volumes and low releases rates to match duration of erodible flow to limit future channel erosion. Cost: N/A Fee: \$363K Role: Hydraulic Engineer		
(1) TITLE AND LOCATION (City and State) Brazos River Erosion and Meander Migration Study – Fort Bend County, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) ONGOING N/A
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE e Scope: Study of 140 miles of river, aerial survey, environmental planning activities, geotechnical investigation, geomorphology, design analysis, H&H, 2D HEC RAS model, probability, consequences and risk analysis associated with projecting the extent and probability of meander migration of the Brazos River over the next 30 years. Focusing on the upstream head cut, increased sediment load and disposition downstream and increased flows and river velocities. Cost: N/A Fee: \$125K Role: Hydraulic Engineer		

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Josh Carter, PE, D.CE	13. ROLE IN THIS CONTRACT Hydrologic/Hydraulic Engineer	14. YEARS EXPERIENCE a. TOTAL 21 b. WITH CURRENT FIRM 19	
15. FIRM NAME AND LOCATION (City And State) Mott MacDonald, LLC – Austin, TX			
16. EDUCATION (DEGREE AND SPECIALIZATION) MS, Civil and Environmental Engineering, Massachusetts Institute of Technology, 2002 BS, Ocean Engineering, Texas A&M University, 1999		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Civil Engineer (2006): TX (97258) Diplomate, Coastal Engineering #116	
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Mr. Carter models and analyzes hydrologic, hydraulic and coastal processes including hydraulic systems, riverine and estuarine dynamics, water quality, and vessel hydrodynamics. He routinely uses modeling tools including the USACE's CMS model suite, HEC-HMS and HEC-RAS, ADCIRC+SWAN, the MIKE and Delft3D suits, and CFD tools, all to understand the environmental setting and implement solutions to fortify communities against erosion and flooding.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) Clear Creek Pump Station, Gate, and Floodwall Hydrologic and Hydraulic Modeling and Design Development – Harris County, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 N/A	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: USACE feasibility study for the USACE Galveston District that assessed the potential benefits and costs in storm damage risk reduction measures as well as ecosystem restoration measures along the entire Texas Gulf of Mexico and Bay shorelines. Conducted H&H analysis for the feasibility design. Conducted an interior drainage analysis using HEC-HMS and HEC-RAS models. The modeling results were used to size the pumping facilities that would be required to provide adequate drainage behind the proposed structures and assess the width of the gate structure at Clear Creek. Performed a statistical analysis of wave loads on the Clear Creek structures to develop design wave conditions for structural design. The structural design considers the HSDRRS 500-year resiliency. Cost: N/A Fee: \$1.0M Role: Hydrologic/Hydraulic Engineer		<input checked="" type="checkbox"/> Check if project performed with current firm	
a			
(1) TITLE AND LOCATION (City and State) Dickinson Bayou Pump Station, Gate, and Floodwall Hydrologic Modeling and Design Development – Galveston County, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 N/A	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: USACE feasibility study for the USACE Galveston District that is assessing the potential benefits and costs in storm damage risk reduction measures as well as ecosystem restoration measures along the entire Texas Gulf of Mexico and Bay shorelines. Conducted an interior drainage analysis using HEC-HMS and HEC-RAS models. The modeling results were used to size the pumping facilities that would be required to provide adequate drainage behind the proposed structures and assess the width of the gate structure at Dickinson Bayou. Performed a statistical analysis of wave loads on the Dickinson Bayou structures to develop design wave conditions for structural design. The structural design considers the HSDRRS 500-year resiliency. Cost: N/A Fee: \$936K Role: Hydrologic/Hydraulic Engineer		<input checked="" type="checkbox"/> Check if project performed with current firm	
b			
(1) TITLE AND LOCATION (City and State) Galveston Island Pump Station Hydrologic Modeling and Design Development – Galveston, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 N/A	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: USACE feasibility study for the Galveston District that is assessing the potential benefits and costs in storm damage risk reduction measures as well as ecosystem restoration measures along the entire Texas Gulf of Mexico and Bay shorelines. Conducted a hydrologic and hydraulic (H&H) evaluation to determine the pumping facilities required to mitigate the impacts of proposed wall and levee features on the fluvial and overland flows. Developed appropriate design conditions that consider both rainfall and storm surge. Developed coupled hydrologic and hydraulic models (PCSWMM) of the three drainage areas of interest using the selected design condition. The design condition simulated in the model considers the impacts of inland rainfall, surge, and overtopping volume of the proposed system along with high tailwater conditions for pump outfalls. Performed a statistical analysis of wave and hydrodynamic loads on the structures to develop design wave conditions for structural design of floodwalls. Cost: N/A Fee: \$1.15M Role: Hydrologic/Hydraulic Engineer		<input checked="" type="checkbox"/> Check if project performed with current firm	
c			
(1) TITLE AND LOCATION (City and State) Dallas Floodway Extension Phase II Recreation and Access Design – Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2019 2022	
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Hydraulics and Hydrology analysis to support the design of the bridge crossing the Trinity River. Analysis included representation of the proposed project features in the dynamic HEC-RAS model, and analysis of before and after project conditions. Impacts of the proposed project features were evaluated with respect to current USACE and FEMA flood maps criteria. Cost: N/A Fee: \$15K Role: Hydrologic/Hydraulic Engineer		<input checked="" type="checkbox"/> Check if project performed with current firm	
d			

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Janice McLean, RPA	Archeologist	28	15

 15. FIRM NAME AND LOCATION (*City And State*)

R. Christopher Goodwin & Associates, Inc. – Lawrence, KS

16. EDUCATION (<i>Degree and Specialization</i>)	17. CURRENT PROFESSIONAL REGISTRATION (<i>State and Discipline</i>)
MA, Anthropology, University of Kansas 2010	Register of Professional Archaeologists (2018): Nationwide (4576)

 18. OTHER PROFESSIONAL QUALIFICATIONS (*Publications, Organizations, Training, Awards, Etc.*)

Ms. McLean directs Central Region operations from the Lawrence, Kansas office of R. Christopher Goodwin & Associates, Inc. (RCG&A). In her capacity as a Principal Investigator and Senior Project Manager at RCG&A, Ms. McLean oversees all phases of project development, administration, execution, and quality control for a wide range of cultural resources projects.

She has ten consecutive years providing full-service cultural resources support for the Fort Sill, Oklahoma military installation, supervision of over 4,500 acres of cultural resources surveys for wind energy projects in Oklahoma, and coordination of clients, state, and federal for terrestrial archeology projects across Texas.

19. RELEVANT PROJECTS

(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (<i>if applicable</i>)
USACE Tulsa District Cultural Resources Support FY 2018, Fort Sill, OK	2020	N/A
a (3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Ms. McLean was the Principal Investigator for this RCG&A contract, and Project Manager for all archaeological tasks including oversight of QC. The project involved Section 106 Consultation support, NHPA support, evaluations of historic structures, and GIS support. Cost: N/A Fee: \$442K Role: Principal Investigator and Archeologist	<input checked="" type="checkbox"/> Check if project performed with current firm	
USACE Tulsa District Cultural Resources Support, US Army Garrison Fort Sill, OK	2020	N/A
b (3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Evaluated NRHP eligibility of nine complex historic cultural properties; archeological inventories of 373.5 acres of range land; and geoarchaeological investigations to delineate areas of high sensitivity for buried cultural properties along East Cache Creek. Tasks included preparation of action plans for historic properties, NRHP evaluations of 12 historic structures, and Section 106 NHPA and GIS support services. Cost: N/A Fee: \$1.4M Role: Principal Investigator for Archeological Investigations	<input checked="" type="checkbox"/> Check if project performed with current firm	
USACE Tulsa District Cultural Resources Support FY 2020, Fort Sill, OK	2020	N/A
c (3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Ms. McLean was the Principal Investigator for all RCG&A task orders under this contract, as well as the Project Manager for archaeological tasks. These included documentation of historic buildings and structures at Fort Sill, mitigation documentation for pre-World War II architecture and engineering structures in the Fort Sill Historic District, review of HABS reporting, drafting an ICRMP update, NHPA correspondence, Section 106 consultation, and technical assessment and public interpretation of the historic drainage feature known as "Flipper's Ditch". Cost: N/A Fee: \$225K Role: Principal Investigator and Archeologist	<input checked="" type="checkbox"/> Check if project performed with current firm	
USACE Tulsa District Cultural Resources Support for Environmental Quality Division, US Army Garrison Fort Sill, OK	2020	N/A
d (3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Principal Investigator overseeing operations, client management, Fort Sill EQD contact, and in charge of the work plan for the project. The project involved several subtasks, including Section 106 Consultation, GIS Support for cultural resources work, digitization of archival documents, architectural survey, documentation, and evaluation of two potentially historic structures, data recovery of a previously recorded site, and, related to the latter, publication of those results within professional circles and curation of recovered artifacts. Cost: N/A Fee: \$1.4M Role: Principal Investigator and Archeologist	<input checked="" type="checkbox"/> Check if project performed with current firm	

**E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)**

12. NAME Dustin D. Davison, RPLS	13. ROLE IN THIS CONTRACT Land Surveyor	14. YEARS EXPERIENCE a. TOTAL 30	b. WITH CURRENT FIRM 5
15. FIRM NAME AND LOCATION (City And State) ARS Engineers, Inc. – Dallas, TX		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Registered Professional Land Surveyor (2013), Year First Registered: TX (6451)	
16. EDUCATION (DEGREE AND SPECIALIZATION) BS, Management, University of Phoenix, 2010 AAS, CAD/Drafting, Eastfield College, 1985		18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Mr. Davison has 30 years of experience in the field of project management for land surveying for state agencies, municipalities, and private development clients. He has performed precision, control, boundary, topographic, route, as-built, bathymetric, and rail surveys; prepared elevation certificates; determined horizontal and vertical controls for cross sections, construction staking. He manages a variety of projects while overseeing field crew operations and drafting technicians. Dustin is a US Marine Corp Veteran and Oklahoma National Guard Veteran. He earned a Certificate of Commendation from the Commanding General of 1st Force Service Support Group in 1997. In 1999, he received a Certificate of Achievement from the Army while serving with 1st Battalion 158th Field Artillery (MLRS).	
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) Timber Creek Recreational and Site Development Design, Austin, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES 2019 CONSTRUCTION (if applicable) 2022	
a	(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: ARS provided an aerial survey with supplemental topographical surveying services to support multiple facilities of the Timber Creek Recreation Facility project. This included existing roadways, defining the Pearce Lane edge of asphalt, and existing drainage, locating the drainage swale from Pearce Lane to north of Timber Creek Drive, identifying and locating all trees along the proposed trails, topo features of all shelter areas, parking areas, restrooms, and septic field areas, as well as identifying rights-of-ways for Pearce Lane and 973 in project limits. All data was provided to the design engineer in A/E/C standards. Cost: N/A Fee: \$72K Role: Land Surveyor		
(1) TITLE AND LOCATION (City and State) Dallas Floodway Extension – Phase II Recreation and Access, Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES 2018 CONSTRUCTION (if applicable) 2022	
b	(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: ARS provided topographic and planimetric surveys for the Dallas Floodway Extension – Phase II Recreation and Access project. This included Moore Park Connector Access Route, Cedar Creek Pedestrian Bridge Crossing, Birdwatching Platform No. 1, MLK Gate and Pipe Rail Fence, Gateway Park Access Route, Birdwatching Platform No. 2, Sargent Road Gate and Pipe Rail Fence, Joppa Connector Access Route, Trinity River Pedestrian Bridge Crossing, Honey Springs Access Route, Elam Creek Pedestrian Bridge Crossing and Riverwood Access Gate. All collected topographic information was developed into TINS and detailed contours of the site were provided to the design engineering team. Cost: N/A Size: \$54K Role: Surveyor		
(1) TITLE AND LOCATION (City and State) West Fort Hood Drainage Study – Fort Hood, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES 2016 CONSTRUCTION (if applicable) N/A	
c	(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Provided land surveying and data collection of all appurtenant watercourses within the main cantonment area of Fort Hood. Tasks were determining the horizontal and vertical locations of all drainage structures, crossings, and approximately 600 creek cross-sections that covered an area of 20K acres. Most sections were covered by dense vegetation and special considerations and permissions were required to gain access to training ranges and air fields. Cost: N/A Fee: \$42K Role: Surveyor		
(1) TITLE AND LOCATION (City and State) Red River Army Depot – Texarkana, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES 2018 CONSTRUCTION (if applicable) N/A	
d	(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: ARS provided surveying services to USACE, Fort Worth District as prime consultant for the Red River Army Depot (RRAD) in Texarkana, TX, within the design limits as defined by FY19 DLA GPW. ARS's services included: Topographic Survey, Planimetric Survey, and Utility Survey (water, sanitary sewer, storm, electrical/communications, gas), Field Notes, Horizontal and Vertical Control, and Meeting CADD Standards Cost: N/A Fee: \$48K Role: Surveyor		

**E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)**

12. NAME Don Daigle, CVS, CPE	13. ROLE IN THIS CONTRACT Cost Estimator	14. YEARS EXPERIENCE a. TOTAL 37 b. WITH CURRENT FIRM 5	
15. FIRM NAME AND LOCATION (<i>City And State</i>) MHZ JV – Houston, TX			
16. EDUCATION (<i>Degree and Specialization</i>) AAS, Mechanical Engineering, 1984 AAS, Electro-Mechanical Engineering, 1982		17. CURRENT PROFESSIONAL REGISTRATION (<i>State and Discipline</i>) Certified Value Specialist (CVS): #201203044 Certified Professional Estimator (CPE) #1.4-0009821-1214	
18. OTHER PROFESSIONAL QUALIFICATIONS (<i>Publications, Organizations, Training, Awards, Etc.</i>) Mr. Daigle has a wide-range of experience in value engineering, cost estimating and cost management, life cycle cost analysis, scheduling, quality control techniques, and design construction cost reconciliation. He is a Certified Value Specialist and proficient in estimating using MCACES and PACES software. Mr. Daigle has provided MII cost estimating for multiple USACE districts including all task orders completed on the current Civil Works contract. He also has experience providing detailed cost estimating for the Air Force on several projects.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (<i>City and State</i>) Design-Build RFP Development: 277K Levee Raise and Delta Pump Station – Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2021 2023	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Development of two design-build RFP packages for flood risk reduction measures along the Dallas Floodway, consisting of the 277K levee raise and Delta Pump Station replacement. Other services consisted of cost estimating, value engineering, design, drafting and planning for demolition of existing facilities, and Civil/Structural/Mechanical/Electrical/Architectural engineering analyses and design. Mr. Daigle led the development of two stand-alone cost estimates (design-build packages bid separately). He developed detailed MCACES cost estimates to a 35% level for both the levee raise and pump station replacement projects. Cost: \$320M Fee: \$1.2M Role: Cost Estimator		<input checked="" type="checkbox"/> Check if project performed with current firm	
a			
(1) TITLE AND LOCATION (<i>City and State</i>) Dallas Floodway Extension Phase II Recreation and Access Design – Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2020 2022	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Development of a design-build package (plans and specs) for a recreational project along the Dallas Floodway Extension. Services rendered included hydrology and hydraulic modeling, civil and structural design analyses, landscape architecture, cost estimating and BCOES review for extensive concrete trails, several bridges including a large bridge over the Trinity River and several other recreational features. Mr. Daigle developed the conceptual estimate using PACES, and provided the remaining estimates utilizing MCACES. Cost: \$4.7M Fee: \$422K Role: Cost Estimator		<input checked="" type="checkbox"/> Check if project performed with current firm	
b			
(1) TITLE AND LOCATION (<i>City and State</i>) Cow Bayou Drainage Pump Station Complex Design – Orange, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2020 2022	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Development of a 35% design package (plans, specs, and DDR) for a new 8,000 cfs drainage pump station complex consisting of multiple flood risk management reduction measures such as a pump station, safe house, floodwalls, and sector gate. Main responsibilities consisted of civil, structural, and architectural analyses. The task order was to provide a 35% level of design with anticipation of changing the project to a Design-Build RFP. Mr. Daigle performed MCACES cost estimating for the project. He worked extensively within the workbooks and through contractor contacts, to gain an understanding of regional pricing for major design features of the project and relayed quotes and information to USACE. Cost: \$ 325M Fee: \$1.3M Role: Cost Estimator		<input checked="" type="checkbox"/> Check if project performed with current firm	
c			
(1) TITLE AND LOCATION (<i>City and State</i>) Texas City & Vicinity Hurricane Flood Protection Project, I-Wall to T-Wall Conversion – Texas City, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2021 2022	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Development of a design-build package (plans and specs) for approximately a mile of failed Federal floodwall conversion from an I-Wall to a T-wall on an active chemical refinery. Services rendered consist of Architectural, Civil and Geotechnical Engineering, Cost Estimating, BCOES review and will consist of Construction Management and Engineering During Construction. Mr. Daigle provided detailed cost estimating for the project inclusive of input to the value engineering team, as well as detailed MCACES cost estimating with detailed line-item backup cost data. Cost: \$15M Fee: \$1.2M Role: Cost Estimator		<input checked="" type="checkbox"/> Check if project performed with current firm	
d			

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Zachary Steinkuhler, PE, CFM	13. ROLE IN THIS CONTRACT GIS Specialist	14. YEARS EXPERIENCE a. TOTAL 10 b. WITH CURRENT FIRM 10	
15. FIRM NAME AND LOCATION (City And State) MHZ JV – Dallas, TX			
16. EDUCATION (DEGREE AND SPECIALIZATION) B.Arch., University of Kansas, 2011	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Engineer (2015): TX (122305), LA (41573), CO (51935) Certified Flood Manager: 3264-17N		
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Zach Steinkuhler has ten years of experience with Huitt-Zollars. He provides design assistance and GIS for various projects ranging from private developments to major thoroughfare reconstruction. His main focus has been in the hydrologic and hydraulic analysis of projects, providing everything from storm sewer and channel design data to pond and detention facility analysis reporting.			

19. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State)		(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION (if applicable)
a	US 77 Design-Build – Kingsville, TX	2016	ONGOING
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input type="checkbox"/> Check if project performed with current firm	
b	Scope: Our team served as Lead Designer for Austin Bridge and Road for this \$74 million design/build project for the construction and modernization of US 77 freeway in Kingsville, Texas. The project involves 7.7 miles of four-lane freeway and frontage roads. Improvements include modernizing interchanges and adjacent intersections, improving discontinuous frontage roads to provide continuity within the corridor, and replacing bridges. Cost: \$74M Fee: \$4.5M Role: GIS Specialist		
(1) TITLE AND LOCATION (City and State)		(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION (if applicable)
b	Lake Ralph Hall Road Relocation – Fannin County, TX	2021	ONGOING
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input type="checkbox"/> Check if project performed with current firm	
c	Scope: Our team delivered key design engineering services as part of a Progressive Design-Build and road relocation with UTRWD and TxDOT to mitigate impacts to state and county roads resulting from the lake construction and the new Leon Hulse Dam. The Project includes the realignment of SH 34 segments so two new bridges along SH 34 can be constructed. The main bridge over the future Lake Ralph Hall will be approximately 6600 feet long and include a pedestrian-bicycle path. The project also includes the realignment of FM 1550 along CR 3444 and CR 3443. Portions of FM 2990 will be demolished within the lake footprint. Cost: \$89M Fee: \$3.5M Role: GIS Specialist		
(1) TITLE AND LOCATION (City and State)		(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION (if applicable)
d	Development of Laredo 7 RFPs – Laredo, TX	2021	ONGOING
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input type="checkbox"/> Check if project performed with current firm	
e	Scope: The purpose of this project was to design plans for the Laredo 7 segments of the border fence along the U.S.-Mexico border. The fence segments were designed to be either 18-ft. or 30-ft.-tall depending on project alignment location, and to meet the Tactical Infrastructure Design Standard for Primary Pedestrian Fence. The design also included plans for automated vehicle gates. The automated vehicle gates' design planned for metal structures with a minimum height of 18 feet and minimum width of 20 feet. Cost: \$ 998M Fee: \$5.4M Role: GIS Specialist		
(1) TITLE AND LOCATION (City and State)		(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION (if applicable)
d	Fort Bliss Hospital Infrastructure Design – El Paso, TX	2017	2020
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input type="checkbox"/> Check if project performed with current firm	
e	Scope: Scope included all civil engineering and site design for this 1.13 million SF world-class medical center. Coordinated infrastructure requirements and design for the hospital buildings, central utility plant and other support facilities. Access control points and surface parking lots for 4,000 spaces were designed. New 1.5MG water storage and 4 miles of offsite sewer with lift stations support the site. Cost: \$ 85M Fee: \$3.9M Role: GIS Specialist		
(1) TITLE AND LOCATION (City and State)		(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION (if applicable)
c	Greater Houston Flood Mitigation Consortium, Houston, TX	2020	N/A
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input type="checkbox"/> Check if project performed with current firm	
c	Scope: Created illustrated deliverables, writing media pieces, and acting as spokesperson. Also created fact sheets to explain flooding-related issues, commissioned research, organized a workshop with national experts, compiled and released conclusions on flooding, and consulted with the county judge, county commissioners, the city's resiliency office, and public agencies. Cost: N/A Fee: \$1.2M Role: GIS Specialist		

**E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)**

12. NAME Christof Spieler, PE, LEED AP BD+C, AICP	13. ROLE IN THIS CONTRACT Public Information Specialist	14. YEARS EXPERIENCE a. TOTAL 21 b. WITH CURRENT FIRM 13	
15. FIRM NAME AND LOCATION (<i>City And State</i>) MHZ JV – Houston, TX			
16. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) MS, Civil Engineering, Rice University, 1999 BS, Civil Engineering, Rice University, 1997	17. CURRENT PROFESSIONAL REGISTRATION (<i>STATE AND DISCIPLINE</i>) Professional Engineer (2003): Texas (92012) LEED Accredited Professional Building Design and Construction American Institute of Certified Planners		
18. OTHER PROFESSIONAL QUALIFICATIONS (<i>Publications, Organizations, Training, Awards, Etc.</i>) Christof has spoken extensively, including at the national Rail-Volution, NACTO, New Partners for Smart Growth, American Public Transportation Association (APTA), and Greenbuild conferences, at statewide conferences of the American Planning Association and Texas Society of Architects, and at invited events in Toronto, Boston, New Orleans, and Hartford.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (<i>City and State</i>) North Houston Livable Centers Study, Houston, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2020 N/A	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE a Scope: The team identified the core challenges facing the district and defined four major strategies: "Be the local, regional, and international hub of Houston," "Be a model for safe places to walk and bike, Be defined by a central park that holds floodwater," and "Be a place that offers accessible, affordable housing for the region." These are supported by 10 recommendations. Projects have been coordinated with stakeholders, including METRO, the COH, HCFCD, and others. Cost: N/A Fee: \$218K Role: Public Information Specialist			
(1) TITLE AND LOCATION (<i>City and State</i>) IH45 Public Engagement, Houston, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) ONGOING N/A	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE b Scope: Our team facilitated public workshops in English and Spanish and created diagrams to better explain the project and asked residents about their concerns about the project and what opportunities they saw to improve the project in their neighborhoods. Based on what we heard from the public, our designers, planners, and engineers worked together to develop nearly 40 proposals to address those concerns. These proposals were presented to the public in three workshops. Cost: N/A Fee: \$869K Role: Public Information Specialist			
(1) TITLE AND LOCATION (<i>City and State</i>) Greater Houston Flood Mitigation Consortium, Houston, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2020 N/A	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE c Scope: Created illustrated deliverables, writing media pieces, and acting as spokesperson. Also created fact sheets to explain flooding-related issues, commissioned research, organized a workshop with national experts, compiled and released conclusions on flooding, and consulted with the county judge, county commissioners, the city's resiliency office, and public agencies. Cost: N/A Fee: \$1.2M Role: Public Information Specialist			
(1) TITLE AND LOCATION (<i>City and State</i>) Houston Bike Plan, Houston, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2011 N/A	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE d Scope: Houston's first citywide bike plan in over 20 years. Developed a toolbox of bikeways, end of ride facilities, policies, programs, and created activities for public meetings. Lead the development of the "toolbox" of the plan, designed to be an easy-to-use resource for planners, designers and the public. The plan includes detailed diagrams of all the bike facility types and process flowcharts to determine the appropriate facility for each condition. Cost: N/A Fee: \$89K Role: Public Information Specialist			
(1) TITLE AND LOCATION (<i>City and State</i>) Beyond the Bayous, Houston, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2018 N/A	
(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE e Scope: The Houston Parks Board, is implementing Bayou Greenways 2020, a project to build linear parks and trails along 150 miles of bayous across Houston. The Beyond the Bayous plan maps out what comes next. The final plan identified regional greenway connections stretching across the city, new regional parks with integrated flood control infrastructure, and a series of priority neighborhoods networks that combine greenways, parks, transit links, and housing. Cost: N/A Fee: \$470K Role: Public Information Specialist			

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME James Carney	13. ROLE IN THIS CONTRACT Economist	14. YEARS EXPERIENCE a. TOTAL 13 b. WITH CURRENT FIRM 13	
15. FIRM NAME AND LOCATION (City And State) Tetra Tech, Inc. – Seattle, WA		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) N/A	
16. EDUCATION (DEGREE AND SPECIALIZATION) MBA, Cal State Stanislaus, 2021 MS, Development for GIS & Cartography, University of Wisconsin, 2019 BA, Environmental Economics, University of Washington, 2008			
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Mr. Carney specializes in the development and execution of economic modeling and related analyses for USACE studies, including coastal and riverine feasibility-level flood risk evaluations, deep draft navigation, complex cost-effectiveness and incremental cost analyses, recreation evaluations, and evaluation of regional economic impacts. He has strong experience supporting risk analyses for USACE and developing quantitative evaluations of benefits across all four accounts (NED, RED, OSE, EQ). He is an experienced modeler using key plan formulation and evaluation tools such as HEC-FDA, IWR GeoFIT, HEC-FIA, IWR-PLAN, HAZUS, MGM2/REAS, IMPLAN, RECONS, USACE Lifesim and @RISK.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) USACE Alaska District Coastal Erosion Storm Risk Management Study – Barrow, AK	(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2019 N/A		
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Performed economic field data collection to characterize structures at risk of damage or loss from coastal flooding and erosion. Reviewed prior study's economic modeling and risk analysis framework in USACE-certified Beach-Fx model to develop an approach to updating the analysis for the current feasibility study. Developed a custom cost-effectiveness and incremental cost analysis framework using IWR Planning Suite to evaluate and compare alternatives plans within a community resilience context, incorporating effects across all four accounts (NED, RED, OSE, EQ). Cost: N/A Fee: \$334K Role: Economist	<input checked="" type="checkbox"/> Check if project performed with current firm		
a			
(1) TITLE AND LOCATION (City and State) USACE Los Angeles District Lower Santa Cruz River Flood Risk Management Study – Pima County, AZ	(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2017 N/A		
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Performed an economic analysis of flood risk for the study area using HEC FDA. Developed necessary economic modeling inputs to assess damages to study area assets for standard damage categories. Also developed project specific stage-damage functions for non-standard damage categories. Created a methodology to pre-process hydraulic model depth grids prior to importing into HEC-FDA, as necessitated by the high-resolution 2-D hydraulic modeling (small cells/large file size), such that cells not containing damageable inventories were filtered out, which minimized the FDA model size and avoided the complexity of multiple FDA models. The methodology was computationally consistent with the GeoFIT tool's data standardization approach which the District had tried to use without success due to the file size of the hydraulic model depth grids. Set up and ran the HEC-FDA model for without project flood damages and documented the analysis in a technical memo. Cost: N/A Fee: \$386K Role: Economist	<input checked="" type="checkbox"/> Check if project performed with current firm		
b			
(1) TITLE AND LOCATION (City and State) USACE Omaha District and USBR Lower Yellowstone Intake Diversion Dam EIS – Yellowstone, MT	(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2017 N/A		
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Estimated the agricultural production value for irrigated lands within the project area, which was accomplished by assimilating data from multiple local, state, and national sources to generate a representative crop mix for the study area. Estimated the impacts that proposed changes in assessment rates would have on net farm income specific to operational effects on agriculture. Developed a methodology to provide necessary economic data for decision support in identifying a preferred alternative project plan. Characterized effects on socioeconomic, recreational, and agricultural resources using an economic input-output model to estimate regional economic employment and income effects. Performed a socioeconomic characterization of the affected environment and consequences evaluation for project alternatives. Cost: N/A Fee: \$1.98M Role: Economist	<input checked="" type="checkbox"/> Check if project performed with current firm		
c			
(1) TITLE AND LOCATION (City and State) Feasibility Study for Laredo Chacon Creek – Laredo, TX	(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2018 N/A		
d			
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Performed the cost effectiveness and incremental cost analysis to evaluate and compare alternative ecosystem restoration plans using the approved methodology and USACE IWR Planning Suite. Cost: N/A Fee: \$336K Role: Economist	<input checked="" type="checkbox"/> Check if project performed with current firm		

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Eric Webb, PhD	13. ROLE IN THIS CONTRACT Biologist	14. YEARS EXPERIENCE a. TOTAL 26	b. WITH CURRENT FIRM 5
15. FIRM NAME AND LOCATION (City And State) Vernadero Group Inc., New Orleans, LA		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) N/A	
16. EDUCATION (DEGREE AND SPECIALIZATION) PhD, Oceanography and Coastal Sciences / Plant Biologist, Louisiana State University, 1997 MS, Biology, Morehead State University, 1991 BS, Biology, Ohio Dominican University, 1988		18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) Dr. Webb has extensive experience performing environmental studies; developing NEPA-compliant documents; conducting ecological analyses; and habitat assessments and mitigation plans for USACE Civil Works and Military projects nationwide.	
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) USACE Mobile District Special Status Species Surveys and Integrated Natural Resources Management Plan (INRMP) – Nine States and Puerto Rico		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2021 N/A	
a	(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Dr. Webb updated an INRMP and conducted special status species surveys at two U.S. Army Reserve properties each in Florida and Puerto Rico. Surveys involved on-site presence/absence surveys for special status species, including the wood stork (<i>Mycteria americana</i>), Puerto Rican boa (<i>Chilabothrus inornatus</i>), and yellow-shouldered blackbird (<i>Agelaius xanthomus</i>). Cost: N/A Fee: \$198K Role: Project Manager and Lead Biologist <input checked="" type="checkbox"/> Check if project performed with current firm		
b	(1) TITLE AND LOCATION (City and State) USACE Mobile District, Environmental Impact Analysis, Contract Adversary Air (ADAIR) Langley Air Force Base (AFB), VA; Kingsley Field Air National Guard Base, OR; Kelly Field, TX; Tyndall and Eglin AFBs, FL; Holloman AFB, NM; and Joint Base Pearl Harbor-Hickam, HI		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2019 N/A
c	(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Dr. Webb supported the Air Force's NEPA compliance requirements with the preparation of seven Environmental Assessments (EAs) and seven Biological Assessments (BAs) for seven separate AFBs for the proposed Combat Air Forces contract ADAIR training activities. Cost: N/A Fee: \$2.6M Role: Project Manager and Lead Biologist <input checked="" type="checkbox"/> Check if project performed with current firm		
d	(1) TITLE AND LOCATION (City and State) USACE Fort Worth District and Redhorse Invasive Plant Surveys, Fort Polk, LA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2017 N/A
e	(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Dr. Webb led the field effort to map all invasive plant species within the cantonment area at Fort Polk. Cost: N/A Fee: \$15K Role: Lead Field Biologist <input checked="" type="checkbox"/> Check if project performed with current firm		
	(1) TITLE AND LOCATION (City and State) USACE Fort Worth District San Marcos River Section 206 Aquatic Ecosystem Restoration Project, San Marcos, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2015 N/A
f	(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Dr. Webb prepared the feasibility study for the San Marcos River aquatic ecosystem restoration, which included plan formulation and the development of a Detailed Project Report, an EA, and a BA. Dr. Webb conducted habitat assessments for HEP, and coordinated with the USACE, the City of San Marcos, and resource agencies to develop measures to remove exotic species, reduce sediment loading, increase the cover of riparian woodlands, create wetlands, control recreational access, and restore a more natural hydrology to the river by removing existing dams. Cost: N/A Fee: \$244K Role: Project Manager and Lead Biologist <input checked="" type="checkbox"/> Check if project performed with current firm		
	(1) TITLE AND LOCATION (City and State) USACE New Orleans District Comprehensive Environmental Document (CED), Greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS) Projects, LA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if applicable) 2014 N/A
g	(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Dr. Webb prepared the three-volume CED for NEPA compliance under the NEPA Alternatives Arrangement for the HSDRRS. The CED analyzed the relationship of the proposed actions covered in all project IERs with each other and all other reasonably foreseeable projects. The CED discussed the HSDRRS as a systematic planning effort, identified new information associated with long-term operations and maintenance of the HSDRRS, analyzed indirect impacts due to altered hydrology or induced development, described the cumulative impacts, and included a final mitigation plan. Cost: N/A Fee: \$749K Role: Project Manager and Lead Biologist <input checked="" type="checkbox"/> Check if project performed with current firm		

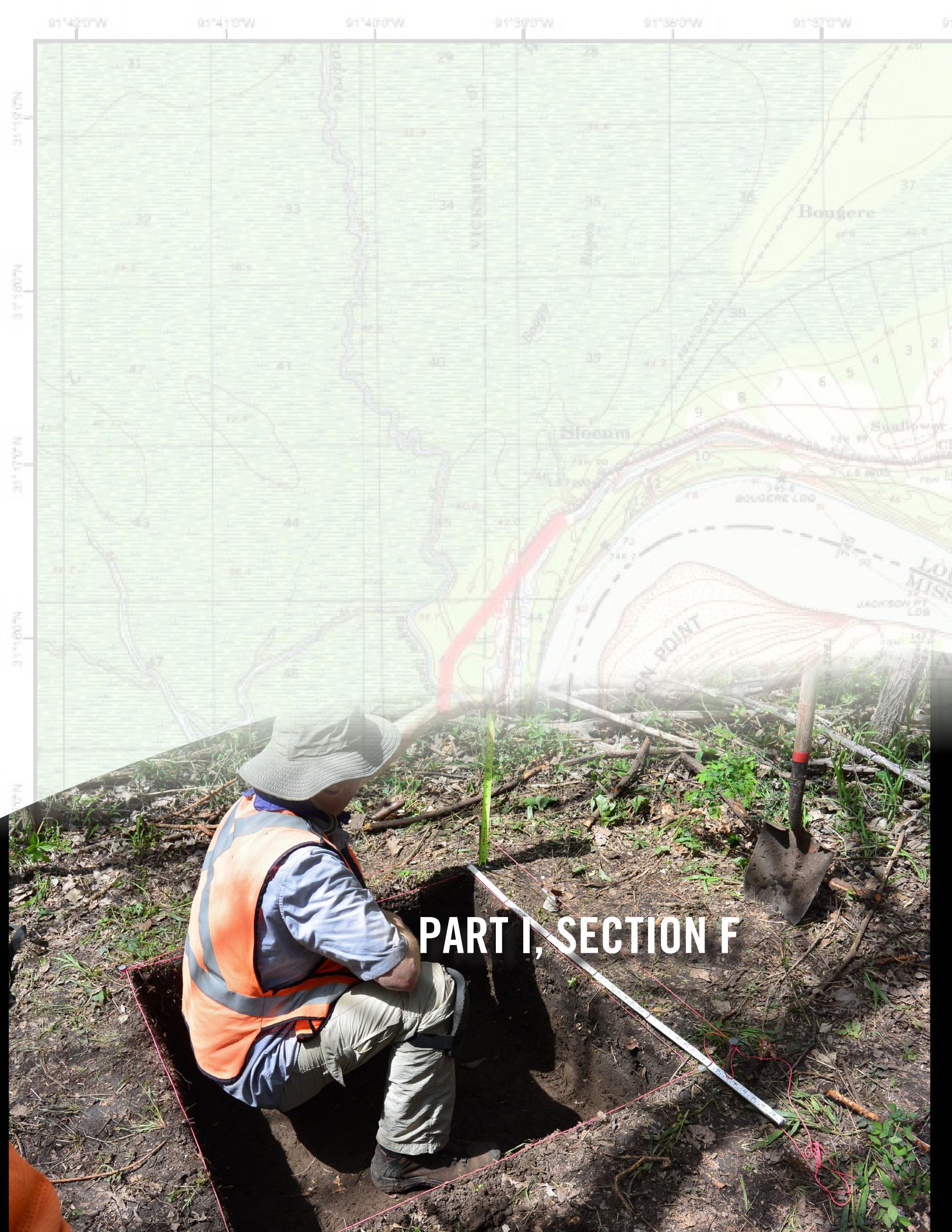
E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Glen Wallace, PhD, LGH, RG	13. ROLE IN THIS CONTRACT Hydrogeologist	14. YEARS EXPERIENCE a. TOTAL 16 b. WITH CURRENT FIRM 16	
15. FIRM NAME AND LOCATION (<i>City And State</i>) Mott MacDonald, LLC – Seattle, WA			
16. EDUCATION (<i>Degree and Specialization</i>) PhD, Geological Sciences, University of Washington, 2004 MS, Earth Science, University of California Santa Cruz, 1999 BS, Earth Science, University of California Santa Cruz, 199	17. CURRENT PROFESSIONAL REGISTRATION (<i>State and Discipline</i>) Licensed Hydrogeologist (2007): WA (2664) Registered Geologist (2015): OR (G2478)		
18. OTHER PROFESSIONAL QUALIFICATIONS (<i>Publications, Organizations, Training, Awards, Etc.</i>) Dr. Wallace brings more than 16 years of experience to his projects incorporating a strong practical and theoretical background in geology, environmental investigation, remediation, quantitative analysis, regulatory strategy, and allocation & litigation support.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (<i>City and State</i>) Yakima County Public Services, Landfill Monitoring and Regulatory Support – Yakima County, WA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) ONGOING N/A	
a	(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Prepared hydrogeologic report, oversaw boring and investigation program, coordinated with engineering team, and appeared at Hearing Examination in support of a successful expansion of the Cheyne Landfill. Manages groundwater and landfill gas monitoring at three landfills. Addresses regulatory issues as they arrive and has developed a positive relationship with Ecology and the local Health District. Cost: N/A, Fee: \$336K Role: Hydrogeologist <input checked="" type="checkbox"/> Check if project performed with current firm		
b	(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Implementation of the Port of Seattle Embankment Fill Monitoring Program which is a key component of permit compliance for construction of the third runway at Seattle-Tacoma International Airport and has received significant public and regulatory agency scrutiny. Provided consistent attention to quality control for sensitive analyses such as parts-per-trillion level mercury and methylmercury. Conducted groundwater assessment for metals exceedances, which demonstrated that the exceedances were to be unrelated to land use changes and instead to redox-mediated sorption of metals to aquifer organic carbon. Cost: N/A Fee: \$279K Role: Hydrogeologist <input checked="" type="checkbox"/> Check if project performed with current firm		
c	(1) TITLE AND LOCATION (<i>City and State</i>) Franklin Conservation District, Irrigation Return Flow Timing Analysis to Support Water Rights – Pasco, WA		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2015 N/A
d	(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Evaluated the potential for irrigation conservation to increase water availability for issuing new irrigation water rights in three study areas within the Columbia Basin. Mr. Wallace provided hydrologic analysis of vadose zone and groundwater flow using Hydrus, MODFLOW, and STRMDEPL08. The analysis showed that the “retiming” of the non-consumptive portion would result in greater water availability during the critical irrigation season months, thus providing a basis for pursuit of new water right applications. Cost: N/A Fee: \$255K Role: Hydrogeologist <input checked="" type="checkbox"/> Check if project performed with current firm		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) ONGOING N/A
e	(1) TITLE AND LOCATION (<i>City and State</i>) Groundwater and Geologic Evaluation, Confidential client		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) ONGOING N/A
f	(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Developed three dimensional geologic model of bedrock, key stratigraphic features, and existing site infrastructure as foundation for hydrogeologic, geochemical and modeling analysis. The model incorporated data from over 200 borings and field stations, as-built features including slurry walls and tailings piles, and geochemical indicators of mine-impacted groundwater in a hydraulically dynamic alpine environment. The modeled layers were incorporated into a MODFLOW numerical groundwater model that is used to evaluate remedial alternatives. Assisted in monitoring program design, regulatory communication with multiple agencies and tribes, and hydrogeologic conceptual model evaluation. Designed, implemented, operates a network of over 40 transducers to monitor dynamic groundwater fluctuations. Cost: N/A Fee: \$419K Role: Hydrogeologist <input checked="" type="checkbox"/> Check if project performed with current firm		
g	(1) TITLE AND LOCATION (<i>City and State</i>) Oregon Parks and Recreation Department, Sitka Sedge Natural Area Hydrogeologic Evaluation		(2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (<i>if applicable</i>) 2019 N/A
h	(3) DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Conducted a focused hydrogeologic evaluation of the effects of estuary restoration including dike removal on nearby shallow groundwater. Designed and installed piezometers and surface water monitoring points to study ambient effects of precipitation and tides on groundwater and surface water. Cost: N/A Fee: \$125K Role: Hydrogeologist <input checked="" type="checkbox"/> Check if project performed with current firm		

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
 (COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME Ramesh Kalvakaalva, PE, CVS	13. ROLE IN THIS CONTRACT Certified Value Specialist	14. YEARS EXPERIENCE a. TOTAL 31		b. WITH CURRENT FIRM 11
15. FIRM NAME AND LOCATION (City And State) Neelu, Inc. – Smyrna, GA		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Engineer/Civil (1997): LA (28219), MS (14876) FL (67030), AL 27347), GA (26993), TN (106893), NC (031348), SC (24777), AZ (43451, MI (2843452) SAVE® Certified CVS (Worldwide) (2010) CVS License (201110500)		
16. EDUCATION (DEGREE AND SPECIALIZATION) PhD Candidate, Civil Engineering, Louisiana State University (1999) MS, Civil Engineering; Louisiana State University (1995) BS, Civil Engineering; NIT, Trichy, India (1991)		18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, Etc.) SAVE® Certified VMF1 (License # 10019) & VMF2 (License #20012) Workshop Trainer; Papers and Presentations at various AASHTO Peer Exchange Workshops, SAVE-International® Summits, and Canadian Society of Value Analysis 20th National Conference, Montreal, QC; • Value Engineering Lectures to Undergraduate and Graduate Students of Georgia Tech, and Westwood College, Atlanta; • President – SAVE® Piedmont Chapter; Technical • Committee Member for SAVE International®'s VMBok®, Chapters 6 & 9.		
19. RELEVANT PROJECTS				
(1) TITLE AND LOCATION (City and State) Design-Build RFP Development: 277K Levee Raise and Delta Pump Station – Dallas, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES 2021		
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Raised the top of the levees to meet a 277k cfs water surface elevation and design new levee crest access roads; Levee Side Slope Flattening: The existing East and West levees have side slopes varying from approximately 2:8H:1V to 4H:1V. The side slopes shall be flattened to 4H:1V along the entire length of the river side of the levees; Delta Pump Station: New pumps (2), new electrical building, new transformer, concrete curb and gutter road to Hampton Road, truck access, new retaining walls, new security fencing and gates. The VE Study adhered to the USACE Value Standard and Value Engineering Job Plan as promulgated by SAVE International®. Cost: \$35M Fee: \$60K Role: Certified Value Specialist		<input checked="" type="checkbox"/> Check if project performed with current firm		
(1) TITLE AND LOCATION (City and State) Construct Dangerous Cargo Pad; Relocate CATM, Canon Airforce Base – Clovis, New Mexico		(2) YEAR COMPLETED PROFESSIONAL SERVICES 2018		
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: The existing North Calibration Pad, CATM and small arms range, the Rod & Gun Club, Skeet and Trap Range, and supporting facilities must be demolished and relocated to another site. The VE Study adhered to the USACE Value Standard and Value Engineering Job Plan as promulgated by SAVE International®. Cost: \$42M Fee: \$75K Role: Certified Value Specialist		<input checked="" type="checkbox"/> Check if project performed with current firm		
(1) TITLE AND LOCATION (City and State) Aerospace Ground Equipment (Age) Complex, Davis-Monthan AFB – Tucson, AZ		(2) YEAR COMPLETED PROFESSIONAL SERVICES 2019		
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: AGE complex consists of administrative and maintenance areas, covered open-storage facility, with reinforced concrete foundations and floor slabs, structural-steel frames, standing-seam metal roof systems; fire detection/protection, and demolition of 13 facilities and 2 associated canopies. The VE Study adhered to the USACE Value Standard and the six-step Value Engineering Job Plan as promulgated by SAVE International®. Cost: \$15.5M Fee: \$50K Role: Certified Value Specialist		<input checked="" type="checkbox"/> Check if project performed with current firm		
(1) TITLE AND LOCATION (City and State) Programmatic Value Engineering Study, Corpus Christi Ship Channel Jetty Repairs, Corpus Christi, TX		(2) YEAR COMPLETED PROFESSIONAL SERVICES 2018		
(3) DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Scope: Conducted a programmatic Value Engineering study for the USACE Galveston District to evaluate the USACE led design of proposed improvements to a 24,000 ft. long jetty at the entrance of a deep-draft navigation channel servicing multipurpose port facilities in Corpus Christi, Texas. The multi-day study evaluated a set of plans and specs that was roughly 35% complete. Mr. Kalvakaalva led the development of the VE workshop that resulted in nineteen design alternatives (some mutually inclusive) that offered the District an estimated ten million (\$10M) in first cost savings to be considered for implementation. The study adhered to the USACE Value Standard, and the six-step Value Engineering Job Plan as promulgated by SAVE International®. Cost: \$39M Fee: \$63K Role: Certified Value Specialist		<input checked="" type="checkbox"/> Check if project performed with current firm		

PART I, SECTION F



**F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S
QUALIFICATIONS FOR THIS CONTRACT**

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER

1

21. TITLE AND LOCATION (City and State)

Dallas Floodway Design Build RFPs: 277K Levee Raise and Delta Pump Station

Dallas, TX

22. YEAR COMPLETED

PROFESSIONAL SERVICES

2021

CONSTRUCTION (If applicable)

2023

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

USACE Fort Worth District

b. POINT OF CONTACT NAME

Sandra Allen, Design Manager

c. POINT OF CONTACT TELEPHONE NUMBER

817-886-1669

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Design Fee: \$1.2M, **Construction Cost:** \$41M

Our team developed two stand-alone Design-Build (DB) RFPs for USACE Fort Worth District as part of the Dallas Floodway System. The two DB RFP packages included 35% Plans, Technical Specs, and a DDR explaining the requirements of the Design-Build firm, a Summary of Work further explaining the project requirements, and a MII construction cost estimate. The \$35M Levee Raise project was advertised in March 2021 and the \$6M Pump Station project will advertise in first quarter FY22. Services provided included HTRW survey (environmental analyses) of the Delta Pump Station, and a value engineering study that produced two stand-alone Value Engineering Reports.

The 277K Levee Raise project scope consisted of civil design of the existing East and West Dallas floodway levees to raise them to meet a 277K CFS water surface elevation and new levee crest access roads. The levee raises occurred at 25 locations on over 41K feet of levee where the height is less than the required water surface elevation. Our team utilized the Trinity River HEC-RAS models to establish the water surface elevations at each levee station. The project also includes multiple bridge and levee interfaces that include structural bridge sealing plans along the East and West Levees. Additionally, the project included flattening of the levee side slopes to reduce erosion and provide ease of maintenance. The existing East and West levees have side slopes which were as steep as 2:8H:1V. The project will provide all side slopes flattened to 4H:1V along the entire length of the river side. Numerous sluice gate structures and other protective measures were designed to withstand the additional soil loads. The existing access and levee roads will be demolished as part of the raising/flattening of the levees and will be rebuilt in the same location at a higher elevation. Technical specifications were developed for temporary flood protection requirements, stormwater pollution prevention plan and biological and archaeological monitoring requirements. A conceptual level MII construction cost estimate was also provided, reviewed by USACE during the DQC/ATR reviews and updated for the final submission. The team responded to RFIs submitted during the bidding phase and provided all electronic and physical copies of the final edited submission to USACE.

The Delta Pump Station replacement project consists of a storm water pump station replacement of the high flow pumps and pump house, as well as reuse of the structural chamber. Two pumps and associated bearing lubrication equipment, valves, trash rack, and gates will be housed in the new building. A new electrical room has been incorporated into the building design to house the upgraded equipment, SCADA system and controls. The new Delta Pump House roof is designed to provide access panels for pump maintenance egress and ingress. The civil design accommodates a new debris collection area for small loaders and dump trucks. The trash rack on the high flow culvert will be replaced with a trash rack to dump on the new collection area. The low flow pump stairs will be removed and replaced. Site circulation was designed for access to the low flow stairs from the new collection area. Our team worked with the City of Dallas and Oncor to identify electrical equipment added on site to upgrade the electrical service. The site security fencing and gates will be replaced to secure the site as well as lighting and security cameras. All existing facilities and structures will be demolished. Communication and electrical conduits,

Project Relevancies:

- ✓ Located in TX
- ✓ Task Order Services Completed for Fort Worth District
- ✓ Design-Build RFP Development
- ✓ Fee over \$1M
- ✓ Completed within last 5 years

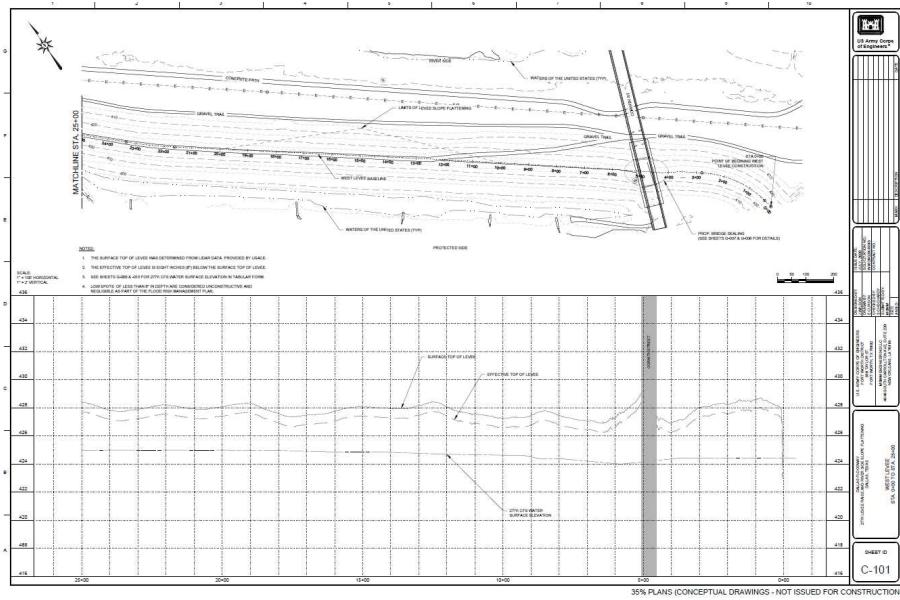
Exemplifies Experiences in:

- ✓ Hydrology
- ✓ Hydraulics
- ✓ Civil Engineering
- ✓ Environmental Analyses
- ✓ Cultural Resources
- ✓ GIS/Survey/Mapping
- ✓ Construction Cost Estimating
- ✓ Technical Reviews
- ✓ Planning & Project Management



transformers, and conductors will be installed or reconnected for service, and coordinated with the City of Dallas. The access road from the pump house to the Canada Drive intersection will be replaced with a 25 foot concrete curb and gutter road. The concrete road is designed to drain to the swale south of the new road through curb openings connected to flume/outfall structures and slope protection. Erosion protection measures have been added at the outfall of the pump station. This is comprised of concrete apron and rock rip-rap.

Our team provided an independent value engineering study via a Virtual Platform. The workshop resulted in development of Design Alternatives (some mutually inclusive) that were selected for incorporation into the design. There were also Design Suggestions that offered measures to simplify construction, provide various means for reducing costs (in these cases these savings are hard to quantify), improve the operational requirements for the facility, and reduce the construction duration. In total, 80 alternatives were developed for the two projects, identifying roughly \$11M in cost savings. Following review of the alternatives, \$200K in cost avoidance was realized, including changing the Delta Pump Statoin project from a rehabilitation project to a replacement.



TABULAR FUNCTION ANALYSIS 277K LEVEE PROJECT			
Project Element	Function Verb - Noun	Function Type	Project Risk
277K LEVEE			
Need	Improve Maintainability	Higher Order	Medium
Purpose	Improve Safety	Basic	Medium
Slope - 4:1	Reduce Liability	Required Secondary	Medium
277K Raise	Meet Capacity	Required Secondary	Low
Levee	Contain Water	Required Secondary	Medium
River	Transmit Water	Required Secondary	Low
River	Move Water	Required Secondary	Low
Levee Dikes	Confine Water	Required Secondary	Low
Levee Elevation	Prevent Overflow	Required Secondary	Low
Overall Project	Prevent Damage	Required Secondary	Low
Higher Level Goal	Support Local-Economy	Project Goal	Low
Grass Surface	Prevent Erosion	Required Secondary	Medium
Levee Durability	Prevent Blow-Out	Required Secondary	Medium
Overall Environmental Issues	Limit Impacts	Required Secondary	Low
Overall Project	Meet Expectations	Required Secondary	Low
Overall Project	Satisfy Stakeholders	Project Goal	Low

TABULAR FUNCTION ANALYSIS DELTA PUMP STATION			
Project Element	Function Verb - Noun	Function Type	Project Risk
DELTA PUMP STATION			Low
Need	Extend Life	Higher Order	Low
Purpose	Renew Asset	Higher Order	Low
New Pumps	Lift Water	Basic	Low
Pump Size	Increase Capacity	Required Secondary	Low
Adaptive Purpose	Adapt Building	Required Secondary	Low
Expand Building	Accommodate Growth	Required Secondary	Low
Retrofit	Modernize Facility	Required Secondary	Low
	Improve Access	Required Secondary	Low
	Optimize Functionality	Required Secondary	Low
Hydraulic Efficiency	Improving Efficiency	Required Secondary	Low
	Increase Power-Factor	Required Secondary	Low
	Control Temperature	Required Secondary	Low
Exhaust Fans	Ventilate Space	Required Secondary	Low
Higher Level Goal	Support Local-Economy	Project Goal	Low
Overall Project	Satisfy Stakeholders	Project Goal	Low
Overall Project	Meet Schedule	Project Goal	Low
Overall Project	Meet Budget	Project Goal	Low

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a	(1) FIRM NAME MSMM Engineering, LLC	(2) FIRM LOCATION (<i>City and State</i>) New Orleans, LA; Houston, TX	(3) ROLE Prime – 277K Levee Raise Design-Build Package Program and Project Management
b	(1) FIRM NAME Huitt-Zollars, Inc.	(2) FIRM LOCATION (<i>City and State</i>) Dallas TX; Fort Worth, TX	(3) ROLE Sub – Delta Pump Station Design-Build Package
c	(1) FIRM NAME Jesco Environmental and Geotechnical Services, Inc.	(2) FIRM LOCATION (<i>City and State</i>) Jennings, LA	(3) ROLE Sub – Regulated Materials Finding Report
d	(1) FIRM NAME Neelu, Inc.	(2) FIRM LOCATION (<i>City and State</i>) Smyrna, GA	(3) ROLE Sub – Value Engineering Study/Report

**F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S
QUALIFICATIONS FOR THIS CONTRACT**

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY
NUMBER

2

21. TITLE AND LOCATION (City and State)	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Texas City and Vicinity Hurricane Flood Protection Project, I-Wall to T-Wall Conversion Texas City, TX	2021	2022

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
USACE Galveston District	Kalli Egan-Clark, Technical Manager	469-367-6036

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Design Fee: \$1.8M, Construction Cost: \$15M

Our team was tasked by the USACE Galveston District to complete engineering design services for the replacement of a portion of an I-wall to a T-wall within a chemical refinery in Texas City, Texas. The design consists of replacing the I-wall with a T-wall, replacing a vehicular access gate, as well as access points through the wall. Based on our inspection, a portion of the I-wall being replaced has shown recent indications of failure including joint separation, spalled concrete at the joints, portions of the wall leaning, leaning infrastructure along the I-wall, cracking in the ground surface behind the I-wall, and recent history of settlement of the soils between the I-wall and a bulkhead that is located in front of the wall.

Following our teams extensive field investigation activities, we completed an engineering evaluation report detailing and assessing the existing infrastructure and documenting the known performance issues, while developing optimized project features. The forensics evaluation and geotechnical investigations were completed, which determined the root cause for the failure of the levee section. Our team then worked with USACE, the non-Federal sponsor and the chemical refinery leadership to develop an acceptable framework for the front-end specifications. Following the investigations, we developed detailed engineering and design, prepared a Design Documentation Report (DDR), and provided civil design plans and specifications, prepared Engineering Considerations and Instructions to Field Personnel (ECIFP), and performed an independent value engineering (VE) study and preparation of a VE report. Our design activities also included incorporating the various design data, investigations, detailed structural and geotechnical analysis and design for the T-wall and foundation components, preparing preliminary and detailed quantity estimates, preparing MII cost estimates, and providing the final construction bid documents.

Due to the proximity of the project site to the Galveston Bay bulkhead, the design included development of the interim flood protection measures the contractor must construct prior to dismantling the wall to maintain the existing flood protection levels during construction.

The major structural design features designed by our team included the concrete floodwall and foundation, and the structural steel swing gate. The floodwall design included pile foundation design due to lateral loading and the soil conditions at the project site. Steel H-piles were selected as the best support piles due to lower costs and less vibration during installation. The monoliths for each group were analyzed by computing the loads acting on a 1-ft width of the wall and multiplying by the monolith length. Our team utilized CPGA, the USACE program utilized for design of pile foundations, to develop the pile layout for the floodwall. GROUP 2019 (a software tool for analyzing the behavior of pile groups subjected to both axial and lateral loadings) was used to analyze the floodwall designs to verify the pile forces obtained by CPGA.

Civil design included site work, roadway access, construction laydown and site trailer identification and placement, construction sequencing plan and the relocation of multiple utilities. Site design was prepared utilizing the topographic and utility location survey provided by the team's survey subconsultant. Utility relocations were identified and included on the project plans. These utilities included overhead electrical lines, fire suppression towers and firewater lines, storm drain and manholes, security lighting and electrical conduit (on wall), miscellaneous electrical control boxes (on wall), miscellaneous tank foundations (landside), underground electrical conduit, and on-grade steel piping.

Project Relevancies:

- ✓ Located in TX
- ✓ Performed for Galveston District
- ✓ Fee over \$1M
- ✓ Completed within last 5 years

Exemplifies Experiences in:

- ✓ Hydraulics
- ✓ Geotechnical Design, Investigation and Analysis
- ✓ Civil Design Plans and Specifications
- ✓ Environmental Analyses
- ✓ GIS/Survey/Mapping
- ✓ Construction Cost Estimating
- ✓ Planning & Project Management



Detailed geotechnical investigation, analysis and design was completed and a report documenting the subsurface conditions plaguing the site was developed. Geotechnical investigations included subsurface soil conditions, groundwater conditions, site and subgrade preparation, deep foundation design and construction, axial capacity for piles, lateral pile analysis, seepage analysis, global stability analysis and seismic site classifications per IBC.

Geotechnical field services consisted of three test borings on land, drilled with a truck-mounted drill rig to a depth of 100 feet and two test borings on water to a depth of 75 feet. Extensive laboratory testing was also conducted. Seepage Analyses were performed utilizing the commercial seepage analysis software program, SEEP/W. This software uses a finite element formulation to estimate the flow of seepage through the soil layers below the flood wall with sheet pile wall. Based on the soil conditions encountered in the borings, silty sand layers encountered between depths of 0 (El.+9 feet) and 6 feet (El.+3 feet) below existing grade and between depths of 18 feet (El.-9 feet) and 28 feet (El.-19 feet) below existing grade. These layers of granular soils are considered permeable compared to the clayey soils encountered at the site. Since, the sheetpile will be driven to a depth of 40 feet (El.-30.75 feet) below the existing grade, it will penetrate through the above silty sand layers and will prevent any seepage flow through these layers. The design depth determined that steady seepage conditions would likely not exist during any major hurricane event. Instead of steady seepage analyses, our team performed a transient seepage analysis for this project.

Our team has completed the Final Design and BCOES review process and is awaiting Legal Certification. The project is awaiting construction progress from an adjacent non-Federal project before going to bid. Our task order includes all construction phase services, inclusive of engineering during construction, review and approval of shop drawings, response to RFI's and bi-weekly progress meetings. The project is expected to be bid in the first quarter of 2022.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
^a MSMM Engineering, LLC	New Orleans, LA, Houston, TX	Prime: Civil & Structural Design, DDR, P&S, Cost Engineering, Project Management

**F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S
QUALIFICATIONS FOR THIS CONTRACT**

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY
NUMBER

3

21. TITLE AND LOCATION (City and State)

**Dallas Floodway Extension Phase II Recreation and Access
Design
Dallas, TX**

22. YEAR COMPLETED

PROFESSIONAL SERVICES

2020

CONSTRUCTION (If applicable)

2022

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

USACE – Fort Worth District

b. POINT OF CONTACT NAME

Sharon Leheny, Project Manager

c. POINT OF CONTACT TELEPHONE NUMBER

817-886-1563

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Design Fee: \$422K, Construction Cost: \$4.7M

The project involved the planning and design of various recreational components on a former golf course in South Dallas. The trail system and bridges were designed for the USACE Fort Worth District and the non-federal sponsor, the City of Dallas. The Dallas Floodway extension project consisted of various access routes/paths, walking/vehicular trails, bridges, boardwalks, and platforms.

Although the main purpose of the Dallas Floodway Extension Project is public safety and to reduce flood risk for the citizens of Dallas, one of the other components is to provide a recreational plan to create linkages between existing recreational areas and public open spaces. The design of this project provides recreational access to a chain of wetlands designed to provide unimpeded overflow for floodwater along the west side of the Trinity River from the Dallas Floodway. This project provides 2-miles of multi-use trails, additional parking lots at major trail connection points, three additional bridges, including one larger bridge across the Trinity River, an elevated boardwalk trail for access across a low-lying marshy area, and new birdwatching platforms in the previously created wetlands. The design team also added public safety features including culverts for water distribution, gates, and pipe rail fences for the City of Dallas to manage public access, site lighting, and signage at the access points for time periods where the recreational areas are flooded, and public access is restricted. Benches were also added at scenic overlooks, wildflower areas, and for views of the wetlands.

Our team provided the design-bid-build civil design plans and specifications in SpecsInTact, including schematic design, preliminary design, and final design. Engineering services included civil and structural design, hydrology and hydraulic modeling, and landscape architectural services. All designs were completed using Civil 3D and AutoCAD. The final DDR for the project included a detailed description of the project including:

- Geotechnical Investigation Report
- Detailed Design Plates
- Existing Inspection Bridge Report
- H&H Study Reports and Output
- Design Calculations
- Helical Pier Load Testing and Longevity Calculations Information
- ITR Certificate
- MII Cost Estimate
- Project Schedule in Primavera

The civil design plans included three bridge crossings: a 60 foot crossing at Elam Creek, a 60 foot bridge over the chain of wetlands, and a 150 foot crossing over the Trinity River. Additionally, the design package consists of over 2 miles of 12-ft wide multi-use roadway/trail for vehicular and walking trail access, the restoration of parking lots at trail heads, the inclusion of pipe rail fences and gates to prevent after-hour access, and the design of bird watching platforms over the wetlands. All bridges consist of a single lane and are designed for school bus and emergency vehicle loading.

Through our design teams' efforts, USACE and the City of Dallas saved approximately \$1M on the project by incorporating

Project Relevancies:

- ✓ Located in TX
- ✓ Task Order Services
- Completed for Fort Worth District
- ✓ Fee over \$300 K
- ✓ Completed within last 5 years

Exemplifies Experiences in:

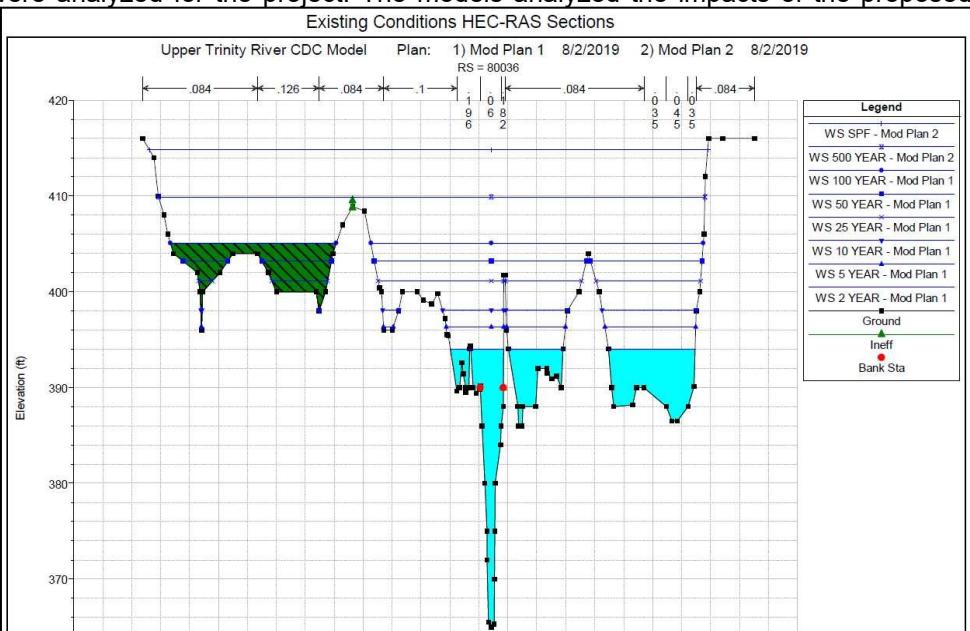
- ✓ Hydrology
- ✓ Hydraulics
- ✓ Geotechnical Design, Investigation and Analysis
- ✓ Civil Engineering
- ✓ Environmental Analyses
- ✓ GIS/Survey/Mapping
- ✓ Construction Cost Estimating
- ✓ Technical Reviews
- ✓ Planning & Project Management



bridges that were fabricated for a previous project. We adapted our design and modeling approach to accommodate the pre-fabricated structural components of the canopy and bridge approach ramps. Our team inventoried and inspected the stored material which included multiple stacks of galvanized steel beams, angles, tubular members, metal decking etc. and boxes of partially corroded bolts and nuts. All the galvanized members were in good condition with very few small traces of corrosion. In addition, our team visited the Pioneer Bridge manufacturing facility in Fort Payne, Alabama to inventory the 150 foot bridge and 60 foot bridge. We inventoried and inspected the long span which was in three segments sitting on blocking. The spans were corroded since the bridge was built using ASTM A 588 and A709 weathering steel (Corten). Galvanized composite decking was pre-attached for the future concrete walking surface and remained in good condition. We closely inspected the welds, especially those where the bottom chord and the vertical and diagonal members came together. The welds were uniform, and no weld spatter was found. Each end of the segments was clearly marked to indicate how the segments tied together. Based on our visual observations, as well as discussions with Pioneer Bridge Co. and our review of their Quality Control records, we recommended the bridges be included as government furnished material. We also recommended that there be additional weld inspection and testing to verify the structures conform to the current weld criteria and to further validate the Quality Control program of the manufacturing process. Following our field inspections, a bridge inspection report was provided to USACE, and we incorporated the dimensions of these bridges into our revised design, saving the project time and money.



Additionally, our team performed hydrologic and hydraulic modeling of the Trinity River to incorporate the new bridge crossings. A HEC-RAS evaluation of the large pedestrian bridge crossing the Trinity River was prepared. Two separate hydraulic models of the Trinity River were analyzed for the project. The models analyzed the impacts of the proposed bridges on the 2, 5, 10, 25, 50 and 100-year storm events; a second model was developed for analysis of the 500-year and Standard Project Flood (SPF) storm events. The generated water surface elevations from the models were reviewed to mitigate impacts to the flooding conditions through the project area as a result of the proposed bridge design. The additional cross sections were added through the project area to represent the proposed Trinity River Pedestrian Bridge and the upstream and downstream areas. Additionally, a scour analysis was performed using HEC-RAS following the methodology in HEC-18. The model output was then utilized by the structural engineering team to design the bridge piling.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
a	MSMM Engineering, LLC	New Orleans, LA	Prime: Civil, Structural, and Landscape Architectural Design, Cost Estimating, Project Management
b	Huitt-Zollars, Inc.	Fort Worth, TX	Sub: ITRs for All Disciplines
c	Mott MacDonald, LLC	Austin, TX	Sub: Hydrologic and Hydraulic Engineering
d	ARS Engineers, Inc.	Dallas, TX	Sub: Topographic and Hydrographic Survey
e	ETTL Engineers and Consultants	Tyler, TX	Sub: Geotechnical Design, Investigation and Analysis

**F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S
QUALIFICATIONS FOR THIS CONTRACT**

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY
NUMBER

4

21. TITLE AND LOCATION (City and State)

Cow Bayou Drainage Pump Station Complex
Orange, TX

22. YEAR COMPLETED

PROFESSIONAL SERVICES

2020

CONSTRUCTION (If applicable)

Ongoing

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

USACE New Orleans District

b. POINT OF CONTACT NAME

Charlie Brandstetter, Design Manager

c. POINT OF CONTACT TELEPHONE NUMBER

504-862-2501

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Design Fee: \$1.3M, **Construction Cost:** \$325M

Our team completed 35% design of the 8,190 CFS pump station as part of the Sabine to Galveston Cow Bayou Complex project. The Cow Bayou Complex includes levee tie-ins, floodwalls, sluice gate structures and a sector gate for navigational traffic. The pump station consists of five 1,365 CFS horizontal, vacuum primed pumps requiring 126-inch suction side and 115-inch discharge side with formed concrete intakes; and three 455 CFS vertical self-priming pumps with 84-inch discharge piping.

The preliminary design phase was a joint engineering effort between USACE New Orleans District, Galveston District and our team in which we operate as a one integrated design team. Our design responsibility included structural design, architectural design, civil site work, geotechnical evaluation and design, MII cost estimating, CAD drafting and project management. A unique feature of this project design is that we are an integrated design team with the New Orleans District who is providing the mechanical and electrical design while we are responsible for coordinating the mechanical and electrical design with the civil, structural and geotechnical engineering design. Other project features being designed by our team include dolphin structures which protect the facility above the water level from possible boat impact, a pump station safe house, and a fuel farm and access roads. We designed the project in Microstation 3D, also utilizing Revit BIM 3D modeling for the facilities. Preliminary investigations consisted of extensive geotechnical testing to determine soil suitability, preliminary estimates of dredging based on navigational traffic loads in the Cow Bayou area, and structural calculations to determine the required height of the T-walls, and navigational structures. Preliminary architectural work was also completed to design the safe house that is attached to the main pump station building. The safe house includes all facilities and work spaces for the pump station operators.

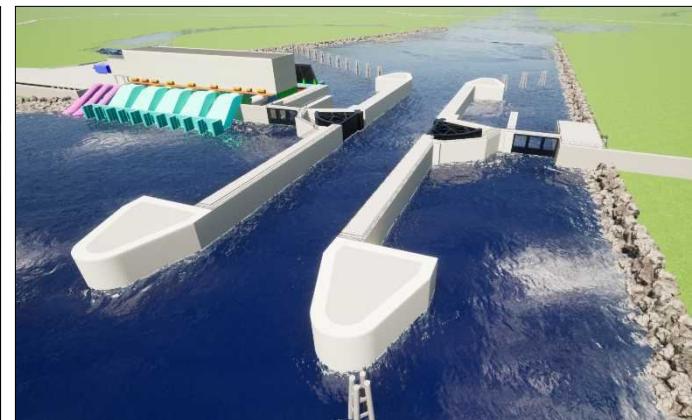
The pump station reinforced concrete structure is 250 FT wide by 128 FT long with 8 pump bays and supported by 100 FT long steel H-pile. The vertical pumps, engines, generators, gear boxes, vacuum pumps and electrical equipment are all housed within the pump station building. The structural steel building located above the concrete pump station structure is 43 FT tall and utilizes 8 IN thick precast concrete tilt up wall panels on all four sides of the building. The roof consists of 6 IN concrete slab on metal roof deck attached to the supporting members maintaining a 1:12 slope. All of these features were designed by our engineers and architects.

Project Relevancies:

- ✓ Located in TX
- ✓ Performed for Galveston/New Orleans Districts
- ✓ Fee over \$1M
- ✓ Completed within last 5 years

Exemplifies Experiences in:

- ✓ Hydrology
- ✓ Hydraulics
- ✓ Geotechnical Design, Investigation and Analysis
- ✓ Civil Design Plans and Specifications
- ✓ Environmental Analyses
- ✓ GIS/Survey/Mapping
- ✓ Construction Cost Estimating
- ✓ Independent Technical Reviews
- ✓ Planning & Project Management



Our structural engineers, following USACE engineering

manuals, designed all permanent project structures associated with the pump station including the horizontal and vertical pump intake and discharge structures, engine and pump support slabs, pump station building, pump station safe house, fuel tank foundation and containment area, water tank foundation, west access bridge, exterior semi-gantry and overhead bridge crane supports, as well as the protective dolphins on the intake and discharge side of the pump station. The pump station and safe house were designed utilizing STAAD software (a 3D structural analysis and design software). Our engineers also reviewed preliminary hydrologic and hydraulic modeling results for the area to set the appropriate protection elevations for all of the risk reduction measures developed as part of this project.

The pump station safe house is a two-story structure 36 FT long by 22 FT wide. The building is supported by cast-in place concrete beams and cast-in place concrete columns. The safe house is a separate structure but abuts to the pump station building. The safe house provides housing for four to six emergency personnel that shall be required to man the facility during a hurricane, and it is designed for tornado force winds. The safe house required a 1,000 gallon per day onsite wastewater treatment facility due to the lack of facilities in the project area. Our civil engineering team provided the wastewater treatment facility design.

The pump station fuel farm consists of an elevated concrete platform structure with containment walls designed to support the three 16K GAL fuel tanks for the pump station. Adjacent to the fuel farm a 55K GAL above ground water storage tank was included as a backup water supply. The sizing was based on providing emergency water for safe house occupants, pump bearing lubrication and safe house sprinkler operations in the event of an emergency.

The geotechnical services included engineering analyses on the soil borings data in which the New Orleans District provided our geotechnical engineers. The team provided recommendations regarding site preparation and drainage, estimates of allowable pile load capacity for support of pump station components and the fuel platform, and estimates of settlement. The geotechnical analysis included performing deep seated stability analyses of the pump station, determining the unbalanced force on the pump station, designing seepage cutoff beneath the pump station, performing analyses to evaluate potential uplift of the pump station during and after construction, determining lateral earth pressures for the wall design, and providing a preliminary design for temporary retaining structures (TRS) to construct the pump station. Analyses were also performed for the design of the dolphins to protect the pump station and gates.

As part of our project management activities and coordination between our design team and the USACE mechanical/electrical design team, we prepared a detailed communication plan which outlined procedures for coordination of design activities and the transfer of information between all parties. The plan addressed scheduling, communication distribution structure, information collection and filing procedures, and a flow chart of personnel and project progression. Our team was responsible for combing the design data for each submittal in which we incorporated the USACE-prepared plans, specs and DDR write-ups into our deliverable set. We also prepared the MII cost estimate for the 35% design package.

Following receipt of the 35% design package, SWD has engaged CERL/ERDC to complete additional hydrologic and hydraulic modeling and changing the acquisition strategy to Design-Build. Currently, our team is awaiting ERDC to complete updated modeling in order to finalize the design package into a Design-Build RFP package which will occur under a future task order.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
^a MSMM Engineering, LLC	New Orleans, LA, Houston, TX	Prime: Civil & Structural Design, Architectural Design, DDR, P&S, Cost Engineering, Site Layout
^b Eustis Engineering, LLC	New Orleans, LA, Houston, TX	Sub: Geotechnical Analysis and Design

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S

20. EXAMPLE PROJECT KEY NUMBER

QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

5

21. TITLE AND LOCATION (City and State)

Greater Houston Flood Mitigation Consortium
Houston, TX

22. YEAR COMPLETED

PROFESSIONAL SERVICES

2020

CONSTRUCTION (If applicable)

N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

Houston Endowment

b. POINT OF CONTACT NAME

Elizabeth Love

c. POINT OF CONTACT TELEPHONE NUMBER

713-238-8100

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Design Fee: \$1.08M; **Construction Cost:** N/A

After the destruction of Hurricane Harvey, the Houston Endowment, Kinder Foundation, and the Cynthia and George Mitchell Foundation brought together some of the region's best specialists on hydrology, hydraulics, ecology, and urban planning. This established the Greater Houston Flood Mitigation Consortium, a group of university researchers and community-based nonprofits focused on providing data and insight to decision makers, the media, and the public to help the region rebuild in a more resilient way. As Program Manager, our team compiled economic research, provided technical analysis and studies, convened public meetings, distributed research funds, created illustrated deliverables, wrote media editorials, and acted as spokesperson for the consortium in articulating decisions and policy recommendations. The team analyzed every watershed that flows through Harris County (Houston), Texas.

The team provided review of existing literature and background on hydrological and hydraulic characteristics of watersheds within the affected area and technical analysis of detention regulations affecting recommended improvements. Every watershed was analyzed for impacts of flood events. For example, a study was developed on the Cypress Creek watershed to evaluate stormwater storage options and large detention solutions of various types for the area. Floodplain mapping was provided for the Greens Bayou resiliency study. In addition, all flood control projects completed in the previous ten-year period were compiled and existing flood maps reviewed, then compared to actual results of flood events in order to evaluate effectiveness—in terms of population displaced, capital reinvestment required, economic impacts to the region, etc.—for each watershed. As a part of these specific watershed studies, our engineers performed technical analysis of water flow patterns, existing drainage networks, and channel capacity and stability. They reviewed the regional HEC-HMS models and several riverine HEC-RAS models for the larger conveyance systems.

Environmental impacts were analyzed for a range of projects proposed to remedy existing flood-prone conditions. A major part of the program was the consideration of "buyouts" of primarily residential properties in highly flood-prone areas, a process in which the Federal government flood insurance program funds the acquisition of properties in highly vulnerable target areas. As a part of this activity, our team evaluated certain neighborhoods that were deemed as valuable for historical and cultural continuity, with the goal of retaining "critical mass" of affected properties where appropriate. Construction costs of the candidate projects were then estimated and an economic analysis was prepared of the relative benefits, in terms of flood damage circumvented, for each watershed so the most cost-effective solutions could be adopted.

Extensive public information activities were required as a part of our scope on this project. We created fact sheets to explain flooding-related issues, compiled a database to identify which watersheds had not been addressed, commissioned

Project Relevancies:

- ✓ Located in TX
- ✓ Fee over \$1M
- ✓ Completed within last 5 years

Exemplifies Experiences in:

- ✓ Hydrology
- ✓ Hydraulics
- ✓ Civil Engineering
- ✓ Environmental Analyses
- ✓ GIS/Survey/Mapping
- ✓ Cultural Resources
- ✓ Construction Cost Estimating
- ✓ Technical Reviews
- ✓ Environmental Planning
- ✓ Planning & Project Management
- ✓ Economic Analyses
- ✓ Water Resources Planning
- ✓ Public Information

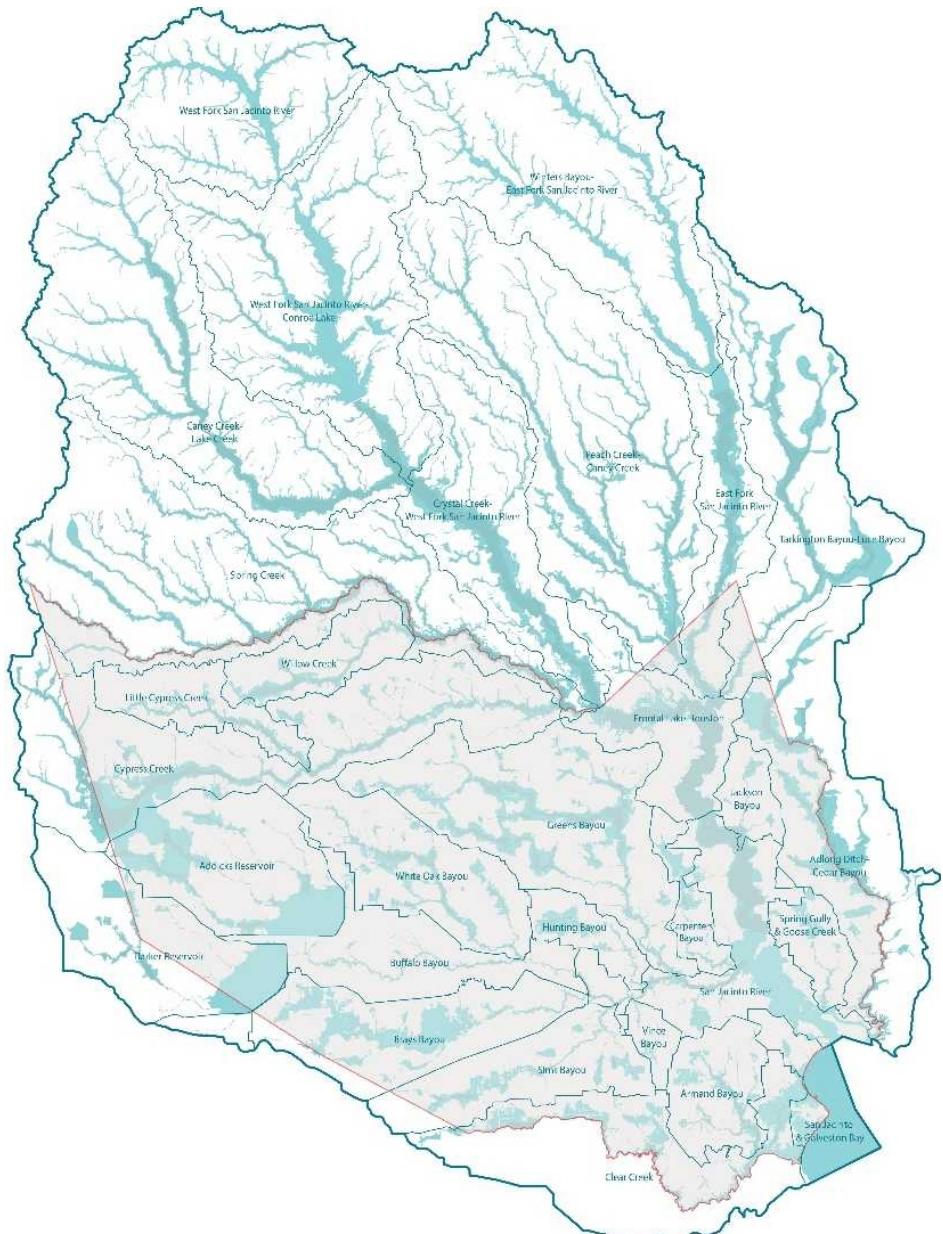


research to identify potential flood control projects, organized charrettes and workshops with national experts on buyouts, released a series of conclusions on flooding, and consulted regularly with the county judge, county commissioners, and the city's resiliency office. All of this data was shared on a publicly accessible website our team created, <https://www.houstonconsortium.com/>, which was developed as part of our scope.

As part of our public information responsibilities, we conducted a series of neighborhood meetings that featured person-to-person breakout sessions. We hosted workshops that focused on subjects such as buyouts and lectures by national subject matter experts who participated in discussion of best practices for flood mitigation. Two public release events were held to explain documentation of study findings. Our team hosted and ran all public meetings. An added benefit provided by the team was its bilingual capabilities, so that we were able to conduct public meetings in both English and Spanish. In addition, we prepared a detailed GIS database which captured significant hydrology, hydraulic, geographic, economic and socioeconomic information. The GIS analysis of the H&H data was used to overlay flooding, demographics, locations of current and future flood control projects, with census data and political boundaries to provide an analysis of the historical flooding issues on the various economic demographics.

The team prepared a consortium report, "The Flood Next Time: What We Can Do Now" which is a richly illustrated guide to help Houston become a more resilient city. It defines flooding as a human problem, and is organized into three sections: "keep people high and dry," "remove people from harms' way," and "return people to normalcy" which provide ideas for what local agencies can do to minimize the human impact of the next flood. The ideas include "flood totems" in parks, distributed neighborhood detention, watershed-based development regulations, flood warning systems, schools as "lily pads," key road links, rapid buyouts, and public transit links.

Our research and documentation was utilized to support the \$2.5 B flood mitigation bond program sponsored by the Harris County Flood Control District. In addition, the team was asked to brief the newly initiated City of Houston Office of Recovery. A special focus was developed for the City's planning efforts on "equity" of future investment models, given that a disproportionate share of damage has been experienced in the lower income communities.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
^a Huitt-Zollars, Inc.	Houston, TX; Dallas, TX	Prime A-E, Program Management, Planner, Lead Engineering Consultant

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER

6

21. TITLE AND LOCATION (City and State)

Granger Lake Management Office Building Design
Granger, TX

22. YEAR COMPLETED

PROFESSIONAL SERVICES
2019

CONSTRUCTION (If applicable)
2022

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

USACE Fort Worth District

b. POINT OF CONTACT NAME

Sharon Leheny, Project Manager

c. POINT OF CONTACT TELEPHONE NUMBER

817-886-1563

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Design Fee: \$358K; Construction Cost: \$3.2M

The Granger Lake Management staff required a new administrative office facility due to the presence of black mold. The new facility is located across the street from the previous facility which was demolished as part of this task order. The new facility was designed per UFC 4-020-01 and is classified as a Community Service Center which serves the public for a variety of functions. During the planning charrette, we worked with the Granger Lake management staff to develop a list of key design criteria, which included:

- An 80-person conference room which doubles as a volunteer room
- Lake management staff offices
- Scenic views of Granger Lake
- Improved water pressure
- A large stately public lobby area with a lodge-like interior design complete with exhibits displays for artifacts, a mammoth pelvis and animal mounts from the lake property

Our team fast-tracked the design effort to accommodate a schedule compression to facilitate the obligation of Recreational Funds before the end of the FY. Our project team coordinated directly with the local water purveyor and sewer permitting districts to expedite the filing, review, and approval of the septic permit, pipe size increase, and extension of the waterline.

The construction documents (plans, specifications and design analysis) were prepared in accordance with the SWF AEIM. The new one-story facility is 4,856 SF and included architectural, interiors, mechanical, electrical, plumbing, communications, fire protection, life safety, structural, and civil design. The civil design activities included landscaping, paving, and AT/FP. Site lighting was designed, along with parking for visitors and staff. A separate fenced area was required for government vehicles and equipment. All design phase deliverables were accompanied by an MII cost estimate.



Project Relevancies:

- ✓ Located in TX
- ✓ Task Order Performed for Fort Worth District
- ✓ Fee over \$300 K
- ✓ Completed within last 5 years

Exemplifies Experiences in:

- ✓ Civil Engineering
- ✓ Environmental Analyses
- ✓ GIS/Survey/Mapping
- ✓ Construction Cost Estimating
- ✓ Technical Reviews
- ✓ Planning & Project Management

Civil design plans and specifications, completed in AutoCAD Civil 3D, consisted of overall site layout, a sewer septic field, paving layout plans for visitor and RV parking and government parking, utility design, drainage design, as well as a demolition plan. The team developed as-built drawings of the existing facility to produce the demolition plan. Site drainage includes a shallow swale, designed utilizing Snyder's unit hydrograph procedures, which collects the roadway drainage and conveys it to the lake. Following the Army Low Impact Development Technical User Guide, our design accommodates sheet flow drainage from the new parking lots and drives and conveys the runoff into two small bioretention basins which allows for natural stormwater quality through infiltration. Utility design included all new utilities and increased the size of the existing 2" water line. Under a tight timeline, our team negotiated with Bell Milam Falls Water Supply Corporation to install a new 4" water line service. A new septic system was designed for the new building. The system features dual tanks (one-1500 double chamber and one-1000-gallon pump tank) discharging into low pressure dosing trenches.

Extensive construction cost estimates were completed for the project, including a PACES estimate provided at the completion of the multiple day design charrette. Additional estimating was completed and provided at each design deliverable, including multiple MII submittals and identification of cost savings measures to items requested by the Lake Management staff.

To incorporate sustainability features, the long sides of the building was oriented facing north/south reducing the solar loads and providing daylight and lake views. The windows and glass doors feature double paned glass separated by an air space with a Low-E coating on the inner face of the outer glass panel – for maximum energy efficiency. The north facing windows within the Multi-Purpose Conference Room are located high on the wall under the roof overhang providing daylight and views. The entrance doors and windows are protected by an exterior overhang. The east and west elevations have minimum fenestration. The four office windows facing south have Bahama shutters. Closed cell foam insulation is used in the walls and roof for maximum insulation value. The roof system includes a bright galvanized metal roof that increases the roof's solar reflectance index value.

The design team also completed all the electrical, mechanical and plumbing design for this facility. The mechanical/plumbing design consisted of heating, ventilating, air conditioning, refrigeration, energy, piping and plumbing systems. The facility was designed to utilize energy efficient HVAC split system direct expansion system with indoor air handling units and outdoor condensing units with one system dedicated to providing conditioned outside air to the space. The indoor units utilize electric heat strips for winter conditions. The building was designed to be conditioned by multiple direction expansion coil type air handling units with electric heat. The designs complied with International Mechanical Code (IMC), International Plumbing Code (IPC), National Fire Protection Association (NFPA), Sheet Metal and Air Conditioning Contractors National Association (SMACNA), American Society of Heating, Refrigerating and Air Conditioning (ASHRAE) and the Americans with Disabilities Act (ADA).

Environmental services included a Hazardous Materials Survey to evaluate the presence of asbestos and lead-based paint and provide remediation options in the existing facility for inclusion in the demolition plan. The results of the survey identified asbestos containing materials (ACM) in two components of the facility. Non-friable ACM was found in the black mastic (adhesive) in the floor tile and in the white mastic joint compound on the ducts of the HVAC system located above the drop ceilings. An abatement plan was developed for the ACM and was included in the final construction documents.

The project is currently in construction and our design team responds to RFI's and is working with the USACE field office to answer construction and design related questions.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
a	MSMM Engineering	New Orleans, LA; Houston, TX	Prime: Architecture, Civil, Structural, Mechanical, Electrical, Cost Estimating
b	Huitt-Zollars, Inc	Fort Worth, TX	Sub: ITRs for All Disciplines
c	ARS Survey	Dallas, TX	Sub: Topographic Survey
d	Jesco Environmental and Geotechnical Services, Inc.	Jennings, LA	Sub: Hazardous Waste Assessment/Remediation

**F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S
QUALIFICATIONS FOR THIS CONTRACT**

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY
NUMBER

7

21. TITLE AND LOCATION (City and State)

Short Circuit and Arc Flash Analyses

Multiple Fort Worth District Lakes, TX

22. YEAR COMPLETED

PROFESSIONAL SERVICES

2018

CONSTRUCTION (If applicable)

N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

USACE Fort Worth District

b. POINT OF CONTACT NAME

Eddie Lippe

c. POINT OF CONTACT TELEPHONE NUMBER

254-622-3332

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Design Fee: \$680K, Construction Cost: N/A

The purpose of this project was to improve the safety of lake maintenance personnel and contractors engaged to perform work on the electrical systems at all lake facilities managed by USACE Fort Worth District.

The lake facilities included in this task order were all dam outlet works and gates, spillways, three hydroelectric plants, and the USACE Lake Project Office, all in Texas. The locations included: Aquilla Lake Outlet Works, Hillsboro; Navarro Mills Lake Spillway, Corsicana; O.C. Fisher Outlet Works, San Angelo; Proctor Spillway, Comanche; Whitney Hydropower Facility and Outlet Works, Hillsboro; Bardwell Outlet Works, Ennis; Belton Outlet Works, Belton; Benbrook Outlet Works, Benbrook; Canyon Lake Outlet Works, San Antonio; Cooper Dam Outlet Works, Cooper; Georgetown Outlet Works, Georgetown; Granger Outlet Works, Granger; Grapevine Outlet Works, Grapevine; Joe Pool Outlet Works, Cedar Hill; Lake of the Pines Outlet Works, Jefferson; Lavon Spillway, Wylie; Lewisville Outlet Works, Lewisville; Ray Roberts, Denton; Sam Rayburn Hydropower Facility and Outlet Works, Jasper; Somerville Outlet Works, Brenham; Town Bluff Hydropower Facility and Outlet Works, Jasper; Stillhouse Outlet Works, Belton; Waco Spillway and Outlet Works, Belton; and Wright Patman Outlet Works, Texarkana.

Our team provided all project management and electrical engineering services. The scope consisted of gathering all information regarding each facility's electrical systems from both the record drawings and the actual installation by visiting the site and recording data such as wire lengths and sizes, circuit breaker and fuse data, etc. This equipment is defined by NFPA 70E to include all equipment with operating voltage of 208VAC 3P to 480 VAC 3P. The analysis included equipment at these levels and the contributions of short circuits from motors 5 HP or greater.

The design team was required by code to wear appropriate PPE (personal protective equipment) as it was not possible to de-energize the equipment during site investigations requiring the team to assess live systems. The team included licensed electricians to remove covers, etc., as we visually and physically inspected and inventoried all panel boards, switchgear, and other distribution equipment to determine equipment ratings. The team also identified safety observations that required immediate action and reported those to lake management staff and USACE.

Project Relevancies:

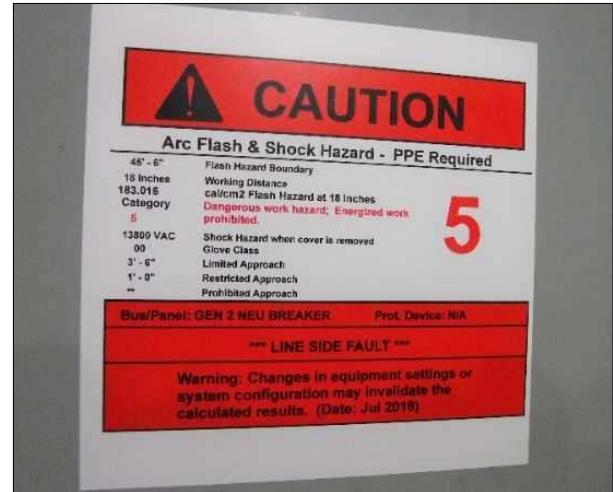
- ✓ Located in TX
- ✓ Fee Over \$300K
- ✓ Performed for USACE/SWF
- ✓ Completed within Last 5 Years

Exemplifies Experiences in:

- ✓ Cost Estimating
- ✓ Technical Review
- ✓ Planning & Project Management
- ✓ Public Information



The data collected was used to create an analytical model from which short circuit and arc flash calculations were performed. The arc flash calculations estimate the amount of heat energy that would be released during an accidental short circuit event. Depending on the calculated energy level which would be generated, a hazard level was assigned to each equipment item according to NFPA 70E. Each hazard level has an associated list of PPE needed to protect all workers during electrical maintenance or repair operations. Arc flash labels with the pertinent hazard and PPE information were prepared and applied to each item of equipment involved in the analysis. A final study and documentation was prepared and provided to USACE.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION (<i>City and State</i>)	(3) ROLE
a	Huitt-Zollars, Inc.	Fort Worth, TX	Prime: Project Management and Electrical Engineer

**F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S
QUALIFICATIONS FOR THIS CONTRACT**

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY
NUMBER

8

21. TITLE AND LOCATION (City and State)

**Ascension Parish Environmental Infrastructure Sewer Treatment
Plant Design Hillaryville, LA**

22. YEAR COMPLETED

PROFESSIONAL SERVICES

2022

CONSTRUCTION (If applicable)

2024

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

USACE New Orleans District

b. POINT OF CONTACT NAME

Nick Sims, Project Manager

c. POINT OF CONTACT TELEPHONE NUMBER

225-603-3753

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Design Fee: \$1.2M, Construction Cost: \$21.5M

Through a federal program to fund Environmental Infrastructure, Section 219, WRDA 92, within local municipalities, our team representing the USACE New Orleans District, worked with the Ascension Parish Government, the non-federal sponsor, to design a regional wastewater treatment plant (WWTP) adjacent to a recently designed sewer pump station (designed by our team under a separate task order). Ascension Parish utilizes a fragmented system of treatment options with subpar results that vary by the various developer of each housing subdivision. The current system includes septic tanks, package treatment plants, and an oxidation pond, all of which discharge into local ditches and streams. USACE received approved funding for this area, as high growth and expansion of existing subdivisions will continue to contribute to a poor environmental situation. The WWTP is one step of a regionalization plan, which our team developed, to bring all wastewater in the area to a single advanced treatment facility and discharge the treated effluent into the Mississippi River in lieu of local ditches.

We provided 100% civil design plans and specifications complying with the USACE submittal requirements for a new 1.8 MGD (million gallon per day) WWTP to increase treatment capacity and facilitate regionalization of the Parish. Design included site layout, utility relocation and replacement, detailed cost estimating and construction phase services. We included sustainability features in the project specifications which included the use of several Energy Star appliances and distribution of HVAC systems within the facility.

The treatment plant design includes a new facility on an eight (8) acre parcel of land owned by Ascension Parish. Our team was responsible for all pump station hydraulic calculations and piping sizing. The design consisted of a dual set of treatment processes for redundancy and included an influent pump station, headworks with screens and grit removal, anoxic tank, oxidation ditch, clarifier, chlorine contact chamber, sludge age controllers, aerobic digesters, belt filter press with new building, maintenance shed, generator, administration building as well as site fencing, drainage and internal asphalt/gravel roadways. The administration building features two offices, laboratory, break room, control and server rooms, rest rooms, storage and a maintenance shop in the 3,200 SFT facility.

Based on our regionalized master plan, the facility is designed so that a future aeration basin and clarifier can be constructed to easily upgrade the treatment plant to 2.7 MGD as additional capacity is needed. As part of the design, our team developed treatment plant hydraulic profiles and process flow diagrams for average daily and peak hourly flows for the 1.8 MGD and 2.7 MGD facility, reviewed scenarios where one unit out was temporarily of service and prepared all process unit calculations for the entire treatment plant. The civil engineering design included sizing of the influent and effluent pump station, headworks design, and site layout including site drainage, access roads and process piping.

Project Relevancies:

- ✓ Located in LA
- ✓ Performed for New Orleans District
- ✓ Fee over \$1M
- ✓ Completed within last 5 years

Exemplifies Experiences in:

- ✓ Hydraulics
- ✓ Geotechnical Design, Investigation and Analysis
- ✓ Civil Design Plans and Specifications
- ✓ GIS/Survey/Mapping
- ✓ Construction Cost Estimating
- ✓ Planning & Project Management
- ✓ Public Information



The structural engineering design included the reinforced concrete structures for all process units, pump stations and slabs on grade. Structural design also consisted of the CMU electrical/control buildings, as well as pile design for all structures and buildings.

The geotechnical investigation included the drilling of three deep undisturbed sample type soil test borings, ten shallow auger borings to determine subsoil conditions and stratification, and eleven CPTs to augment the soil test borings. Soil mechanics laboratory tests performed on samples obtained were used to evaluate the physical properties of the various substrata. Engineering analyses, based on the available soil boring and laboratory tests were made to determine recommendations regarding site preparation, excavations and dewatering, lateral earth pressures, estimates of allowable soil bearing values, estimates of settlement and general foundation construction procedures, and recommendations for flexible and rigid pavements.

Discharge of the WWTP effluent is routed to the Mississippi River through an effluent pump station and force main. In addition to the design-bid-build civil design plans and specifications, our team was also responsible for project permitting through LADEQ, LADHH, LADOTD and CPRA of Louisiana. Additionally, our team was responsible for detailed MII cost estimating, presentations at public meetings, ROW determination, utilities design and coordination, topographic and utility surveying, and detailed geotechnical investigations.

The project has completed BCOES review and the design-bid-build documents will be advertised in the FY22. Our team will provide construction phase services and be responsible for shop drawing reviews, site visits, RFIs and project meetings.

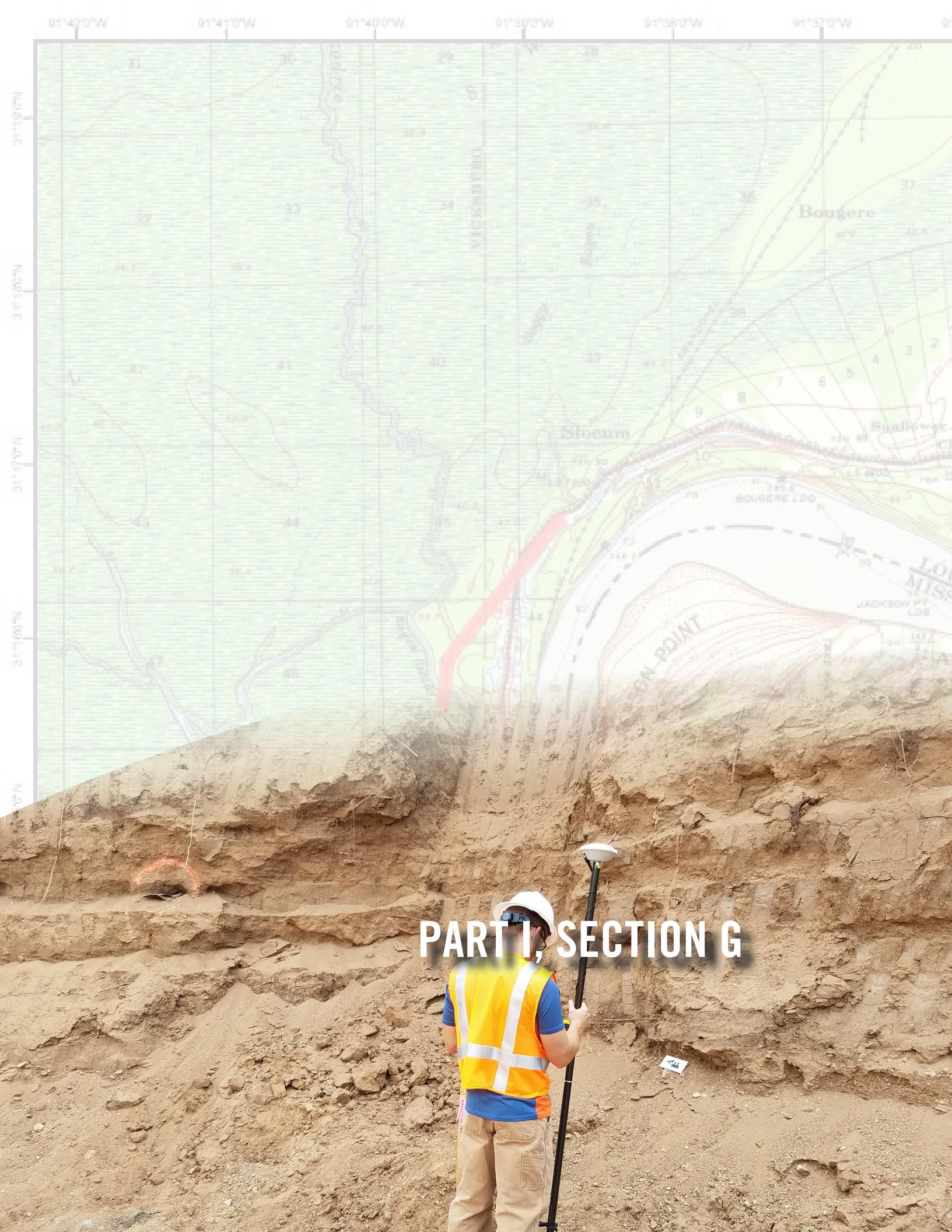


25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
^a	MSMM Engineering, LLC	New Orleans, LA; Houston, TX	Prime – Civil, Architectural, Mechanical, Electrical & Structural Design, P&S, Cost Engineering, Public Information
^b	(1) FIRM NAME Eustis Engineering, LLC	(2) FIRM LOCATION (City and State) New Orleans, LA; Houston, TX	(3) ROLE Sub- Geotechnical Investigation, Analysis and Design

PART I,
SECTION G

PART I, SECTION G

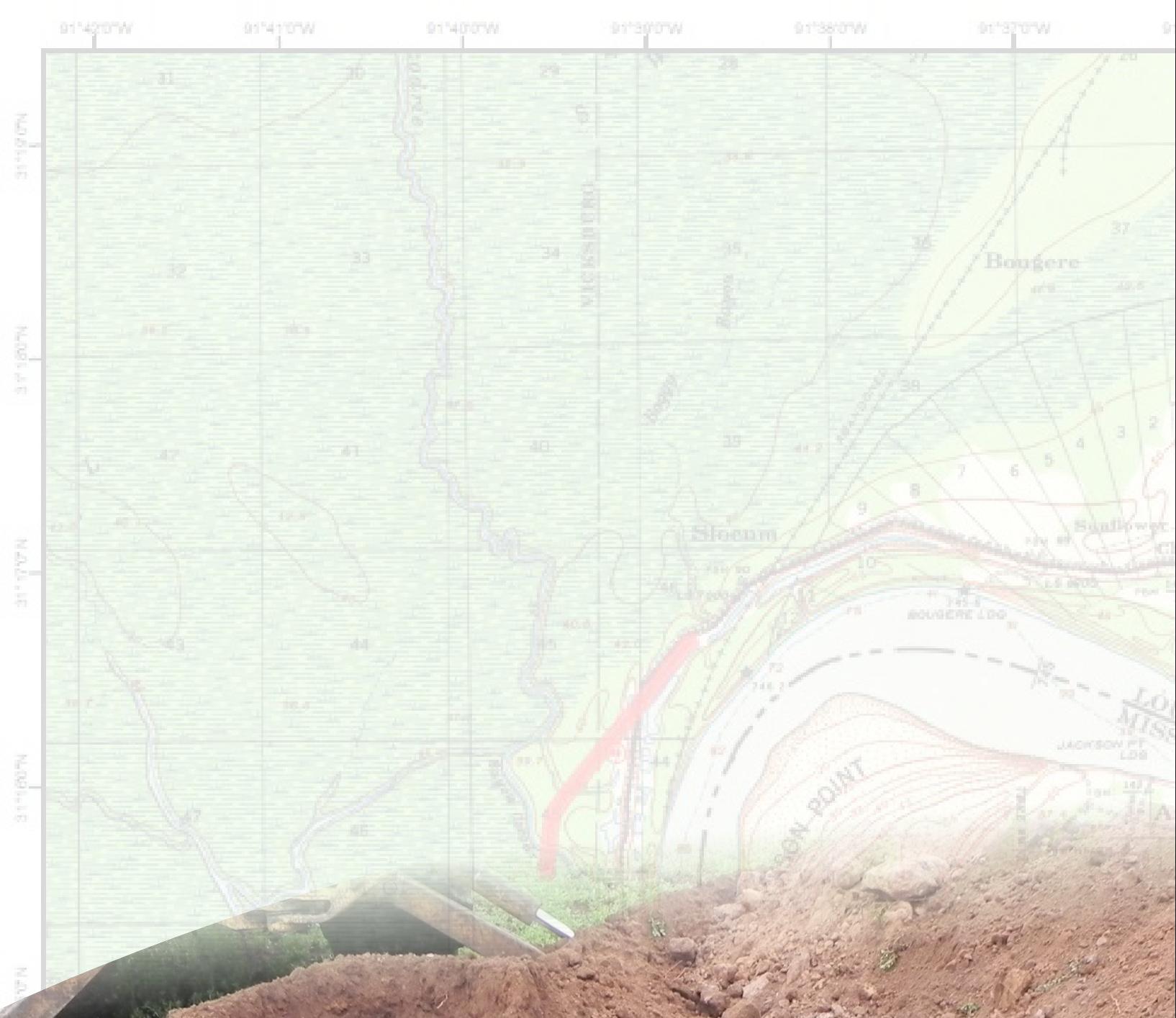


G. KEY PERSONNEL PARTICIPATION IN EXAMPLE PROJECTS

26. NAMES OF KEY PERSONNEL (From Section E, Block 12)	27. ROLE IN THIS CONTRACT (From Section E, Block 13)	28. EXAMPLE PROJECTS LISTED IN SECTION F							
		1	2	3	4	5	6	7	8
Josh Carson	Program Manager	X	X	X	X		X		X
Scott Chehardy, PE	Project Manager	X	X		X		X		X
Rob Armstrong, PE, CFM	Project Manager			X		X			
Jim Wilson, PE, LEED AP	Civil Engineer	X	X	X	X		X		X
Mike De Leon, PE	Civil Engineer	X		X					
Bob Yokum, PE	Structural Engineer		X	X	X				X
William Wallace, PE, SECB, MLSE	Structural Engineer	X	X	X					
Steve Finnegan, AIA	Architect				X		X		X
Bill Hoelscher, AIA, LEED AP	Architect	X					X		
Harry Hawney, PE	Electrical Engineer				X				X
Scott Parma, PE, LEED AP	Electrical Engineer	X	X				X	X	
Jeff Wilson, PE, LEED AP	Mechanical Engineer	X					X		
Will Krasner, PE	Mechanical Engineer						X		
Chris Scott, RLA, ASLA, LEED AP, CNU-A	Landscape Architect				X				
Stephen R. Richards, PE	Geotechnical Engineer			X					
Manish Mardia, PE	Environmental Engineer	X	X	X	X		X		X
Saumya Sarkar, PE	Registered Environmental Engineer								
Allison Woods, PE, CFM, LEED GA	Hydrologic/Hydraulic Engineer						X		
Josh Carter, PE, D.CE	Hydrologic/Hydraulic Engineer			X					
Janice McLean, RPA	Archeologist								
Dustin Davison, RPLS	Land Surveyor				X		X		X
Don Daigle, CVS, CPE	Cost Estimator or Cost Engineer	X	X	X	X		X		X
Zachary Steinkuhler, PE, CFM	GIS Specialist						X		
Christoff Spieler, PE, LEED AP BD+C	Public Information Specialist						X		
James Carney	Economist								
Eric Webb, PhD	Biologist								
Glen Wallace, PhD	Hydrogeologist								
Ramesh Kalvakaalva, PE, CVS	Certified Value Specialist		X	X					

29. EXAMPLE PROJECTS KEY

N O	TITLE OF EXAMPLE PROJECT (FROM SECTION F)	N O	TITLE OF EXAMPLE PROJECT (FROM SECTION F)
1	Dallas Floodway Design Build RFPs: 277K Levee Raise and Delta Pump Station – Dallas, TX	5	Greater Houston Flood Mitigation Consortium – Houston, TX
2	Texas City and Vicinity Hurricane Flood Protection Project, I-Wall to T-Wall Conversion – Texas City, TX	6	Granger Lake Management Office Building Design – Granger, TX
3	Dallas Floodway Extension Phase II Recreation and Access Design – Dallas, TX	7	Short Circuit and Arc Flash Analyses – Multiple Fort Worth District Lakes, TX
4	Cow Bayou Drainage Pump Station Complex – Orange County, TX	8	Ascension Parish Environmental Infrastructure Design – Hillaryville, LA



PART I, SECTION H & I

PART I,
SECTION H & I

H. ADDITIONAL INFORMATION

30. PROVIDE ANY ADDITIONAL INFORMATION REQUESTED BY THE AGENCY. ATTACH ADDITIONAL SHEETS AS NEEDED.

INTRODUCTION

The Prime A-E for this assignment will be MSMM Huitt-Zollars, A Joint Venture (MHZ). We are certified by the Small Business Administration as an approved Mentor-Protégé small business enterprise. The two partner firms comprising our Joint Venture are MSMM Engineering, LLC, headquartered in New Orleans, LA (with a Texas office), and Huitt-Zollars, Inc., headquartered in Dallas, TX (with several offices throughout the AOR), both of whom are full-service design firms specializing in civil works design. Our combined resources offer the Fort Worth District a full-service team with a deep portfolio in Federal IDIQ contracts generally and Corps of Engineers Civil Works projects in Texas and Louisiana specifically. Both firms have extensive USACE design, construction phase and project management experience in their own right, and as a team we are currently engaged with several USACE Districts in the AOR including Galveston, Tulsa, New Orleans and Albuquerque, in addition to our ongoing (including the existing SWF Civil Works small business contract) work with the Fort Worth District. Our JV's multiple offices focus the bulk of our professionals in Texas and Louisiana, where both firms maintain a significant presence.

Together, we believe that we are a perfect match for this assignment because:

- **MSMM is currently under contract for the SWF Civil Works IDIQ, and we have only gotten better since you hired us the last time.**
 - Since signing contract #W9126G-16-D-0017 in September of 2016, we have received and completed nine (9) task orders totaling roughly \$6M in design fee. Our portfolio now features many assignments executed over the last 5 years that are directly applicable to the experience required under this contract;
 - Furthermore, our JV partner Huitt-Zollars (HZ) has assisted MSMM on several task orders under the present contract, providing ITR, Design-Build RFP Development and engineering and architectural services.
- In addition to the experience acquired under this contract over the last 5 years, along with our large business partner Huitt-Zollars, **our team now boasts the additional advantages of national level professional resources, multiple regional office locations, and a diversity of USACE experience throughout the SWD AOR.**
- Both partner firms specialize in serving USACE, and both have **extensive recent experience together on major infrastructure assignments in the SWD AOR.** Recent assignments include the Dallas Floodway Extension and the CBP Border Infrastructure programs.
- Both partner firms are **headquartered in the Fort Worth District boundary (Louisiana and Texas)**, with multiple offices and an extensive track record of successful Civil Works projects in the two states.
- Our team is led by a senior design professional who is well known to Fort Worth District, **Program Manager Josh Carson, who started his career at the USACE New Orleans District** and is now the lead Federal project manager for MSMM. He has managed each of the task orders assigned to MSMM under the current contract and has an excellent working relationship with the project and design managers within the Civil Works Branch as well as many of the non-federal sponsors the district works with.

In addition to these benefits provided by the Joint Venture itself, our team is supplemented by a group of sub-consultants that both diversify our capabilities in specialty areas of technical expertise and enhance our commitment to the participation of small business entities:



A certified Veteran-Owned Small Business (VOSB), Vernadero Group will provide a biology specialist for our environmental team and will support us in the areas of environmental resources planning and regulatory compliance, specifically for NEPA, environmental site assessments, wetland permitting and mitigation planning, and hazardous waste management services, as required.



JESCO Environmental and Geotechnical Services, Inc., a Jenner, LA consulting firm and a SB, SDB, WOSB and 8(a) enterprise, will support our environmental engineering team primarily in the area of HTRW investigations and remediation.



ARS Engineering, Inc. is a Small Disadvantaged Business (SDB) enterprise and HUB Certified firm located in Dallas and Fort Worth, TX, and specializing in boundary, topographic, planimetric, and utility location surveys. Public sector clientele include USACE/SWF, Brazos River Authority, FAA, International Boundary and Water Commission, Federal Bureau of Prisons, North Texas Tollway Authority, TXDoT, Trinity River Authority, and USPS.

H. ADDITIONAL INFORMATION (continued)

R. Christopher Goodwin & Associates, Inc. (RCG) is a Small Business Enterprise (SBE) with offices in New Orleans, LA as well as in the states of Kansas, New Mexico, and Maryland, and with a specialization in cultural resources management. RCG maintains a full staff of professional archaeologists, nautical archaeologists, architectural historians, historians, GIS professionals, and support staff and has completed dozens of assignments for USACE in the SWD AOR.



ETTL

ETTL Engineers and Consultants, Inc. is a Woman Owned Small Business (WOSB) and HUB Certified firm headquartered in Tyler, TX, with offices throughout Texas and Arkansas, and specializing in geotechnical and environmental drilling, laboratory soil testing, geotechnical engineering, construction materials testing and environmental consulting services. ETTL has served USACE since 2006, having completed over 40 projects for SWF in that time.



Eustis Engineering LLC is a Small Business Enterprise headquartered in Metarie, LA, with an office in Houston, TX, specializing in geotechnical engineering. Eustis has been working for the U.S. Army Corps of Engineers since 1960 and during that time has completed over 1,100 projects for USACE.



One of the largest environmental consulting firms in the world, Tetra Tech employs more than 20,000 scientists, engineers, technicians, and support personnel located in more than 450 offices worldwide. Tetra Tech has been ranked #1 in the U.S. by ENR in Water for the past 18 years straight, as well as being ranked #1 in dams and reservoirs, environmental management, and environmental science.



A major engineering civil works and water resources consulting firm with specialization in hydrology and hydraulic modeling, flood risk management, erosion control, ecosystem restoration, bank stabilization, and stream restoration projects, with a wide variety of projects within the USACE Southwestern Division AOR.



Michael Baker International (MBI), a national E-A firm with offices in Dallas, TX, Houston, TX, and Baton Rouge, LA, will provide support to the prime JV in the areas of civil engineering, geotechnical engineering analysis, and cost estimating. The JV team is currently associated with MBI on five current IDIQ's, for California National Guard, USACE District Offices in Fort Worth, Albuquerque and Tulsa (multiple contracts), and AFCEC.



Neelu, Inc. specializes in the execution of Value Engineering Studies & Cost and Schedule Risk Assessment (CSRA) on Civil Works/DOD projects. Neelu Inc. has led multiple Value Engineering studies for USACE across SWD over the past three years that has led to several million in first cost savings to USACE.



WJE Associates, Inc., is a material sciences expert with lab facilities located in Austin, TX, and will support our team in the area of corrosion analysis and service life assessments.

(a) SPECIALIZED EXPERIENCE AND TECHNICAL COMPETENCE

Our Joint Venture was formed to serve USACE on both civil works and military programs and is currently serving Fort Worth District as a participant in the present MATOC pool for Civil Works as well as the Tulsa District in their general AE MATOC. Both firms have a background in major infrastructure programs for USACE and other government agencies. For example, MSMM performed evaluation, inspection and post-disaster design response to Hurricane Katrina and completed over 80 task orders for the Hurricane Storm Damage Risk Reduction System (HSDRRS) and Mississippi River Levees (MRL) systems. Huitt-Zollars has contributed to some of the largest infrastructure programs that USACE has done in recent memory, including the 4,500-acre development in connection with the Fort Bliss Expansion Program, Southwest Border Infrastructure Program in Texas, Arizona, and California, the infrastructure design for the METC program at Joint Base San Antonio, and the NAVFAC Marine BEQ Complex at NCTS Finegayan, Guam.



SF 330 Part 1



H-2

STANDARD FORM 330 (REV. 8/2016)

H. ADDITIONAL INFORMATION (continued)

The eight projects featured in Section F of this document summarize some of our best, most relevant recent work. Presented below is a matrix that summarizes the specific areas of experience that each project has in relation to this contract:

Project	277K Levee Raise and Delta Pump Station	Hurricane Flood Protection Project, I-Wall to T-Wall Conversion	Dallas Floodway Extension Recreation & Bridge Design	Cow Bayou Drainage Pump Station Complex Design	Greater Houston Flood Consortium	Granger Lake Management Office Building Design	Environmental Infrastructure Sewer Treatment Plant	Short Circuit and Arc Flash Analyses
Location	TX	TX	TX	TX	TX	TX	LA	TX
Fee	\$1.2M	\$1.8M	\$422K	\$1.3M	\$500K	\$350K	\$1.5M	\$680K
Client	USACE	USACE	USACE	USACE	GHFC	USACE	USACE	USACE
Date Complete	2021	2021	2020	2020	2019	2019	2021	2018
Hydrology Experience	✓		✓	✓	✓			
Hydraulics Experience	✓		✓	✓	✓		✓	
Geotechnical	✓	✓	✓	✓			✓	
Civil Design Engineering	✓	✓	✓	✓		✓	✓	✓
Environmental Analyses	✓	✓			✓	✓		
GIS, Survey	✓	✓	✓	✓	✓	✓	✓	✓
Cultural Resources					✓			
Construction Cost Estimating	✓	✓	✓	✓	✓	✓	✓	✓
Tech Review			✓	✓	✓	✓	✓	✓
Enviro Planning					✓			
Planning/PM Experience	✓	✓	✓	✓	✓	✓	✓	✓
Economic Analysis					✓			
Water Resources Planning					✓			
Public Info					✓			✓

It is difficult to describe all of our team's diverse experience with only these 8 project examples. Accordingly, provided below is additional material related to the experience of our JV members and our sub-consultants for each of the 14 sub-categories of experience required for this assignment under the Solicitation.

1. Hydrology Experience and 2. Hydraulics Experience

One of the most prolific areas of our team's practice in the SWD AOR is the development of large parcels of land, generally of 1,000 acres or more. All of these developments include significant amounts of hydrological and hydraulic analysis. Of course, the most well-known example of large-scale greenfield development is the 4,500-acre Fort Bliss Expansion program overseen by USACE/SWF, for which we provided 100% analysis and design of over \$1B of infrastructure. In addition, we have performed complex H&H analysis and design on several major civil works projects in the region which include:

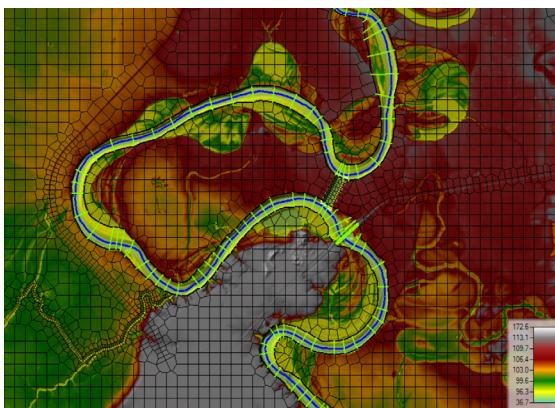
7TH STREET BRIDGE REPLACEMENT, Our team provided hydrologic and hydraulic analysis for the 7th Street Bridge Replacement over the Clear Fork of the Trinity River. To determine flood hydrographs, each reservoir in the upstream watershed, including Lewisville Lake, was determined to be at or above conservation pool level at the start of the USACE Standard Project Flood. The team assessed complex existing hydraulic conditions and calibrated to six streamflow gaging stations and high-water marks. The team provided HEC-RAS hydraulic modeling, scour analysis, and sensitivity analysis for potential adverse impacts from debris and from impacts on the system by proposed construction staging. Coordination with USACE Fort Worth District was required, and the team prepared the Trinity River Corridor Development Certificate permit application.



H. ADDITIONAL INFORMATION (continued)

STONEBRIDGE RANCH in McKinney, TX, a 6,200-acre development that featured an extensive hydrology (HEC-HMS) and hydraulic analysis (HEC-RAS) of the watershed and preparation of a watershed management plan. A total of 13 lakes were involved, five existing and eight proposed. Extensive floodplain analysis was required to determine discharges into major streams.

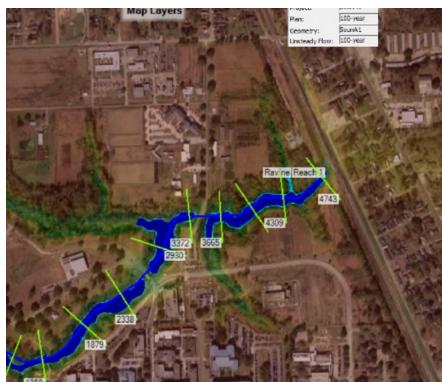
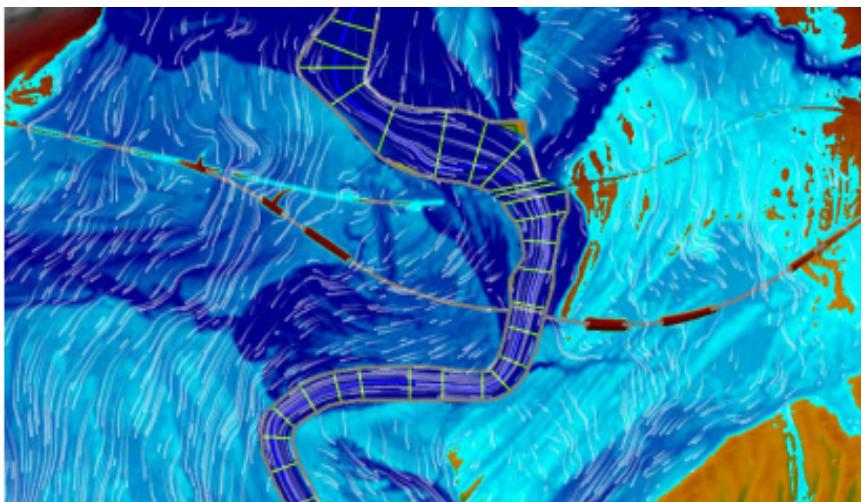
MEANDER MIGRATION STUDY AND CONCEPT DESIGN ALONG THE BRAZOS RIVER, Fort Bend and Brazoria



Counties, TX. Following Hurricane Harvey in 2017 and the completion of a Meander Migration Study along the 140 miles of the Brazos River through Fort Bend County, our team was tasked with preparing a conceptual design at thirteen (13) sites for channel evolution and stability. Scope included coordination with the USACE Engineering Research and Development Center (ERDC) of a design using stone toe dikes and stone tie-backs to provide erosion protection. In accordance with USACE 1110-2-1601, Hydraulic Design of Flood Control Channels, we conducted a scour analysis and prepared a 2D HEC-RAS model, sized the erosion protection stone, computed the quantities of stone for erosion protection and launching of stone for underwater erosion protection. HEC-FDA was used for flood damage assessment.

LANTANA MASTER PLANNED COMMUNITY in Denton County, a 1,750-acre development that included more than 200 acres of nature preserve including lakes, wetlands, creeks, and recreational areas. Site design included engineering for all water transmission and distribution lines, wastewater collection and trunk sewers, drainage collection and street systems, potable water delivery system featuring a 600,000 gallon elevated storage tank, a two million gallon ground storage tank, a 6.5 mgd booster pump station and water lines sized from 8-inch to 48-inch. Various pipe and stream conveyance studies and FEMA floodplain studies were also performed.

SH-63 BRIDGE REPLACEMENT, Newton County, TX—Hydraulic design and river migration study for the SH-63 bridge replacement over the Sabine River. A large storm event in March 2016 caused significant scour and degradation to the existing 1,875 foot long bridge, located in an area prone to migration. Our study was performed using historical aerial imagery and GIS to select a stable location for the proposed bridge, which is being relocated to 1,700 feet downstream. A HEC-RAS 1D/2D model was used to model the Sabine River and an extensive floodplain area that extends over 3.5 miles wide. The model was used to size the proposed main bridge, relief bridges, and culverts and roadside ditches to meet no-rise conditions in the wide floodplain. RASMapper and GIS were utilized to analyze 2D model results.



SOUTHERN UNIVERSITY RAVINE AND RIVERBANK INSTABILITY EVALUATION Baton Rouge, LA, Provided evaluation of Mississippi River for USACE. Provided planning, hydrology, and hydraulics analyses to identify the origins and effects of storm and surface waters on significant erosion. A hydraulic evaluation of the area was conducted. To identify overland flow patterns and analyze flow paths into the ravine, A two dimensional HEC-RAS model was developed. Boundaries were set up based on the watershed boundaries and a flow boundary was introduced at the ravine outlet. An SCS Type III 100-year storm was then imposed upon a digital elevation model to develop drainage flow paths and a discharge value. The value was compared with the TR55 Type III 100-year storm and found to be slightly higher, so it was considered conservative. The flow was then imposed upon a HEC-RAS ravine model to determine flow stage and velocity parameters in the lower reach of the ravine.

I-10 CORRIDOR HYDROLOGY AND HYDRAULICS MODELING

HIGHLIGHTS: COMPLEX HYDROLOGY, COASTAL, RAIN-ON-GRID MODELING, 2D TUFLOW MODELING, LARGE-SCALE FLOODPLAIN MAPPING, GIS INTEGRATION, PYTHON AUTOMATION

Our team is preparing the IH-10 Corridor Modeling Study for the TxDOT Beaumont District, which will consist of a hydraulic analysis of the IH-10 corridor from the western edge of Chambers County to the Louisiana state line. The study encompasses 92 miles of roadway and approximately 52 bridge-class structures, encompassing the Trinity, Neches, and Sabine River basins. TUFLOW, a 2D rain-on-grid hydraulic model, is being used to assess the 3,200 square mile area and determine if IH-10 meets current TxDOT design criteria. In addition to an existing condition analysis, the project includes modeling the impacts of Tropical Storm Imelda, calibrating to available gage data from the event, and applying a new innovative Regional Extreme Storm Event Approach (RESEA) to assess resilience of the IH-10 corridor for storm events larger than typical design events. The RESEA uses a GIS-integrated Python tool to assess a rainfall annual maximum series from a specified region rather than a point location. Another major component of the project is modeling the hydraulic impacts of concrete median traffic barriers and determining their impact on flow crossing the transportation corridor. This study will provide the basis for determining potential projects in the Beaumont District to improve flood risk for drivers along the IH-10 corridor.



3. Geotechnical Design, Investigation and Analysis Experience

Our team is very familiar with the process of incorporating geotechnical data and analysis into our designs for civil works projects, since this is a requirement on nearly every relevant assignment that we undertake. Our team includes two geotechnical engineering firms, both of whom are well known to USACE and both of whom have worked with the JV team members on many occasions, ETTL Engineers & Consultants, Inc. and Eustis Engineering, LLC.

Eustis Engineering has engineering capabilities to fulfill the geotechnical requirements of any USACE civil works project. Eustis evaluates piles including estimates of vertical capacity for groups. They also perform lateral analyses of individual piles and pile groups using LPILE and GROUP. They perform settlement studies including estimates of settlement and time-rate of settlement with and without wick drains to enhance consolidation. Their capabilities extend to performance of deep-seated global stability analyses for structures (T-walls and I-walls) according to the standards of the Hurricane and Storm Damage Risk Reduction System Design Guidelines, Louisiana Flood Protection Design Guidelines, and the CPRA's Marsh Creation Design Guidelines, using Spencer's Method as coded in SLOP/W and the LMVD Method of Planes as coded in UPLIFT. These programs are also used for the design and verification of levees, reinforced embankments, revetments, channel slopes, and open excavations.

Eustis also has developed methodologies associated with the estimates of negative skin friction on pile foundations. These methods are the current state of practice. Two of Eustis' staff (Tom Stremlau, PE and James Hance, PE) are referenced in the USACE Hurricane and Storm Damage and Risk Reduction Design Guidelines. Eustis is also utilizing a numerical model program SIGMA/W in association with the rigorous settlement program Settle3. This has allowed them to perform stress-deformation analyses and soil-structure interaction evaluations, performed seepage analyses for evaluation of heave, uplift, and piping. They use EM 1110-2-1913, EM 1110-2-1901, and DNR 1110-1-400 for manual calculations that consider blanket theory. They also use DEEP/W for a computer model and typically compare the results of manual calculations to the SEP/W model as a quality assurance procedure.

Examples of our geotechnical partners relevant experience with Fort Worth District assignments includes:

- Timber Creek Recreation Design and Dallas Floodway Phase II Recreation and Access Design
- Fort Hood Dam Investigation, Fort Hood, TX
- Lake Tyler Dam Remediation and Improvement Investigation, Whitehouse, TX
- Cedar Creek Dam Investigation, Malakoff, TX
- Rochester Levee Project, Dallas, TX
- Lamar Levee Project, East Dallas, TX
- Hurricane Protection Alliance

4. Civil Engineering Experience

Both partner firms provide civil engineering as their primary design service and have been responsible for literally thousands of civil engineering projects that involved the use of GEOPAK, InRoads, Civil 3D and related software packages, with final construction documents delivered in AutoCAD. For our work on the \$4.8B Fort Worth Expansion program, we served as Land Development Engineer with responsibility for construction documents on over \$1B of civil design plans and specifications for infrastructure projects. Overall the program included planning, programming, design and construction phase services in connection with 1,000 acres of infill projects and 5,000 acres of greenfield development. We prepared over 150 design-build sets of construction documents in support of that effort. This included a significant of underground utilities projects, all of which required final plans and specifications, as follows: 94 miles of waterlines; 62 miles of gas lines; 71 miles of storm drain lines; 54 miles of sanitary sewers; plus over 50 miles of electrical and communications duct banks and parking for over 15,000 vehicles. On another more recent program, the SWF Southern Border Infrastructure Program for the 52 mile stretch of improvements in the Laredo 7 area, we used Civil3D for terrain modeling and excavation balance (cut and fill), RASTER image files with contour maps, and then incorporated these various layers of images into a consolidated files for use with plans profiles and other construction documents. Due to the size and locations of the various project teams, the design was completed on AutoCAD's BIM360, a cloud based design tool that allows the remotely located teams work on the files virtually with instantaneous updates allowing for seamless integration of the design teams. Both JV partner firms also worked with sub-consultant Michael Baker International on Laredo-7 as an integrated design team.

5. Environmental Analyses Experience

Conducting NEPA studies and developing NEPA documentation is at the forefront of the planning and project management work our team provides for various USACE clients. Our project managers that currently work as in-house consultant at the New Orleans District manage the delivery of these documents on a daily basis. Our program manager, Mr. Carson managed a large-scale feasibility study – Mississippi River Gulf Outlet (MRGO) Ecosystem Restoration Feasibility Study for the New Orleans District that required a detailed EIS, resulting in the award of a Record of Decision. This EIS required extensive coordination with multiple federal agencies, including the US Fish and Wildlife Service, National Marine Fisheries, Environmental Protection Agency, and National Resources Conservation Service. Additionally, Mr. Carson coordinated the details and path forward of the EIS through multiple NGO's including the Sierra Club, the Lake Pontchartrain Basin Foundation, and the Nature Conservancy.



For this team, we have added a highly reputable environmental firm to assist with the development of NEPA documentation, and for the collect of environmental field data in Vernadero, a veteran-owned small business (VOSB) that specializes in providing environmental consulting, planning, conservation and natural resources, and staffing support services exclusively to federal clients. Vernadero specialized in the following:

- ◆ Development of NEPA Documentation
- ◆ Surveying for special status, threatened, and endangered flora and fauna
- ◆ Performing natural resources assessments and biological monitoring
- ◆ Providing Endangered Species Act Section 7 consultation support
- ◆ Delineating wetlands and providing Clean Water Act permitting support
- ◆ Performing geographic information system (GIS) data gathering and mapping
- ◆ Preparing environmental baseline surveys, Environmental Condition of Property reports, and Environmental Site Assessments

Under a contract with USACE Louisville District, Vernadero prepared a Supplemental EA for a Local Training Area (LTA) for an off-site weapons storage area, formerly at Carswell Air Force Base, Fort Worth, Texas. An EA had previously been prepared and a Finding of No Significant Impact signed for the construction of an Armed Forces Reserve Center at the weapons storage area in July 2008, but the LTA had not been fully addressed. Vernadero's Supplemental EA supplemented the 2008 EA by addressing the establishment and operation of the LTA. The Supplemental EA analyzed the potential

H. ADDITIONAL INFORMATION (continued)

for environmental impacts relating to the establishment and use of an LTA. The proposed LTA provides an area for units stationed at the new Armed Forces Reserve Center to train and would provide a closer training location for nonresident units stationed at Naval Air Station Fort Worth Joint Reserve Base. The Supplemental EA was prepared in accordance with NEPA, Council on Environmental Quality Regulations, Environmental Analysis of Army Actions, and Army Regulation 200-1, Environmental Protection and Enhancement.



Working with USACE New Orleans District, Vernadero is providing two years of mitigation monitoring for the Jean Lafitte National Historical Park and Preserve Swamp Mitigation Project. Using airboats to access monitoring locations, their biologists gathered data that included the current condition of the swamp, its native and invasive plant species, cover composition, and wildlife utilization, and analyzed these data and provided recommendations to USACE for future action. In order to do this, they established eight permanent 0.10-acre monitoring plots with a 37.2-foot radius in two areas: Enhancement Area A and Enhancement Area B. To mark each plot, a polyvinyl chloride (PVC) schedule 40 pipe was installed at the center of each plot and an aluminum identification tag was affixed to the pipe. The location of this marker was recorded using a submeter GPS units to establish four 15-foot-radius circular plots (sampling circles) about 60 feet from the center of each permanent monitoring plot. Two permanent photo stations were then installed. Field monitoring was conducted in October 2020 and October 2021. For trees, data recorded included species; whether the species was native, nuisance, or invasive; and diameter at breast height (DBH); further, sufficiently large canopy trees were fitted with an aluminum tree tag. For plants in general, Vernadero recorded the plant species; number of plants of each species; whether the species was native, nuisance, or invasive; and DBH for woody species. Percent cover of living species was documented as well as native species, nuisance species, and invasive species for the canopy and midstory strata. Qualitative monitoring was conducted that recorded a number of observations, including general estimates of the average percent cover by native species in the canopy, midstory, and groundcover strata in each Enhancement Area; general condition of native plants in the canopy and midstory; trends in composition of plant communities; and wildlife utilization of the site; and potential problem areas/zones. The final deliverable was preparation a final monitoring report for the 2020 mitigation site monitoring, and they are currently developing the field report for the 2021 monitoring.

6. GIS, Land Surveying and Mapping Experience

Our JV employs in-house Registered Professional Land Surveyor (PLS) with over 40 survey personnel available for this contract in the AOR, supplemented by our sub-consultants **ARS Engineering Inc.**, with a total local staff of 34. We have survey teams available to perform site survey, topographic mapping, and construction staking. Our survey teams are experienced in providing these types of services for Federal customers. They understand the coordination requirements for site access and utility locations working at USACE managed lakes and properties. Our team is at the forefront of technology with in-house, robotic total stations, GPS, scanning and both quad-copter and fixed wing drones. We can provide aerial drone surveys, map preparation, GPS controls surveys, topographic surveys, construction staking, right-of-way and legal descriptions, ALTA/ACSM land title survey and GIS integration.

Our experienced survey crews have the knowledge to complete any field survey task accurately and efficiently. They have successfully completed literally thousands of survey projects in the AOR. Our in-house professional surveyors, technicians and field crews bring many years of relevant project experience to this assignment. Our technicians are proficient in the translation of field data into multiple CADD formats, routinely using MicroStation V8i SS4, GEOPAK V8i, AutoCAD Civil3D 2021 and Carlson Survey 2021, and are well-versed in creating DTM and TIN files and using LandXML to convert between software formats. Our surveyors also have extensive cadastral surveying experience, including the Geographic Coordinate Data Base (GCDB) and Public Land Survey System (PLSS). Survey-based GIS allows highly accurate land record mapping and provides ground control for custom aerial imagery projects. Mobile Laser Scanning, Geodetic, Engineering, Monitoring, GPS and transportation throughout the AOR. They are a forward thinking firm which is on the forefront of all the latest surveying technologies including unmanned with survey grade LiDAR and photogrammetry and Unmanned Hydrographic Vessels.

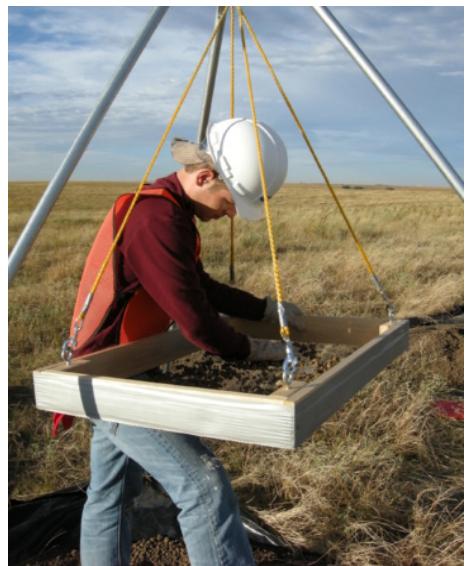
7. Cultural Resources Experience

For cultural resources management we have retained the firm of **R. Christopher Goodwin & Associates (RCG&A)** as a sub-consultant. RCG&A has a long and exceptional record of successful cultural resources projects with USACE, having successfully completed over 300 projects for 15 USACE District offices, including Fort Worth, Albuquerque, Tulsa, Kansas City, Omaha, New Orleans, St. Louis, Memphis, Vicksburg, Nashville, Jacksonville, Savannah, Baltimore, Philadelphia, and Pittsburgh. The firm maintains excellent working relationships with the relevant state historic preservation authorities, including the Louisiana Office of Cultural Development, Division of Historic Preservation, and Division of Archaeology,

H. ADDITIONAL INFORMATION (continued)

the Texas Historical Commission, and the Oklahoma Historical Society. They are familiar with current SHPO regulatory guidance in all states within the SWD. Relevant experience in the AOR includes:

FORT WORTH DISTRICT: Conducted an extensive Phase I archaeological survey and a Phase II archaeological site evaluation at Pine Creek Lake in McCurtain County, OK. Also conducted archaeological evaluations at Fort Hood, TX, and thorough preparation and fabrication of a scale model of the Reynolds house, a 1915 home at Fort Hood pre-dating the establishment of that military installation. Wrote the Phase II archaeological evaluation reports for the extensive testing program at Fort Hood. Currently serving as lead cultural resources contractor for the Lamar Levee program, part of the Dallas Floodway Extension project.



NEW ORLEANS DISTRICT—Maintains a 37-year record of service to USACE/MVN during which time the firm has authored and submitted over 200 reports for task order projects. USACE work in the New Orleans area includes such noteworthy projects as underwater data recovery of the steamship Kentucky in the Red River near Bossier City, LA for Vicksburg District.

TULSA DISTRICT—Engaged at Fort Sill since 2009 during which time the firm has conducted cultural resources surveys of more than 7,900 acres, evaluated nearly 125 archaeological sites, facilitated Native American consultation, and performed geoarchaeological testing, cemetery delineations, curation needs assessments, and architectural services including survey, evaluation, National Register of Historic Places nominations. Also authored Fort Sill's ICRMP.

8. Construction Cost Estimating Experience

Project success requires accurate construction cost estimating. MHZ, and our in-house cost estimating staff, understands how to prepare highly detailed and accurate cost estimates using MII software. Our USACE IDC experience includes preparing current working estimates at each design submittal, which is based on the current stage of design. Final estimates are prepared based on the CLIN schedule in which the project is to be advertised. Our cost estimators use their professional judgment, historical data, experience and market research to determine fair and reasonable costs of equipment, material, labor, area cost factors and other expenses related to the construction. When necessary we provide additional backup data and other lower level cost information in other formats such as Excel.

We have experience in preparing estimates in accordance with USACE instructions, regulations, and manuals for cost estimates as contained in ER 1110-2-1302, and TM 5-800-4 and in compliance with EFARS 36.2. Our estimators develop costs using the latest standards and resources including the Tri-Services Automated Cost Estimating System, MII, the MII Cost Book databases, commercial cost book databases, PAX newsletters, Davis-Bacon wage as minimum values, commercially available reports, and local site specific sources.

Traditionally, our construction cost estimates for planning and budgeting purposes for projects in the 0 - 15% stages are prepared utilizing the parametric software, PACES, we then work with USACE in summarizing the costs in the PCCost software for planning and budgeting purposes. Even at this early stage, we research the area cost factors, adjustments and scrutinize the contingencies to ensure the project receives adequate funding. As part of our approach to develop accurate cost estimates, our team will involve the cost estimators in the initial project stages - from schematic and charrette facilitation to design development, construction documents, and value engineering.

Our Lead Cost Estimator, Mr. Daigle has over 30 years of experience and has prepared cost estimates on all our USACE IDCs including the current tasks for Fort Worth District. Mr. Daigle is a Certified Professional Estimator and Certified Value Specialist. He has spent his career providing cost engineering for major horizontal and civil works construction projects including levees, walls, roads, bridges, fences, gates and roads. Mr. Daigle started his career managing a construction firm and relied on his construction estimates to make a profit. He established his cost expertise by fine-tuning estimates and building a working database. As Lead Cost Estimator, Mr. Daigle continues to think about cost estimating from a construction point of view and has extensive training in MCACES cost estimates for government clients. Mr. Daigle received his 2nd generation MCACES certified training from the USACE recognized MII expert, Ms. Janice Folkers at Michael Baker International. Mr. Daigle has provided MII and PACES cost estimates for projects ranging in size from under \$1M to projects larger than \$100M. He will be supported by the **Michael Baker's** Cost Engineer, Rod Louison, who is an expert with nearly a decade of use in MII software and over 40 years of preparing cost estimates, including over 50 for USACE Fort Worth District.

Proactive Cost Estimating

Recently, MSMM was tasked by USACE with design for three projects within the Infrastructure program in East Baton Rouge Parish. The three projects included a levee system, a force main and a pump station; all designed separately, inclusive of separate plans, specs, design analysis and construction cost estimates. Following the 65% design and MII estimate submittal, USACE requested MSMM combine the three projects into one construction contract after MSMM's Cost Estimator, Mr. Daigle identified that bidding the project as three separate packages created a high overall project cost which exceeded the construction cost limitation. Being proactive, Mr. Daigle visited the site and met with local construction contractors about impacts of performing the project as one design package. He reworked the MII estimates into one package and worked with USACE cost estimating branch to fine-tune the multipliers and subcontract markups based on his research. Mr. Daigle worked with the MSMM design team to develop several value engineering solutions to the combined package to help reduce the overall project cost. Following production of the combined package, the gap of available cost was reduced significantly, and MSMM further reduced the cost by recommending the appropriate construction contractor pool versus the use of an 8(a) sole source contractor. The USACE infrastructure project was constructed within the budget established by Mr. Daigle.

9. Technical Review Experience

One of the advantages of our multi-faceted teaming approach is that one or the other of the Joint Venture partners will be able to play the quality control role in connection with the design work of the other partner. This is exactly what we did on the Dallas Floodway Extension Phase II task orders (Project #2 in Section F) and the Texas City Floodwall Replacement task order (Project #3 in Section F), in which the role of the HZ staff was to perform ITR quality checks on the work of MSMM engineers. On our work for SWF at Fort Bliss as Land Development Engineer we provided independent technical review of the design-build teams' work on over 100 different design-build contracts for which we prepared the RFP. An example of our technical review experience on a civil works project is our recent review of the Texas City Hurricane Flood Protection Levee system for Galveston County to analyze whether the designs met the requirements of 44 CFR Section 65.10 of the National Flood Insurance Program (NFIP) regulations for FEMA levee certification.



10. Environmental Planning Experience

Through decades of experience providing plan formulation services to USACE, our team has excellent qualifications and experience in all types of USACE studies and reports, including Feasibility Studies, Post-Authorization Studies, Design Documentation Reports, and NEPA documents. We use planning criteria to develop alternatives and carry them forward through the completion of feasibility-phase efforts and have participated in numerous study milestones at Division and HQ levels, many of which have led to Chief's Reports. We have the proven ability to assist the Fort Worth District in formulating, evaluating, screening, selecting, and documenting alternatives and defensible decisions for review by HQ and the Review Boards. We have experience providing services for several 3x3x3 planning studies in the past couple of years, and overall our project management professionals have led the development and completion of multiple feasibility studies that fall under the categories of flood risk reduction, ecosystem restoration and navigation.

Additionally, team member **Tetra Tech** has extensive experience with the most critical aspects of plan formulation, including:

- ◆ Risk-informed, decision-focused planning using risk and uncertainty analyses to assess the variability in hydrologic and hydraulic conditions, environmental conditions, project performance, and economic risks and lately has incorporated variability in climate, market, and client conditions
- ◆ Cost Effectiveness/Incremental Cost Analysis to support plan evaluation, comparison, and selection for the analysis of separable elements
- ◆ Cost allocation to determine costs across multiple project purposes and cost apportionment between federal and non-federal entities
- ◆ Evaluation of all four accounts: NED, RSE, OSE, and EQ
- ◆ Optimization of benefits and trade-off analysis to assess project outputs for multi-purpose projects

Tetra Tech is knowledgeable of and experienced with all requirements for environmental/ecosystem restoration plan formulation, planning, and design, as well as cost-sharing and cost allocation requirements. They have been Engineering with Nature for more than 25 years, and have proven knowledge and experience working with USACE on Section 206 and 1135 ecosystem restoration projects. The completion of these projects gives them the ability to combine engineering and ecological expertise as well as facilitate public support and effectively collaborate with the District's customers, federal, state, and local agencies, and other stakeholders.

H. ADDITIONAL INFORMATION (continued)

Recent Tetra Tech Shoreline Protection and Environmental and Ecosystem Restoration projects for USACE include:

- ◆ Concord, North Carolina Section 206 Ecosystem Restoration Report, USACE Wilmington District
- ◆ Neuse Streams, Estuary and Oyster Reef Restoration, Neuse River Basin, USACE Wilmington District
- ◆ Longwood Cove, Georgia Section 1135 ERR, USACE Mobile District
- ◆ Shoal Creek, Georgia Section 206 ERR, USACE Mobile District
- ◆ Beaver Ruin, Georgia Section 206 ERR, USACE Savannah District
- ◆ Mill Creek, Georgia Section 206 ERR, USACE Savannah District
- ◆ Barataria/Plaquemines Shoreline Complex Project (Chaland Headland and Pelican Island, Louisiana), US Department of Commerce, NOAA
- ◆ Large-Scale Coral Reef Restoration Projects at the Columbus Iselin, Fortuna Reefer, Margara, and Wellwood Grounding Sites, USDOC and NOAA
- ◆ Seagrass Restoration Plan/Programmatic EIS and Grounding Site Restoration Projects, US Department of the Interior, National Park Service
- ◆ Coral Reef Restoration Plan/Programmatic Environmental Impact Statement and Grounding Site Restoration Projects, US Department of the Interior, National Park Service
- ◆ Condado Lagoon Seagrass Restoration, USEPA, San Juan Bay Estuary Program
- ◆ Jensen Beach Boat Ramp and Seagrass Restoration/Monitoring Project, Martin County, Florida
- ◆ Seagrass Restoration, Biscayne Bay, Florida, US Department of the Interior, National Park Service
- ◆ Seagrass Restoration, Everglades National Park, US Department of the Interior, National Park Service
- ◆ Rabbit Island Marsh Restoration, Calcasieu Parish, Louisiana



11. Planning and Project Management Experience

Our JV team members are currently providing the USACE New Orleans District with program and project management support on their major civil works programs. Our program and project management support is related to flood risk management, environmental/ecosystem restoration, erosion control and water supply on the following District led programs: Mississippi River and Tributaries (MR&T) construction and mitigation program, Mississippi River Levee Construction (MRL-C), Mississippi River Levees Investigations Account (MRL-I), Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA), Continuing Authorities Program, and Floodplain Management Services Program (FPMS).

Our project managers are currently providing USACE expert level analysis and project management consulting services to manage these programs. These services include the development and implementation of systems and metrics to gauge project and program performance (quality, schedule, budget, safety, acquisition planning, etc.) during all phases of the program. Managing the development of plans and specifications for E&D level projects, managing PDT teams and delivering milestone reports for planning/feasibility studies and establishing and managing systems to track total project costs and current project schedules for construction projects and programs. Our staff sit in the District and provide weekly assessments and reports to MVN on program execution relative to required metrics. Furnishing data and participating in presentations related to program and project management including Project Review Board (PRB) meetings, Business Line meetings, Vertical Team meetings, Executive Board meetings and other related presentations is the responsibility of our staff. We also provide programmatic schedule management and oversight of these Programs utilizing Oracle-Primavera software systems.

We have used numerous construction and project management tools throughout our USACE experience. We typically share our project data with our USACE customer and team members through data management systems such as Newforma and ProjectWise. Our program management and construction field personnel include master schedulers proficient in the use of Primavera P6 to support the construction and program management tasks and reporting for major USACE programs.

In our construction phase assignments with USACE, we typically track daily job activities in RMS, especially in the field reporting. Contract communications strategies include bi-weekly scheduled conference calls with team members to discuss progress, schedule compliance, and remedial actions required, if necessary. We have focused on using commonly available software systems that make it easy to share data and to collaborate with the government staff and its customer agencies.

H. ADDITIONAL INFORMATION (continued)

When providing the various reports, we typically produce:

- ◆ Program-Level Quarterly Reports—quarterly reports to CO on state of the contract
- ◆ Project Records—Compilation of project reports as defined in each PMP
- ◆ Meeting Minutes—Minutes are collected in standard format and distributed to attendees
- ◆ Daily Reports—On-site observation reporting in RMS
- ◆ Weekly Reports—Consolidation activities of project execution
- ◆ Monthly Reports—Achievements of past month and look-ahead for the next month typically submitted with invoices to District Project Managers

12. Economic Analyses Experience

Team Member **Tetra Tech** offers a highly qualified and experienced group of economists for Federal water resources planning evaluations. The Tetra Tech economics team has extensive experience in conducting and managing complex federal economic analyses for USACE, Federal Emergency Management Agency, Natural Resources Conservation Service, Department of Housing and Urban Development, and Bureau of Reclamation. Their economists understand and have applied experience with plan formulation and economic analysis procedures consistent with the Principles and Guidelines for Water Resources and Related Land Implementation Studies as amended and associated implementation guidance, regulations, and procedures of USACE. They have recent experience applying the new Principles, Requirements and Guidelines for Water Resources and Related Land Implementation Studies which are fully adopted by NRCS and have extensive experience incorporating Economic (NED and RED), Social, and Environmental benefit assessments into the plan formulation and justification process.

The Tetra Tech economics team has extensive experience with risk-based flood damage reduction modeling for USACE, FEMA, and NRCS studies, including many projects where HEC-FDA was applied. HEC-FDA provides as statistical measures both economic output in terms of annualized damages reduced (benefits) and project performance in terms of probability of damage for a specific event or over a certain period. Tetra Tech has experience running HEC-FDA for evaluating levee project performance for both existing and future with project conditions, including documentation of risk in terms of assurance, long-term risk, and residual risk. In addition, the economics team has full knowledge of how to integrate outputs of hydrologic, hydraulic, geotechnical, and ecosystem output data in coordination with engineering and environmental staff to perform complete life cycle economic analyses.

The team utilizes the latest in data development technology, with staff skilled in using Geographical Information Systems (GIS) to efficiently collect, analyze, interface with USACE models, and communicate information for visualization of areas at risk, damages, and benefits of alternative plans. Tetra Tech also maintains a team of survey research professionals with experience in development and implementation of OMB-approved survey instruments for data collection when required.

13. Water Resources Planning Experience

Effectively addressing watershed and water quality problems requires a thorough understanding of the nature of the problem, the key pollutant sources, and the likely effectiveness of the potential solutions. Many pollution problems are complex, with sources of pollutants ranging from agricultural row crops and livestock operations to failing septic systems, urban stormwater, CSOs and wastewater treatment plants. Our team has a deep history of applying models to address these issues, including SWAT, HSPF, EFDC, CE-QUAL-W2, HEC-RAS, and ACPF to study pollutants such as sediment, ammonia, chlorophyll a, copper, dissolved oxygen, E. coli, fecal coliform, nitrogen, phosphorus, temperature, and zinc. These modeling projects have supported a variety of projects such as AOC management plans, total maximum daily loads, Section 319 nine-element plans, beach closure forecasts, facility improvement plans, stormwater plans, use attainability analyses, and pollutant trading.

We're a leader in modeling for TMDLs, and we take pride in our unbiased selection and application of public domain models, including SWMM, HSPF, GWLF, SWAT, GLEAMS, WASP, CE-QUAL-W2, QUAL2E, RIV-1, BATHTUB, BASINS, and PHOSMOD. We are an innovator on many modeling fronts, having developed comprehensive environmental assessment and integrated modeling systems such as EPA's Better Assessment Science Integrating Point and Nonpoint Sources (BASINS), Watershed Characterization System (WCS), and the TMDL Toolbox; state-of-the-art hydrodynamic and water quality models such as Environmental Fluid Dynamics Code (EFDC) and Loading Simulation Program in C++ (LSPC); and issue-specific modeling tools such as Mining Data Analysis System (MDAS) and the BMP Evaluation Tool. We have experience developing graphical user interfaces for HSPF, QUAL2E, EFDC, SWMM, GLEAMS, SWAT, and GWLF. We're currently developing a modeling toolbox to facilitate data sharing and communications among models, including EFDC, LSPC, WAM, WASP, and new watershed models such as sediment budget and mercury load models.

H. ADDITIONAL INFORMATION (continued)

Team member **Tetra Tech** has extensive experience performing groundwater investigations, including water supply development, water quality assessments, soil and hydrogeologic characterizations, groundwater treatment implementation, production and monitoring well installation, aquifer testing and parameter estimation, well optimization, contaminant plume delineation, containment, and remediation, contaminant fate and transport analysis, heat and variable density groundwater flow and transport analysis, and isotopic and geochemical environmental forensics. The groundwater modeling they have performed has been calibrated with well water-level, chemical sampling, and pumping data, as well as water utility production records and streamflow discharge and chemical sampling data. In performing these analyses a variety of groundwater computer software has been used including MODFLOW, MODPATH, ZONEBUDGET, MT3D, RAND3D, AQTESOLV, PHREEQC, NETPATH, WATEQ, SUTRA, SEAWAT, PEST, UCODE, SESOIL, HELP, FEMWATER, AND HST3D models.

Tetra Tech's hydrogeologists have decades of experience in simulating groundwater flow and fate and transport of contaminants through particle tracking (e.g., MODPATH), capture zone analysis, and solute transport modeling. Tetra Tech (formerly GeoTrans) wrote the US EPA guidance document on evaluating capture zones from remedial pump and treat systems. This document is the industry standard on capture zone analysis and is typically used on Five-Year Reviews of Superfund (CERCLA) sites.

14. Public Information Experience

This is a service that we typically provide on high profile public sector programs, including the development of communications plans, both internal and external; coordination with media and development of web-based tools, such as project websites, for gathering and disseminating information to the public; organizing and conducting public meetings with stakeholder groups, both person-to-person and virtual, including phone surveys; documenting the results of these contacts with the public; and adapting policy recommendations to take important social considerations into account.

Our in-house planning team regularly does this for major visioning assignments for public or quasi-public agencies. We are currently involved in a highly controversial project, the Texas Border Wall, for which the Texas Facilities Commission has engaged us to perform the Public Information service with affected land owners along the Texas-Mexico border. As a review of Project #5 in Section F, the Greater Houston Flood Mitigation Consortium program, will show, we have recently performed this service in connection with developing long-range plans for flood avoidance in the hurricane-prone watersheds of Harris County. Our in-house staff includes bi-lingual professionals, and we are capable of conducting public meetings in either English or Spanish.

Additional related experience with government agency programs in which public input was sought, developed, and aggregated as a part of the criteria for the program, is as follows:

MRGO ECOSYSTEM RESTORATION PLAN FEASIBILITY STUDY: Our program manager Mr. Carson led this \$15M feasibility study for USACE MVN that required extensive public outreach, including multiple stakeholder meetings, the development of a physical model, and regular news media updates and interviews. Mr. Carson presented at all public meetings and was tasked with providing detailed public explanation of the physical model.

NORTH HOUSTON LIVABLE CENTERS STUDY, Houston-Galveston Area Council (H-GAC), a study to optimize the development of the area bounded by Rankin Street to the north, Hardy Road to the east, Beltway 8 to the south, and IH45 to the west. Recommendations included a new transit center and a new central park that will reduce flooding while creating critical recreational space for families, and a housing strategy dealing with the relocation of residents living in highly flood prone areas. Stakeholders attending public meetings included METRO, City of Houston, Harris County Flood Control District, and private landowners and developers.

BEYOND THE BAYOUS, Houston Parks Board, a study done for a city-affiliated non-profit involved a complex analysis of needs and opportunities resulting from the Bayou Greenway 2020 plan, including population density, employment nodes, transit hubs, concentrations of poverty, utility availability and capacity. Through public workshops with the Board, the team developed a plan outlining a series of projects, many of which have been adopted in capital plans of area management districts and TIRZs, as well as the Parks Board.

(b) PROFESSIONAL QUALIFICATIONS

As a sign of the priority we place on this assignment, we are proposing an extremely experienced design team of technical experts. All proposed key discipline leaders have at least 10 years of experience in the proposed role, and the average level of total experience among all 28 personnel listed in Section E is over 27 years of experience. Individually, they have worked for their present firm an average of over 12 years. In addition, the proposed team has extensive experience with USACE in the Southwestern Division AOR. Of note, 19 of the key personnel are employed by the MHZ JV and 24 are located in either Texas or Louisiana. Please refer to the table below for a summary of the qualifications of the key personnel.

H. ADDITIONAL INFORMATION (continued)

Personnel Role	Firm	Location	Education	Reg.	Training/ Certifications	Yrs Exp	Yrs w/ Firm
Josh Carson Program Manager	MHZ	LA	MS, BS			15	8
Scott Chehardy Project Manager	MHZ	TX	BS	PE		26	8
Rob Armstrong Project Manager	MHZ	TX	BS	PE	CFM	35	17
Jim Wilson Civil Engineer	MHZ	LA	BS	PE	LEED AP	33	9
Mike De Leon Civil Engineer	MHZ	TX	BS	PE		24	15
Bob Yokum Structural Engineer	MHZ	LA	MS, BS	PE		41	10
William Wallace Structural Engineer	MHZ	TX	MS, BS	PE	SECB, NCEES, MLSE	42	11
Steve Finegan Architect	MHZ	LA	MS, BS	RA	AIA	34	5
Bill Hoelscher Architect	MHZ	TX	M. Arch, BA	RA	LEED AP	33	21
Harry Hawney Electrical Engineer	MHZ	TX	B. Eng, MBA	PE		44	11
Scott Parma Electrical Engineer	MHZ	TX	BS	PE	LEED AP	40	17
Jeff Wilson Mechanical Engineer	MHZ	TX	BS, BA	PE	LEED AP	17	17
Will Krasner Mechanical Engineer	MHZ	TX	MS, BS	PE		19	7
Chris Scott Landscape Architect	MHZ	TX	BA	RLA	ASLA, LEED AP, CNU-A	31	14
Stephen Richards Geotechnical Engineer	ETTL	TX	BS	PE		50	31
Manish Mardia Environmental Engineer	MHZ	LA	MS, BS	PE		27	10
Saumya Sarkar Registered Environmental Engineer	TetraTech	TX	MS, BS	PE		11	11
Allison Woods Hydrologic/Hydraulic Engineer	MHZ	TX	BS	PE	CFM, LEED GA	6	6
Josh Carter Hydrologic/Hydraulic Engineer	Mott Mac.	TX	MS, BS	PE, DCE		21	19
Janice McLean Archeologist	RCGA	KS	MA	RPA		28	15
Dustin Davison Land Surveyor	ARS	TX	BS, AAS	RPLS		30	5
Don Daigle Cost Estimator or Cost Engineer	MHZ	TX	AAS	CVS, CPE		37	5
Zachary Steinkuhler GIS Specialist	MHZ	TX	B. Arch	PE	CFM	10	10
Christof Spieler Public Information Specialist	MHZ	TX	MS, BS	PE	LEED AP, AICP	21	13
James Carney Economist	TetraTech	WA	MBA, MS, BA			13	13
Eric Webb Biologist	Vernadero	LA	PhD, MS, BS			26	5
Glen Wallace Hydrogeologist	Mott Mac	WA	PhD, MS, BS	LHG, RG		16	16
Ramesh Kalvakaalva Certified Value Specialist	Neelu	GA	PhD, MS, BS	PE, CVS		31	11

(c) PAST PERFORMANCE

The MHZ Team is committed to delivering cost efficient, on schedule and high-quality work for this IDIQ. In total, our team has a combined 364 “Exceptional” and “Very Good” past performance ratings on Federal IDIQ contracts. This proven history will provide USACE SWF with assurance of high quality and low risk performance on all anticipated types of work for this contract. The two firms making up the MHZ JV believe in providing quality professional services with utmost responsiveness. This has garnered many accolades and repeat calls for service from clients. We have an enviable performance history, especially USACE Districts across the SWD. Our outstanding record is a result of our demonstrated ability to control project costs, provide high quality technical products, and meet project schedules for many concurrent government contracts. Included to the right is a table summarizing the CPARS rating received on the projects identified in Section F.

H. ADDITIONAL INFORMATION (continued)

Our recent performance on USACE Civil Works assignments is best exemplified by our support of the USACE Hurricane Protection Office in New Orleans for the reconstruction and renovation of existing horizontal infrastructure after the Hurricane Katrina event. On this high visibility, schedule-driven \$60 M IDC program, we performed over 60 task orders. Our team was recognized by USACE with a combined ACASS rating over all tasks of 75% Exceptional rating with remainder Good or Satisfactory.

Project	Contract Number	Task Order Number	CPARS Rating	Overall Rating	POC/Contact Number:
Design-Build RFP Development: 277K Levee Raise and Delta Pump Station	W9126G-16-D-0017	W9126G20F0033	No Rating To Date	N/A	Sandra Allen 817-886-1669
Dallas Floodway Extension Phase II Recreation and Access Design	W9126G-16-D-0017	W9126G18F0286	✓	Very Good	Vandi Leheny 817-886-1563
Texas City and Vicinity Hurricane Flood Protection Project – I-Wall to T-Wall Conversion	W9126G-16-D-0017	W9126G19F0031	✓	Very Good	Kalli Egan-Clark 469-367-6036
Cow Bayou Drainage Pump Station Complex	W9126G-16-D-0017	W912P819F025	No Rating To Date	N/A	Charlie Brandstetter 504-862-2501
Greater Houston Flood Mitigation Consortium	Non-Fed	Non-Fed	No Rating – PPQ Available	N/A	Elizabeth Love 713-238-8100
Granger Lake Management Office Building Design	W9126G-16-D-0017	W9126G18F0322	✓	Satisfactory	Vandi Leheny 817-886-1563
Ascension Parish Environmental Infrastructure Sewer Treatment Plant Design	W912P819D0011	W912P819F0250	No Rating – PPQ Available	N/A	Nick Sims 225-603-3753
Short Circuit and Arc Flash Analyses	W9126G-11-D-0004				Eddie Lippe 254-622-3332

MSMM-HZ USACE TESTIMONIAL

Dallas Floodway Extension Phase II Recreation and Access Design

“MSMM Engineering continuously and repeatedly meets and beats schedule, even with the delay in schedule due to weather (act of God). The firm adjusts and continues to adjust to circumstances out of their control.”

– Kolawole Anifowoshe – Design Manager USACE Ft. Worth District.

Texas City and Vicinity Hurricane Flood Protection Project I-Wall Repair

“The A-E Project Manager has done a very good job to anticipate Government needs and proactively work them in advance of an issue. When logistical challenges presented themselves due to construction of a project on an adjacent site, the A-E proactively worked options for the Government to make key decisions related to completion of this design.”

– Kalli Clark-Egan, PE – COR USACE Galveston District.

MSSC Red River Army Depot

“H-Z provided outstanding service to the support of construction for this critical facility at RRAD. They were always willing to go the extra mile to assist in getting the project complete and ready to use.”

– Lynn Ray, SWF Program Manager

In addition, we have received letters of commendation for our efforts working with USACE on various civil works projects. See the letter regarding MSMMs performance for the New Orleans district on the next page.



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
7400 LEAKE AVENUE
NEW ORLEANS, LOUISIANA 70118

DEC 01 2016

Programs and Project Management Division
Projects and Restoration Branch

MSMM Engineering, LLC
4640 South Carrollton Avenue, Suite 220
New Orleans, Louisiana 70119

To Whom It May Concern:

This letter is written to commend the exceptional past performance history of MSMM Engineering, LLC (MSMM). MSMM has been a vital asset to the U.S. Army Corps of Engineers, New Orleans District (MVN), Projects and Restoration Branch. The professionalism, responsiveness, and quality performance has positioned MVN to complete a wide range of many challenging and mission critical projects throughout various stages of the Civil Works process. Given their consistent and effective delivery of assigned task, MSMM is one of the top performing small business Architect-Engineering firms within MVN.

MSMM leadership and staff are customer oriented and driven to succeed irrespective of the task. MSMM consistently completes all assignments within the allotted schedule and budget. They have supported the development and delivery of projects across various MVN programs that includes but is not limited to the Flood Risk Management, Environmental Infrastructure, Planning Assistance to States, Floodplain Management Services, and Continuing Authorities Programs. In addition, their design expertise with levees, floodwalls, water and sewer pump stations has supported the development of sound engineering solutions.

I certainly recommend utilizing this firm to support future needs within Civil Works. Please feel free to contact me at, (504) 862-1674 if additional information is required concerning work performed by MSMM for MVN.

Thanks,

Durund F. Elzey
Senior Project Manager
Projects and Restoration Branch

(d) CAPACITY

TEAM CAPACITY	
Project Managers	59
Civil Engineers	1904
Structural Engineers	274
Architects	253
Electrical Engineers	174
Mechanical Engineers	163
Landscape Architects	9
Geotechnical Engineers	83
Environmental Engineers	617
Hydrologic/Hydraulic Engineers	94
Archaeologist	41
Land Surveyor's	215
GIS Specialists	66
Public Information Specialists	8
Economist	1
Biologist	9
Hydrogeologist	4
Certified Value Specialists	13

Our Joint Venture has proven to be efficient and comfortable handling concurrent task orders over the geographic area covered by this solicitation. We have office coverage across every state in the AOR and are extremely experienced delivering projects anywhere within the Southwestern Division, as we have executed literally thousands of projects throughout your AOR. Each partner firm has recently executed more than three (3) task orders at a time for SWF. Prior to completing a couple of task orders last year, MSMM was executing four concurrent task orders for SWF on the current Civil Works Small Business contract, with three of the four task orders exceeding \$1M in fee. Similarly, Huitt-Zollars currently has three open task orders under IDIQ's with Fort Worth District, all within the Southwest Division AOR, as well as additional task orders with San Francisco District, Tulsa District, and Baltimore District. Each of the mentioned HZ task orders exceeds \$300K in fee.

In developing our team to respond to this solicitation we identified key areas such as Survey, Geotechnical Capability, Environmental Capability and H&H capability as key areas to duplicate as we envision several project assignments across the entire SWF AOR that will involve these specialty services. Fortunately, through our extensive Federal design history, we have worked with all of these subs on previous task orders, providing the same services. Duplicating team members in these areas, allows the JV leadership to rapidly respond to requests, saving USACE time and money. For example, field services such as survey and geotechnical exploration require the use of equipment that relies on favorable field conditions and a quick response time to maintain project schedules. In addition, below shows recent task order in which our team performed on the SWF Civil Works contract showing we executed 5 contracts exceeding \$1M in fee at the same time.

Task Order	Fee	2018				2019				2020				2021			
		Q1	Q2	Q3	Q4												
Granger Lake Management Office Building Design	\$350K																
Dallas Floodway Extension Recreation & Bridge Design	\$422K																
Cow Bayou Drainage Pump Station Complex Design	\$1.3M																
277K Levee Raise and Delta Pump Station	\$1.2M																
Hurricane Flood Protection Project, I-Wall to T-Wall Conversion	\$1.8M																
Environmental Infrastructure Sewer Treatment Plant	\$1.5M																

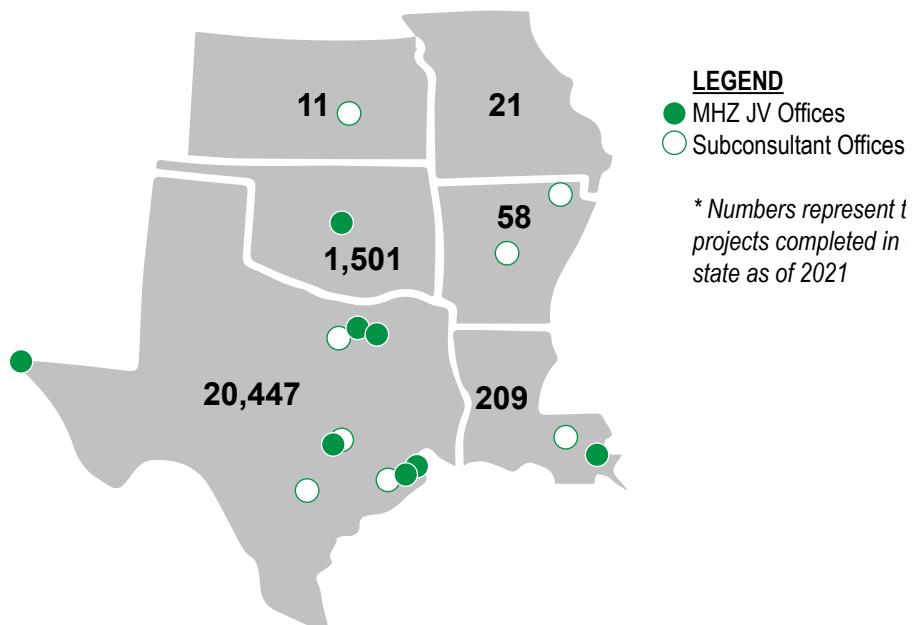
(e) KNOWLEDGE OF LOCALITY

All team members have had long standing business operations in Texas, Louisiana, and surrounding states. Most of the staff members of our team have received their academic degrees and professional experience working in the unique terrain across these regions. Therefore, we have an intimate knowledge of the above ground terrain, subsurface conditions, coastal and water resource characteristics, and disaster mitigation and recovery of this region.

We are well versed in providing quality design given the unique geographical nature of the local areas and given the high groundwater table and poor soil quality, we know that geotechnical engineering and materials testing is of the upmost importance when designing projects that involve life safety. Given the importance we have added two of the best Geotechnical Firms in Texas and Louisiana to the team in ETTL and Eustis to ensure our geotechnical design exceeds USACE standards.

Additionally, our lead surveying firm: ARS Survey has extensive experience working for the Fort Worth District. All of the ARS supervisors and Party Chiefs are natives of Texas. They have a thorough knowledge of where all access points and control points are located throughout the state. This familiarity of the survey areas enables their crews to quickly locate survey controls, and more likely to get accurate data. Trusting the initial project survey leads to the start of a successful project.

This team was carefully created to encompass the breadth and depth of expertise requested by the solicitation. This is evident from the vast array of USACE projects completed by team members located within the Fort Worth District footprint. The capacity to accomplish the requested work as requested in this solicitation is further enhanced when considering the number of offices our team offers within the project footprint. The landscapes covered by the boundaries of the Southwestern Division AOR offers a unique set of physical and environmental conditions that must be considered when undertaking project planning and design. This team has over 1,000 professionals located in the AOR of the SWF, that have lived and worked in this geographic setting for many years on both public and private client projects and are comfortable and confident designing projects in this area. Please reference the following map showing the number of office locations of the JV and our team members located within the AOR.



(f) GEOGRAPHIC PROXIMITY

Refer to map in (e) above for locations of offices.

(g) VOLUME OF DOD CONTRACT AWARDS

Below is the table of awards for the JV as well as MSMM. Huitt-Zollars does not have any prime awards within the last 12 months.

Project Name	Agency	Contract	Amount	Date
MHZ				
Minimum Guarantee	USACE Tulsa District	W9126BV20D0027	\$2500	October 2020
MSMM				
East Baton Rouge Flood Risk Management PM Services	USACE New Orleans District	W912P821F0182	\$492,226.25	July 2021

H. ADDITIONAL INFORMATION (continued)

I. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

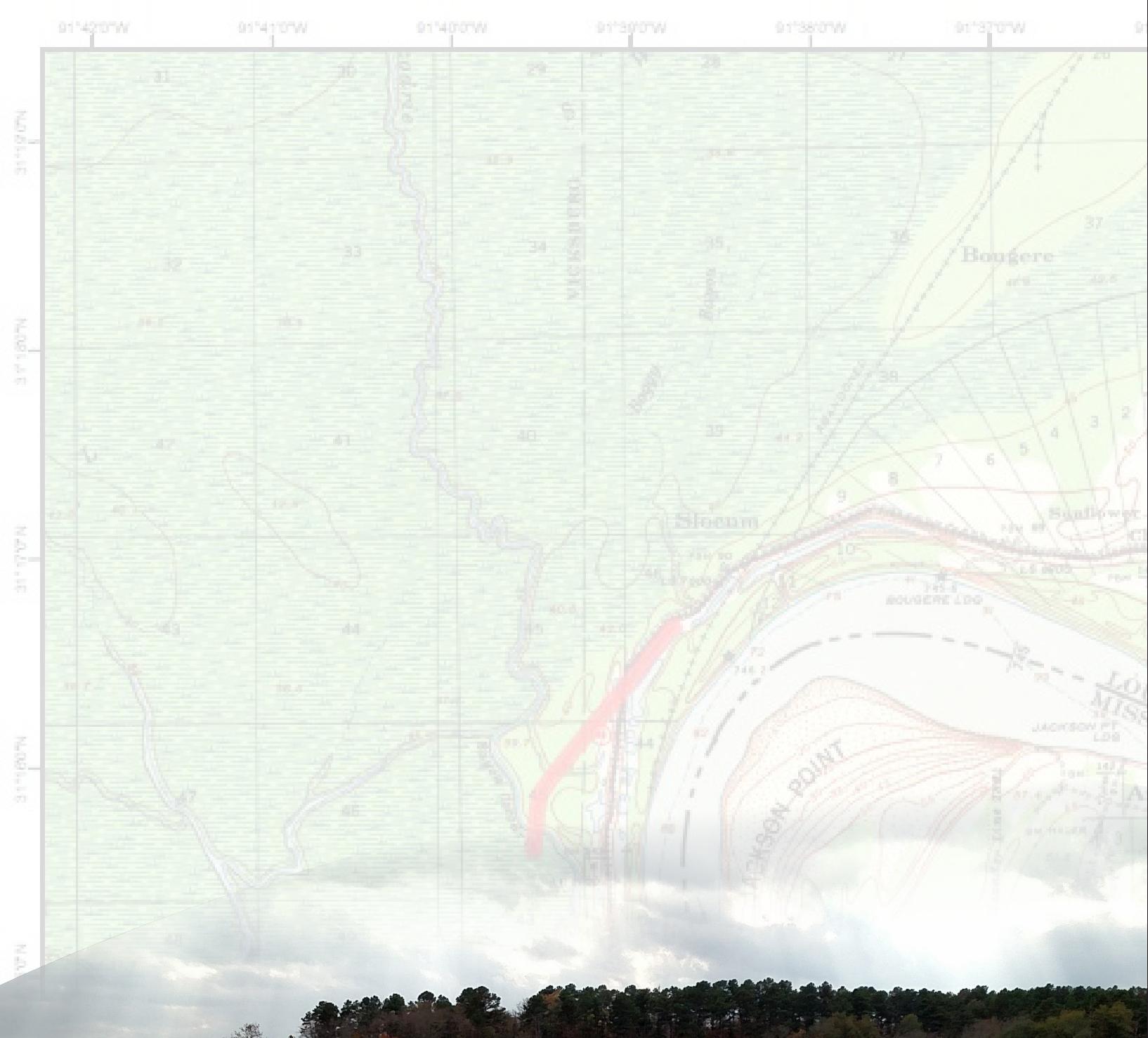
31. SIGNATURE



32. DATE
11/15/2021

33. NAME AND TITLE

Josh Carson | Program Manager



PART II



PART II

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (*If any*)
W9126G-20-R-0068

PART II - GENERAL QUALIFICATIONS

PART II - GENERAL QUALIFICATIONS
(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME MSMM Huitt-Zollars A Joint Venture			3. YEAR ESTABLISHED 2019	4. DUNS NUMBER 117073814
2b. STREET 4640 S Carrollton Ave Ste 220			5. OWNERSHIP	
			a. TYPE Joint Venture	
2c. CITY New Orleans			b. SMALL BUSINESS STATUS Small Business	
6a. POINT OF CONTACT NAME AND TITLE Manish Mardia, Joint Venture Chairman			7. NAME OF FIRM (<i>If block 2a is a branch office</i>)	
6b. TELEPHONE NUMBER 504-559-1897		6c. E-MAIL ADDRESS mmardia@mssmmeng.com		
8a. FORMER FIRM NAME(S) (<i>If any</i>)			8b. YR. ESTABLISHED	8c. DUNS NUMBER

9 EMPLOYEES BY DISCIPLINE

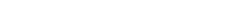
10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

SERVICES REVENUES OF FIRM FOR LAST 3 YEARS <i>(Insert revenue index number shown at right)</i>		PROFESSIONAL SERVICES REVENUE INDEX		
	1	1. Less Than \$100,000	6.	\$2 million to less than \$5 million
	1	2. \$100,000 to less than \$250,000	7.	\$5 million to less than \$10 million
a. Federal Work	1	3. \$250,000 to less than \$500,000	8.	\$10 million to less than \$25 million
b. Non-Federal Work	1	4. \$500,000 to less than \$1 million	9.	\$25 million to less than \$50 million
c. Total Work	1	5. \$1 million to less than \$2 million	10.	\$50 million or greater

12. AUTHORIZED REPRESENTATIVE - The foregoing is a statement of facts.

a. SIGNATURE		b. DATE	April 1, 2021
--------------	---	---------	---------------

c. NAME AND TITLE

John Doe

b. DATE

c. NAME AND TITLE

Manish Mardia, Joint Venture Chairman

ARCHITECT-ENGINEER QUALIFICATIONS					1. SOLICITATION NUMBER (If any) W9126G-20-R-0068		
PART II – GENERAL QUALIFICATIONS <i>(If a firm has branch offices, complete for each specific branch office seeking work)</i>							
2a. FIRM (Or Branch Office) NAME MSMM Engineering, LLC CAGE Code: 6SKR5					3. YEAR ESTABLISHED 2011	4. UNIQUE ENTITY IDENTIFIER 969989370	
2b. STREET 4640 South Carrollton Avenue, Suite 220					5. OWNERSHIP		
2c. CITY New Orleans		2d. STATE LA	2e. ZIP CODE 70119	a. TYPE Limited Liability Corporation			
6a. POINT OF CONTACT NAME AND TITLE Manish Mardia, P.E., President/Owner					b. SMALL BUSINESS STATUS Small Business		
6b. TELEPHONE NUMBER 504-559-1897		6c. EMAIL ADDRESS mmardia@msmmeng.com			7. NAME OF FIRM (If block 2a is a branch office)		
8. FORMER NAME(S) (If any)				8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER		
9. EMPLOYEES BY DISCIPLINE					10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)	
		(1) FIRM	(2) BRANCH				
12	Civil Engineer	3	2	C07	Coastal Engineering	2	
21	Electrical Engineer	1	1	C13	Computer Facilities; Computer Service	2	
23	Environmental Engineer	2	1	C15	Construction Management	3	
57	Structural Engineer	2	1	D01	Dams (Concrete; Arch)	1	
42	Foundation/Geotechnical Engineer	1		D02	Dams; Dikes; Levees	2	
24	Environmental Scientist	1	1	E03	Electrical Studies and Design	1	
32	Hydraulic Engineer	1	1	L06	Lighting (Exteriors; Streets; Memorials Athletic Fields)	1	
18	Cost Engineer / Estimator	1		P06	Planning (Site, Installation and Project)	4	
08	CADD Technician	4	3	R11	Rivers; Canals: Waterways; Flood Control	4	
06	Architect	1	1	S09	Structural Design; Special Structures	2	
48	Project Manager	2	2	S13	Storm Water Handling & Facilities	3	
61	Value Engineer	1	1	W02	Water Resources; Hydrology Ground Water	2	
15	Inspector	3	3	W03	Water Supply; Treatment and Distribution	3	
02	Administrative	2	1				
Total		25	18				
11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS <i>(Insert revenue index number shown at right)</i>		PROFESSIONAL SERVICES REVENUE INDEX NUMBER					
		1. Less than \$100,000	6. \$2 million to less than \$5 million				
a. Federal Work		2. \$100,000 to less than \$250,000	7. \$5 million to less than \$10 million				
		3. \$250,000 to less than \$500,000	8. \$10 million to less than \$25 million				
b. Non-Federal Work		4. \$500,000 to less than \$1 million	9. \$25 million to less than \$50 million				
		5. \$1 million to less than \$2 million	10. \$50 million or greater				
12. AUTHORIZED REPRESENTATIVE <i>The foregoing is a statement of facts.</i>							
a. SIGNATURE 						b. DATE March 31, 2021	
c. NAME AND TITLE Manish Mardia, P.E., President/Owner							

ARCHITECT-ENGINEER QUALIFICATIONS					1. SOLICITATION NUMBER (If any) W9126G-20-R-0068		
PART II – GENERAL QUALIFICATIONS <i>(If a firm has branch offices, complete for each specific branch office seeking work)</i>							
2a. FIRM (Or Branch Office) NAME MSMM Engineering, LLC (Houston Texas Office)					3. YEAR ESTABLISHED 2011	4. UNIQUE ENTITY IDENTIFIER 071392535	
2b. STREET 13850 Gulf Freeway, Suite 202A CAGE Code: 8DSX1					5. OWNERSHIP		
2c. CITY Houston		2d. STATE TX	2e. ZIP CODE 77034	a. TYPE Limited Liability Corporation			
6a. POINT OF CONTACT NAME AND TITLE Manish Mardia, P.E., President/Owner					b. SMALL BUSINESS STATUS Small Business		
6b. TELEPHONE NUMBER 504-559-1897		6c. EMAIL ADDRESS mmardia@msmmeng.com			7. NAME OF FIRM (If block 2a is a branch office) MSMM Engineering, LLC		
8. FORMER NAME(S) (If any)				8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER		
9. EMPLOYEES BY DISCIPLINE					10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)	
		(1) FIRM	(2) BRANCH				
12	Civil Engineer	3	1	C07	Coastal Engineering	2	
21	Electrical Engineer	1		C13	Computer Facilities; Computer Service	2	
23	Environmental Engineer	2	1	C15	Construction Management	3	
57	Structural Engineer	2	1	D01	Dams (Concrete; Arch)	1	
42	Foundation/Geotechnical Engineer	1	1	D02	Dams; Dikes; Levees	2	
24	Environmental Scientist	1		E03	Electrical Studies and Design	1	
32	Hydraulic Engineer	1		L06	Lighting (Exteriors; Streets; Memorials Athletic Fields)	1	
18	Cost Engineer / Estimator	1	1	P06	Planning (Site, Installation and Project)	4	
08	CADD Technician	4	1	R11	Rivers; Canals; Waterways; Flood Control	4	
06	Architect	1		S09	Structural Design; Special Structures	2	
48	Project Manager	2		S13	Storm Water Handling & Facilities	3	
61	Value Engineer	1		W02	Water Resources; Hydrology Ground Water	2	
15	Inspector	3		W03	Water Supply; Treatment and Distribution	3	
02	Administrative	2	1				
Total		25	7				
11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS <i>(Insert revenue index number shown at right)</i>		PROFESSIONAL SERVICES REVENUE INDEX NUMBER					
		1. Less than \$100,000	6. \$2 million to less than \$5 million				
a. Federal Work		2. \$100,000 to less than \$250,000	7. \$5 million to less than \$10 million				
		3. \$250,000 to less than \$500,000	8. \$10 million to less than \$25 million				
b. Non-Federal Work		4. \$500,000 to less than \$1 million	9. \$25 million to less than \$50 million				
		5. \$1 million to less than \$2 million	10. \$50 million or greater				
12. AUTHORIZED REPRESENTATIVE <i>The foregoing is a statement of facts.</i>							
a. SIGNATURE						b. DATE	March 31, 2021
c. NAME AND TITLE Manish Mardia, P.E., President/Owner							

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (If any)

W9126G-20-R-0068

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (or Branch Office) NAME Huitt-Zollars, Inc.				3. YEAR ESTABLISHED 1975	4. UNIQUE ENTITY IDENTIFIER 156399560
2b. STREET 500 W. 7th Street, Suite 300				5. OWNERSHIP Corporation	
2c. CITY Fort Worth		2d. STATE Texas	2e. ZIP CODE 76102-4728	b. SMALL BUSINESS STATUS Large Business	
6a. POINT OF CONTACT NAME AND TITLE Larry O. Rogers, PE, Vice President				7. NAME OF FIRM (If Block 2a is a Branch Office) Huitt-Zollars, Inc.	
6b. TELEPHONE NUMBER 817-335-3000		6c. E-MAIL ADDRESS lrogers@huitt-zollars.com			
8a. FORMER FIRM NAME(S) (If any)				8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Function Code	b. Discipline	c. Number of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative	68	4	A09	Anti-Terrorism/Force Protection	4
06	Architect	90	11	B01	Barracks; Dormitories	4
08	CADD Technician	46	6	C15	Construction Management	2
12	Civil Engineer	159	7	D04	Design-Build Preparation RFP's	3
15	Construction Inspector	4		D07	Dining Halls; Clubs; Restaurants	2
16	Construction Manager	10	1	E02	Educational Facilities; Classrooms	2
21	Electrical Engineer	16	10	E05	Elevators; Escalators; People-Movers	1
23	Environmental Engineer	2		E07	Energy Conservation; New Energy Sources	5
25	Fire Protection Engineer	2	1	F03	Fire Protection	4
37	Interior Designer	6		G01	Garages; Vehicle Maintenance Facilities; Parking	5
38	Land Surveyor	57		H07	Highways; Streets; Airfield Paving; Parking	4
39	Landscape Architect	6		H11	Housing (Residential, Multi-Family; Apartments; Condominiums)	3
42	Mechanical Engineer	24	14	I01	Industrial Buildings; Manufacturing Plants	5
47	Planner: Urban/Regional	4		I05	Interior Design; Space Planning	2
57	Structural Engineer	17	4	I06	Irrigation; drainage	
60	Transportation Engineer	15		J01	Judicial and Courtroom Facilities	4
62	Water Resource Engineer	12		M05	Military Design Standards	3
				O01	Office Buildings; Industrial Parks	5
				P08	Prisons & Correctional Facilities	2
				R06	Rehabilitation (Buildings; Structures; Fac's)	5
	Other Employees			S11	Sustainable Design	6
Total		538	58	W01	Warehouses & Depots	5

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	6
b. Non-Federal Work	5
c. Total Work	7

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than \$100,000
2. \$100,000 to less than \$250,000
3. \$250,000 to less than \$500,000
4. \$500,000 to less than \$1 million
5. \$1 million to less than \$2 million
6. \$2 million to less than \$5 million
7. \$5 million to less than \$10 million
8. \$10 million to less than \$25 million
9. \$25 million to less than \$50 million
10. \$50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE

7/06/2021

c. NAME AND TITLE

Monica Kent, PE, LEED AP, Senior Vice President

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (If any)

W9126G-20-R-0068

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (or Branch Office) NAME Huitt-Zollars, Inc.				3. YEAR ESTABLISHED 1975	4. UNIQUE ENTITY IDENTIFIER 080747660
2b. STREET 5430 LBJ Freeway, Suite 1500				5. OWNERSHIP	
2c. CITY Dallas		2d. STATE Texas	2e. ZIP CODE 75240	a. TYPE Corporation	b. SMALL BUSINESS STATUS Large Business
6a. POINT OF CONTACT NAME AND TITLE Robert J. McDermott, PE, President				7. NAME OF FIRM (If Block 2a is a Branch Office) N/A	
6b. TELEPHONE NUMBER 214-871-3311		6c. E-MAIL ADDRESS mcdermott@huitt-zollars.com			
8a. FORMER FIRM NAME(S) (If any)				8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Function Code	b. Discipline	c. Number of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative	68	37	A06	Airports; Terminals and Hangars; Freight Handling	1
06	Architect	90	4	B02	Bridges	7
08	CADD Technician	46	11	C15	Construction Management	6
12	Civil Engineer	159	33	C16	Construction Surveying	6
15	Construction Inspector	4		D04	Design-Build – Preparation of RFPs	4
16	Construction Manager	10	1	G01	Garages; Vehicles Maintenance Facilities; Parking Decks	6
21	Electrical Engineer	16		H04	Heating; Ventilating; Air Conditioning	6
23	Environmental Engineer	2	1	H07	Highways; Streets; Airfield Paving; Parking Lots	8
25	Fire Protection Engineer	2		H11	Housing (Residential, Multi-Family; Apartments)	3
37	Interior Designer	6	1	I06	Irrigation; Drainage	6
38	Land Surveyor	57	16	L02	Land Surveying	7
39	Landscape Architect	6	6	L03	Landscape Architecture	6
42	Mechanical Engineer	24	1	P06	Planning (Site, Installation and Project)	7
47	Planner: Urban/Regional	4		R04	Recreation Facilities (Parks, Marinas, Etc.)	4
57	Structural Engineer	17	7	S04	Sewage Collection, Treatment and Disposal	7
60	Transportation Engineer	15	9	S10	Surveying; Platting; Mapping; Flood Plain Studies	6
62	Water Resource Engineer	12	7	S11	Sustainable Design	6
				S13	Storm Water Handling and Facilities	5
	Other Employees			T04	Topographic Surveying and Mapping	5
Total		538	134			

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

- 1. Less than \$100,000
- 2. \$100,000 to less than \$250,000
- 3. \$250,000 to less than \$500,000
- 4. \$500,000 to less than \$1 million
- 5. \$1 million to less than \$2 million
- 6. \$2 million to less than \$5 million
- 7. \$5 million to less than \$10 million
- 8. \$10 million to less than \$25 million
- 9. \$25 million to less than \$50 million
- 10. \$50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE

7/06/2021

c. NAME AND TITLE

Monica Kent, PE, LEED AP, Senior Vice President

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (If any)

W9126G-20-R-0068

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (or Branch Office) NAME Huitt-Zollars, Inc.			3. YEAR ESTABLISHED 1975	4. UNIQUE ENTITY IDENTIFIER 879473999
2b. STREET 10350 Richmond Ave., Suite 300			5. OWNERSHIP Corporation	
2c. CITY Houston		2d. STATE Texas	2e. ZIP CODE 77042-4248	b. SMALL BUSINESS STATUS Large Business
6a. POINT OF CONTACT NAME AND TITLE Gregory R. Wine, PE, LEED AP, Vice President			7. NAME OF FIRM (If Block 2a is a Branch Office) Huitt-Zollars, Inc.	
6b. TELEPHONE NUMBER 281-496-0066		6c. E-MAIL ADDRESS gwine@huitt-zollars.com		
8a. FORMER FIRM NAME(S) (If any)			8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Function Code	b. Discipline	c. Number of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative	68	5	B01	Barracks; Dormitories	2
06	Architect	90	2	C15	Construction Management	5
08	CADD Technician	46	4	D04	Design-Build – Prep RFPs	4
12	Civil Engineer	159	25	E02	Educational Facilities; Classrooms	4
15	Construction Inspector	4	1	G01	Garages; Vehicles Maintenance Facilities; Parking Decks	4
16	Construction Manager	10	5	H01	Harbors; Jetties, Piers, Ship Terminal Facilities	3
21	Electrical Engineer	16	1	H07	Highways; Streets; Airfield Paving; Parking Lots	6
23	Environmental Engineer	2		I05	Interior Design; Space Planning	2
25	Fire Protection Engineer	2		O01	Office Buildings, Industrial Parks	3
37	Interior Designer	6	1	R03	Railroad; Rapid Transit	7
38	Land Surveyor	57	4	R04	Recreation Facilities (Parks, Marinas, Etc.)	5
39	Landscape Architect	6		R06	Rehabilitation (Buildings; Structures; Facilities)	6
42	Mechanical Engineer	24	2	R11	Rivers; Canals; Waterways; Flood Control	6
47	Planner: Urban/Regional	4		S04	Sewage Collection; Treatment and Disposal	5
57	Structural Engineer	17		S10	Surveying; Platting; Mapping; Flood Plain Studies	5
60	Transportation Engineer	15		S11	Sustainable Design	4
62	Water Resource Engineer	12	1	S13	Storm Water Handling and Facilities	4
				T03	Traffic and Transportation Engineering	3
	Other Employees			T04	Topographic Surveying and Mapping	5
Total		538	51			

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	1
b. Non-Federal Work	7
c. Total Work	7

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than \$100,000
2. \$100,000 to less than \$250,000
3. \$250,000 to less than \$500,000
4. \$500,000 to less than \$1 million
5. \$1 million to less than \$2 million
6. \$2 million to less than \$5 million
7. \$5 million to less than \$10 million
8. \$10 million to less than \$25 million
9. \$25 million to less than \$50 million
10. \$50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE

7/06/2021

c. NAME AND TITLE

Monica Kent, PE, LEED AP, Senior Vice President

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (If any)
W9126G-20-R-0068

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work)

2a. FIRM (OR BRANCH OFFICE) NAME Mott MacDonald, LLC			3. YEAR ESTABLISHED 1972	4. UNIQUE ENTITY IDENTIFIER 808549914
2b. STREET 110 Wild Basin Road, Suite 100			5. OWNERSHIP	
2c. CITY Austin		2d. STATE TX	2e. ZIP CODE 78746	a. TYPE Limited Liability Company
6a. POINT OF CONTACT NAME AND TITLE Josh Carter, PE, D.CE			b. SMALL BUSINESS STATUS N/A	
6b. TELEPHONE NUMBER 512.342.9516		6c. E-MAIL ADDRESS Joshua.carter@mottmac.com		7. NAME OF FIRM (If block 2a is a branch office) Mott MacDonald
8a. FORMER FIRM NAME(S) (If any) Transit & Tunnels Consultants, Inc Hatch Mott MacDonald, Inc. Hatch Mott MacDonald, T&T, Inc. Hatch Mott MacDonald, LLC			8b. YR. ESTABLISHED 1972 1996 2002 2004	8c. UNIQUE ENTITY IDENTIFIER 057421872

9. EMPLOYEES BY DISCIPLINE

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM (2) BRANCH	a. Profile Code	b. Experience	c. Revenue Index Number (see below)	
06	Architect	30	A05	Airports; Navaids; Airport Lighting; Aircraft Fueling	10	
10	Chemical Engineer	9	B02	Bridges	10	
12	Civil Engineer	416	C07	Coastal Engineering	8	
15	Construction Inspector	91	C15	Construction Management	10	
16	Construction Manager	52	D02	Dams (Earth; Rock); Dikes; Levees	8	
18	Cost Engineer/Estimator	12	D08	Dredging Studies and Design	6	
21	Electrical Engineer	153	E09	Env. Imp. Studies, Assessments/Statements	10	
23	Environmental Engineer	60	H01	Harbors; Jetties; Piers, Ship Terminal Facilities	10	
24	Environmental Scientist	46	H07	Highways; Streets; Airfields Paving; Parking Lots	10	
27	Foundation/Geotech Engineer	65	L03	Landscape Architecture	6	
29	GIS Specialist	51	O02	Oceanographic Engineering	6	
30	Geologist	13	P04	Pipelines (Cross-Country – Liquid and Gas)	10	
38	Land Surveyor	156	R03	Railroad, Rapid Transit	10	
39	Landscape Architect	3	R04	Recreation Facilities (Parks, Marinas, Etc.)	7	
42	Mechanical Engineer	126	R11	Rivers; Canals; Waterways; Flood Control	8	
52	Sanitary Engineer	28	S04	Sewage Collection, Treatment and Disposal	10	
57	Structural Engineer	112	S05	Soils and Geologic Studies; Foundations	10	
60	Transportation Engineer	115	S10	Surveying; Platting; Mapping; Flood Plan Studies	10	
62	Water Resource/Coastal Engineer	80	S13	Storm Water Handling and Facilities	8	
	Asset/Information Mgt. Specialist	18	T03	Traffic and Transportation Engineering	10	
	Other Employees	579	T06	Tunnels and Subways	10	
			W02	Water Resources; Hydrology; Ground Water	10	
	Total	2215	18	W03	Water Supply, Treatment/Distribution	10

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

- 1. Less than \$100,000
- 2. \$100,000 to less than \$250,000
- 3. \$250,000 to less than \$500,000
- 4. \$500,000 to less than \$1 million
- 5. \$1 million to less than \$2 million
- 6. \$2 million to less than \$5 million
- 7. \$5 million to less than \$10 million
- 8. \$10 million to less than \$25 million
- 9. \$25 million to less than \$50 million
- 10. \$50 million or greater

a. Federal Work	7
b. Non-Federal Work	10
c. Total Work	10

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE		b. DATE
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January 01, 2021

c. NAME AND TITLE

Nicholas M. DeNichilo, PE, President

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (If any)
W9126G-20-R-0068

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work)

2a. FIRM (OR BRANCH OFFICE) NAME Mott MacDonald, LLC			3. YEAR ESTABLISHED 1972	4. UNIQUE ENTITY IDENTIFIER 808549914
2b. STREET 1601 5th Avenue, Suite 800			5. OWNERSHIP	
2c. CITY Seattle		2d. STATE WA	2e. ZIP CODE 98101	a. TYPE Limited Liability Company
6a. POINT OF CONTACT NAME AND TITLE Aaron Porter, PE			2c. CITY	
6b. TELEPHONE NUMBER 206.838.2886		6c. E-MAIL ADDRESS Aaron.porter@mottmac.com		b. SMALL BUSINESS STATUS N/A
8a. FORMER FIRM NAME(S) (If any)			7. NAME OF FIRM (If block 2a is a branch office) Mott MacDonald	8b. YR. ESTABLISHED 1972 1996 2002 2004
Transit & Tunnels Consultants, Inc Hatch Mott MacDonald, Inc. Hatch Mott MacDonald, T&T, Inc. Hatch Mott MacDonald, LLC			8c. UNIQUE ENTITY IDENTIFIER 057421872	

9. EMPLOYEES BY DISCIPLINE

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM (2) BRANCH	a. Profile Code	b. Experience	c. Revenue Index Number (see below)
06	Architect	30	A05	Airports; Navaids; Airport Lighting; Aircraft Fueling	10
10	Chemical Engineer	9	B02	Bridges	10
12	Civil Engineer	416	C07	Coastal Engineering	8
15	Construction Inspector	91	C15	Construction Management	10
16	Construction Manager	52	D02	Dams (Earth; Rock); Dikes; Levees	8
18	Cost Engineer/Estimator	12	D08	Dredging Studies and Design	6
21	Electrical Engineer	153	E09	Env. Imp. Studies, Assessments/Statements	10
23	Environmental Engineer	60	H01	Harbors; Jetties; Piers, Ship Terminal Facilities	10
24	Environmental Scientist	46	H07	Highways; Streets; Airfields Paving; Parking Lots	10
27	Foundation/Geotech Engineer	65	L03	Landscape Architecture	6
29	GIS Specialist	51	O02	Oceanographic Engineering	6
30	Geologist	13	P04	Pipelines (Cross-Country – Liquid and Gas)	10
38	Land Surveyor	156	R03	Railroad, Rapid Transit	10
39	Landscape Architect	3	R04	Recreation Facilities (Parks, Marinas, Etc.)	7
42	Mechanical Engineer	126	R11	Rivers; Canals; Waterways; Flood Control	8
52	Sanitary Engineer	28	S04	Sewage Collection, Treatment and Disposal	10
57	Structural Engineer	112	S05	Soils and Geologic Studies; Foundations	10
60	Transportation Engineer	115	S10	Surveying; Platting; Mapping; Flood Plan Studies	10
62	Water Resource/Coastal Engineer	80	S13	Storm Water Handling and Facilities	8
	Asset/Information Mgt. Specialist	18	T03	Traffic and Transportation Engineering	10
	Other Employees	579	T06	Tunnels and Subways	10
			W02	Water Resources; Hydrology; Ground Water	10
	Total	2215	18	W03	Water Supply, Treatment/Distribution

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

- 1. Less than \$100,000
- 2. \$100,000 to less than \$250,000
- 3. \$250,000 to less than \$500,000
- 4. \$500,000 to less than \$1 million
- 5. \$1 million to less than \$2 million
- 6. \$2 million to less than \$5 million
- 7. \$5 million to less than \$10 million
- 8. \$10 million to less than \$25 million
- 9. \$25 million to less than \$50 million
- 10. \$50 million or greater

a. Federal Work	7
b. Non-Federal Work	10
c. Total Work	10

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE

January 01, 2021

c. NAME AND TITLE

Nicholas M. DeNichilo, PE, President

ARCHITECT – ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (If any)

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Tetra Tech, Inc.			3. YEAR ESTABLISHED 1966	4. UNIQUE ENTITY IDENTIFIER DUNS: 198549560
2b. STREET 1 Park Drive, Suite 200			5. OWNERSHIP	
2c. CITY Research Triangle Park			2d. STATE NC	2e. ZIP CODE 27709
6a. POINT OF CONTACT NAME AND TITLE Jason Wright, Regional Manager			b. SMALL BUSINESS STATUS N/A	
6b. TELEPHONE NUMBER (919) 485-2064		7. NAME OF FIRM (If block 2a is a branch office) Tetra Tech, Inc.		
8a. FORMER FIRM NAME(S) (If any) N/A			8b. YEAR ESTABLISHED N/A	8c. UNIQUE ENTITY IDENTIFIER N/A

9 EMPLOYEES BY DISCIPLINE

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than \$100,000
 2. \$100,000 to less than \$250,000
 3. \$250,000 to less than \$500,000
 4. \$500,000 to less than \$1 million
 5. \$1 million to less than \$2 million
 6. \$2 million to less than \$5 million
 7. \$5 million to less than \$10 million
 8. \$10 million to less than \$25 million
 9. \$25 million to less than \$50 million
 10. \$50 million or greater

12 AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts

a SIGNATURE

Jason Wright

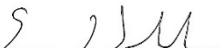
b DATE

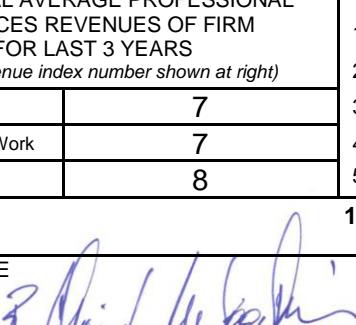
2/23/2021

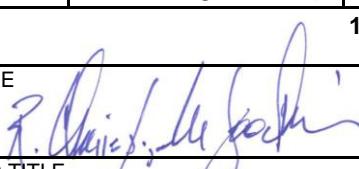
NAME AND TITLE

Jason Wright, Regional Manager

ARCHITECT – ENGINEER QUALIFICATIONS				1. SOLICITATION NUMBER (<i>If any</i>)		
PART II – GENERAL QUALIFICATIONS <i>(If a firm has branch offices, complete for each specific branch office seeking work.)</i>						
2a. FIRM (OR BRANCH OFFICE) NAME Tetra Tech, Inc.				3. YEAR ESTABLISHED 2004	4. UNIQUE ENTITY IDENTIFIER 14-829-1490	
2b. STREET 1420 5th Avenue, Suite 650				5. OWNERSHIP		
2c. CITY Seattle		2d. STATE WA	2e. ZIP CODE 98101	a. TYPE Corporation	b. SMALL BUSINESS STATUS N/A	
6a. POINT OF CONTACT NAME AND TITLE Kathy Cox-Czosnyka – Regional Manager				7. NAME OF FIRM (<i>If block 2a is a branch office</i>) Tetra Tech, Inc.		
6b. TELEPHONE NUMBER (206) 728-9655		6c. E-MAIL ADDRESS kathy.coxczosnyka@tetrtech.com		8b. YEAR ESTABLISHED N/A	8c. UNIQUE ENTITY IDENTIFIER N/A	
8a. FORMER FIRM NAME(S) (<i>If any</i>) N/A						
9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative	1735	2	B02	Bridges	1
12	Civil Engineer	754	9	D02	Dams (Earth; Rock; Dikes; Levees)	4
20	Economist	21	2	D04	Design-Build - Preparation of RFPs	1
	Financial Analyst	99	2	E08	Engineering Economics	2
				E09	Env. Impact Studies, Assess. or Stmt's	3
				E11	Environmental Planning	3
				E12	Environmental Remediation	1
				F04	Fisheries; Fish Ladders	1
				G03	Geodetic Surveying: Ground & Airborne	1
				H01	Harbors; Jetties; Piers, Ship Term. Fac.	1
				H07	Highways; Streets; Paving; Parking Lots	3
				M06	Mining & Mineralogy	1
				R10	Risk Analysis	1
				R11	Rivers; Canals; Waterways; Flood Control	5
				S10	Survey; Plot; Map; Flood Plain Studies	2
				S11	Sustainable Design	1
				S13	Storm Water Handling & Facilities	4
				T03	Traffic & Transportation Engineering	3
	Other Employees	16,005	1	T04	Topographic Surveying & Mapping	1
	Total	20,315	16	W02	Water Resources; Hydrology; Ground Water	4
11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS <i>(Insert revenue index number shown at right)</i>		PROFESSIONAL SERVICES REVENUE INDEX NUMBER				
a. Federal Work	5	1. Less than \$100,000				
b. Non-Federal Work	6	2. \$100,000 to less than \$250,000				
c. Total Work	7	3. \$250,000 to less than \$500,000				
		4. \$500,000 to less than \$1 million				
		5. \$1 million to less than \$2 million				
		6. \$2 million to less than \$5 million				
		7. \$5 million to less than \$10 million				
		8. \$10 million to less than \$25 million				
		9. \$25 million to less than \$50 million				
		10. \$50 million or greater				
12. AUTHORIZED REPRESENTATIVE The foregoing is a statement of facts.						
a. SIGNATURE 				b. DATE 8/13/21		
c. NAME AND TITLE Kristi Clemens, Marketing Manager						

ARCHITECT-ENGINEER QUALIFICATIONS				1. SOLICITATION NUMBER (<i>If any</i>) W9126G-20-R-0068		
PART II – GENERAL QUALIFICATIONS <i>(If a firm has branch offices, complete for each specific branch office seeking work)</i>						
2a. FIRM (Or Branch Office) NAME Vernadero Group Incorporated				3. YEAR ESTABLISHED 1999	4. UNIQUE ENTITY IDENTIFIER 114054054	
2b. STREET 3400 S. Carrollton Ave, #850752				5. OWNERSHIP		
2c. CITY New Orleans		2d. STATE LA	2e. ZIP CODE 70185	a. TYPE Corporation		
6a. POINT OF CONTACT NAME AND TITLE Eric Webb, President				b. SMALL BUSINESS STATUS Veteran-Owned Small Business		
6b. TELEPHONE NUMBER (866) 708-7640		6c. EMAIL ADDRESS ewebb@vernadero.com		7. NAME OF FIRM (<i>If block 2a is a branch office</i>) Vernadero Group Incorporated		
8. FORMER NAME(S) (<i>If any</i>)				8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER	
9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative	2		C14	Conservation & Res Mngmt	4
06	Biologist	5	1	C15	Construction Management	5
07	Architect	1		E01	Ecological & Arch Investigations	4
16	Construction Manager	3		E07	Energy Conservation	1
19	Ecologist	2		E09	Environmental Impact Studies, Assessments or Statements	5
29	Geographic Information System	2		E10	Environmental & NR Mapping	2
47	Planner: Urban/Regional	4		E11	Environmental Planning	5
48	Project Manager	7	2	E12		1
				E13	Environmental Testing & Analysis	1
				G04	GIS Services: Development, Analysis & Data Collection	2
				H03	HTRW Remediation	2
				H07	Highways; Streets; Parking Lots	4
				H08	Historical Preservation	1
				P06	Planning	3
Total		26	3	W02	Water Res; Hydrology	1
11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS <i>(Insert revenue index number shown at right)</i>		PROFESSIONAL SERVICES REVENUE INDEX NUMBER				
a. Federal Work	8	1. Less than \$100,000 6. \$2 million to less than \$5 million				
b. Non-Federal Work	1	2. \$100,000 to less than \$250,000 7. \$5 million to less than \$10 million				
c. Total Work	8	3. \$250,000 to less than \$500,000 8. \$10 million to less than \$25 million				
		4. \$500,000 to less than \$1 million 9. \$25 million to less than \$50 million				
		5. \$1 million to less than \$2 million 10. \$50 million or greater				
12. AUTHORIZED REPRESENTATIVE <i>The foregoing is a statement of facts.</i>						
a. SIGNATURE 					b. DATE 1 November 2021	
c. NAME AND TITLE Eric Webb, President						

ARCHITECT-ENGINEER QUALIFICATIONS				1. SOLICITATION NUMBER (If any) W9126G-20-R-0068		
PART II – GENERAL QUALIFICATIONS <i>(If a firm has branch offices, complete for each specific branch office seeking work)</i>						
2a. FIRM (Or Branch Office) NAME R. Christopher Goodwin & Associates, Inc.				3. YEAR ESTABLISHED 1981	4. UNIQUE ENTITY IDENTIFIER 72-0929188	
2b. STREET 3850 East 13 th Street, Suite C				5. OWNERSHIP		
2c. CITY Lawrence		2d. STATE KS	2e. ZIP CODE 66044	a. TYPE C-corporation		
6a. POINT OF CONTACT NAME AND TITLE R. Christopher Goodwin, Ph.D., President & CEO				b. SMALL BUSINESS STATUS Small Business		
6b. TELEPHONE NUMBER 1-800-360-2724		6c. EMAIL ADDRESS rcgoodwin@rcgoodwin.com		7. NAME OF FIRM (If block 2a is a branch office)		
8. FORMER NAME(S) (If any)				8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER	
9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative	6		1	Archeological Investigations	7
05	Archeologists	41	7	9	Environmental Impact Studies	1
29	GIS Specialists	4	1	4	GIS Services	1
08	CADD Technicians	1		8	Historic Preservation	6
				7	Remote Sensing	2
Other Employees:						
Architectural Historians		4			Other Experience:	
Historians		4				1
Lab Supervisors		2			Curation	2
Lab Analysts		2			History	2
Geologist		1			Multi-Disciplines	2
					Nautical	2
Total		65	8			
11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS <i>(Insert revenue index number shown at right)</i>		PROFESSIONAL SERVICES REVENUE INDEX NUMBER				
a. Federal Work	7	1. Less than \$100,000				
b. Non-Federal Work	7	2. \$100,000 to less than \$250,000				
c. Total Work	8	3. \$250,000 to less than \$500,000				
		4. \$500,000 to less than \$1 million				
		5. \$1 million to less than \$2 million				
		6. \$2 million to less than \$5 million				
		7. \$5 million to less than \$10 million				
		8. \$10 million to less than \$25 million				
		9. \$25 million to less than \$50 million				
		10. \$50 million or greater				
12. AUTHORIZED REPRESENTATIVE <i>The foregoing is a statement of facts.</i>						
a. SIGNATURE 				b. DATE 10/28/2021		
c. NAME AND TITLE R. Christopher Goodwin, Ph.D., President & CEO						

ARCHITECT-ENGINEER QUALIFICATIONS				1. SOLICITATION NUMBER (<i>If any</i>) W9126G-20-R-0068		
PART II – GENERAL QUALIFICATIONS <i>(If a firm has branch offices, complete for each specific branch office seeking work)</i>						
2a. FIRM (Or Branch Office) NAME R. Christopher Goodwin & Associates, Inc.				3. YEAR ESTABLISHED 1981	4. UNIQUE ENTITY IDENTIFIER 139241665	
2b. STREET 309 Jefferson Highway, Suite A				5. OWNERSHIP		
2c. CITY New Orleans		2d. STATE LA	2e. ZIP CODE 70121	a. TYPE C-corporation		
6a. POINT OF CONTACT NAME AND TITLE R. Christopher Goodwin, Ph.D., President & CEO				b. SMALL BUSINESS STATUS Small Business		
6b. TELEPHONE NUMBER 1-800-360-2724		6c. EMAIL ADDRESS rcgoodwin@rcgoodwin.com		7. NAME OF FIRM (<i>If block 2a is a branch office</i>)		
8. FORMER NAME(S) (<i>If any</i>)				8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER	
9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (<i>see below</i>)
		(1) FIRM	(2) BRANCH			
02	Administrative	6	4	1	Archeological Investigations	7
05	Archeologists	41	17	9	Environmental Impact Studies	1
29	GIS Specialists	4	1	4	GIS Services	1
08	CADD Technicians	1		8	Historic Preservation	6
				7	Remote Sensing	2
Other Employees:						
Architectural Historians		4		Other Experience:		
Historians		4	1			1
Lab Supervisors		2		Curation		2
Lab Analysts		2	1	History		2
Geologist		1		Multi-Disciplines		2
				Nautical		2
Total		65	24			
11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS <i>(Insert revenue index number shown at right)</i>		PROFESSIONAL SERVICES REVENUE INDEX NUMBER				
a. Federal Work		1. Less than \$100,000 6. \$2 million to less than \$5 million				
b. Non-Federal Work		2. \$100,000 to less than \$250,000 7. \$5 million to less than \$10 million				
c. Total Work		3. \$250,000 to less than \$500,000 8. \$10 million to less than \$25 million				
		4. \$500,000 to less than \$1 million 9. \$25 million to less than \$50 million				
		5. \$1 million to less than \$2 million 10. \$50 million or greater				
12. AUTHORIZED REPRESENTATIVE <i>The foregoing is a statement of facts.</i>						
a. SIGNATURE 						b. DATE 10/28/2021
c. NAME AND TITLE R. Christopher Goodwin, Ph.D., President & CEO						

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (*If any*)
W9126G-20-R-0068

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Neelu, Inc.				3. YEAR ESTABLISHED 2010	4. DUNS NUMBER 96-277-1957
2b. STREET 601 Basset Ct., SE				2d. STATE Georgia	2e. ZIP CODE 30080
2c. CITY Smyrna		b. SMALL BUSINESS STATUS Woman Owned Small Business (NAICS – 541330)			
6a. POINT OF CONTACT NAME AND TITLE Ramesh Kalvakaalva, PE, CVS - Executive Vice President					
6b. TELEPHONE NUMBER (770) 312-2014	6c. E-MAIL ADDRESS Ramesh.Neeluinc@Gmail.com				7. NAME OF FIRM (<i>If block 2a is branch office</i>) Neelu, Inc.
8a. FORMER FIRM NAMES (<i>if any</i>)				8b. YEAR ESTABLISHED	8c. DUNS NUMBER

9. EMPLOYEES BY DISCIPLINE			10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS			
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index No. (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative*	1		B02	Bridges	1
06	Architect	1		P06	Planning (Site, Installation, and Project)	1
08/29	CADD/GIS Specialist	1		S09	Structural Design; Special Structures	1
12	Civil Engineer*	2		T03	Traffic and Transportation Engineering	1
18	Cost Engineer/Scheduler/Estimator	1		C15	Construction Management	1
21/42	MEP Engineer	1		R06	Rehabilitation	1
27	Foundations/Geotechnical Engineer	1		V01	Value Analysis, Life Cycle Costing	2
48	Project Manager*	1				
50	Risk Assessor*	1				
53	Scheduler*	1				
57	Structural Engineer	2				
61	Value Engineer*	2				
62	Water Resources Engineer*	1				
		Total	9			2

*Members of other primary disciplines.

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUE OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right)		PROFESSIONAL SERVICES REVENUE INDEX NUMBER
a. Federal Work	3	1. Less than \$100,000
b. Non-Federal Work	2	2. \$100,000 to less than \$250,000
c. Total Work	4	3. \$250,000 to less than \$500,000
		4. \$500,000 to less than \$1 million
		5. \$1 million to less than \$2 million
		6. \$2 million to less than \$5 million
		7. \$5 million to less than \$10 million
		8. \$10 million to less than \$25 million
		9. \$25 million to less than \$50 million
		10. \$50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE



b. DATE

November 15, 2021

c. NAME AND TITLE

Neerja Tayal, PMP – President

ARCHITECT-ENGINEER QUALIFICATIONS				1. SOLICITATION NUMBER (If any) W9126G-20-R-0068		
PART II – GENERAL QUALIFICATIONS <i>(If a firm has branch offices, complete for each specific branch office seeking work)</i>						
2a. FIRM (Or Branch Office) NAME Wiss, Janney, Elstner Associates, Inc.				3. YEAR ESTABLISHED 1984	4. UNIQUE ENTITY IDENTIFIER 11-256-1014	
2b. STREET 9511 North Lake Creek Parkway				5. OWNERSHIP		
2c. CITY Austin		2d. STATE TX	2e. ZIP CODE 78717	a. TYPE Corporation		
6a. POINT OF CONTACT NAME AND TITLE Matthew Carlton, Unit Manager and Principal				b. SMALL BUSINESS STATUS No		
6b. TELEPHONE NUMBER (512) 257-4800		6c. EMAIL ADDRESS mcarlton@wje.com		7. NAME OF FIRM (If block 2a is a branch office) Wiss, Janney, Elstner Associates, Inc.		
8. FORMER NAME(S) (If any) Janney and Associates (1956); Wiss and Janney Associates (1957); Wiss, Janney, Elstner & Associates (1961); Wiss, Janney, Elstner and Associates, Inc. (1973); Wiss, Janney, Elstner Associates, Inc. (1983–Present)				8b. YEAR ESTABLISHED 1956	8c. UNIQUE ENTITY IDENTIFIER 06-441-1473	
9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative	114	4	A11	Auditoriums & Theaters	1
06	Architect	81	2	B02	Bridges	3
08	CAD Technician	11	2	C06	Churches; Chapels	1
11	Chemist	5	0	C10	Commercial Buildings	3
40	Materials Engineer	16	2	E02	Education, Facilities; Classrooms	6
30	Geologist	4	1	F02	Field Houses; Gyms; Stadiums	1
57	Structural Engineer	185	10	G01	Garages; Parking Decks	3
58	Technician	21	3	H01	Harbors, Jetties, Piers, Terminals	3
12	Civil Engineer	75	6	H07	Highways, Streets, Airfields	1
25	Fire Protection Engineer	15	0	H09	Hospitals & Medical Facilities	2
27	Geotechnical Engineer	5	0	H10	Hotels; Motels	2
	Specialist	25	1	H11	Housing	4
	Architect Engineer	91	4	I01	Industrial; Manufacturing	1
21	Electrical Engineer	4	0	J01	Judicial and Courtroom Facilities	1
42	Mechanical Engineer	13	0	L04	Libraries, Museums, Galleries	1
				O01	Office Buildings; Industrial Parks	3
				P12	Power Generation; Transmission	2
				R04	Recreational Facilities	1
				T05	Towers	1
				W01	Warehouses	1
	Other Employees	0		W03	Water Supply; Treatment; Distrib.	3
	Total	665	35		Other	4
11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS <i>(Insert revenue index number shown at right)</i>		PROFESSIONAL SERVICES REVENUE INDEX NUMBER				
a. Federal Work	5	1. Less than \$100,000 6. \$2 million to less than \$5 million				
b. Non-Federal Work	10	2. \$100,000 to less than \$250,000 7. \$5 million to less than \$10 million				
c. Total Work	10	3. \$250,000 to less than \$500,000 8. \$10 million to less than \$25 million				
		4. \$500,000 to less than \$1 million 9. \$25 million to less than \$50 million				
		5. \$1 million to less than \$2 million 10. \$50 million or greater				
12. AUTHORIZED REPRESENTATIVE <i>The foregoing is a statement of facts.</i>						
a. SIGNATURE 					b. DATE 02/24/2021	
c. NAME AND TITLE Matthew Carlton, Unit Manager and Principal						

ARCHITECT – ENGINEER QUALIFICATIONS

 1. SOLICITATION NUMBER (*If any*)
 W9126G-20-R-0068

PART II – GENERAL QUALIFICATIONS
(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Michael Baker International, Inc. (CAGE CODE 540F6)			3. YEAR ESTABLISHED 2015	4. UNIQUE ENTITY IDENTIFIER 827041075
2b. STREET 1501 Lyndon B. Johnson Freeway, Suite 650			5. OWNERSHIP	
2c. CITY Dallas		2d. STATE TX	2e. ZIP CODE 75234	a. TYPE Limited Liability Company
6a. POINT OF CONTACT NAME AND TITLE Michael H. Stengel, P.E., Office Executive			b. SMALL BUSINESS STATUS No	
6b. TELEPHONE NUMBER 469-801-8526		6c. E-MAIL ADDRESS mhstengel@mbakerintl.com		7. NAME OF FIRM (<i>If Block 2a is a Branch Office</i>) Michael Baker International, LLC
8a. FORMER FIRM NAME(S) (<i>If any</i>) Michael Baker Jr., Inc.			8b. YEAR ESTABLISHED 2006	8c. UNIQUE ENTITY IDENTIFIER 827041075

9. EMPLOYEES BY DISCIPLINE
**10. PROFILE OF FIRM'S EXPERIENCE
AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS**

a. Function Code	b. Discipline	c. Number of Employees (1) FIRM (2) BRANCH	a. Profile Code	b. Experience	c. Revenue Index Number (see below)
02	Administrative	625	14	A06 Airports; Terminals; & Hangars; Freight Handling	5
06	Architect	51	4	B02 Bridges	5
12	Civil Engineer	488	9	C15 Construction Management	6
15	Construction Inspector	248	7	E09 EIS, Assessments or Statements	5
16	Construction Manager	113	2	G04 GIS: Development, Analysis, & Data Collection	1
27	Foundation/Geotechnical Engineer	16	1	H07 Highways; Streets; Airfield Paving; Parking Lots	5
29	GIS Specialist	120	1	T03 Traffic & Transportation Engineering	6
48	Project Manager	65	5	Municipal Engineering	1
53	Scheduler	8	1		
57	Structural Engineer	143	6		
58	Technician/Analyst	75	1		
60	Transportation Engineer	144	6		
	Architectural Technician	25	1		
	Bridge Inspector	39	3		
	Designer/CADD Technician	190	4		
	Engineering Technician	501	18		
	Planner	191	2		
	Other Employees	437	0		
	Total	3479	85		

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)
PROFESSIONAL SERVICES REVENUE INDEX NUMBER

- 1. Less than \$100,000
- 2. \$100,000 to less than \$250,000
- 3. \$250,000 to less than \$500,000
- 4. \$500,000 to less than \$1 million
- 5. \$1 million to less than \$2 million
- 6. \$2 million to less than \$5 million
- 7. \$5 million to less than \$10 million
- 8. \$10 million to less than \$25 million
- 9. \$25 million to less than \$50 million
- 10. \$50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE 	b. DATE 7/12/2021
c. NAME AND TITLE Michael H. Stengel, P.E., Office Executive	

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE

7/1/2021

C. NAME AND TITLE

Cory A. Wilder, P.E., Office Executive

ARCHITECT – ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (*If any*)
W9126G-20-R-0068

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Michael Baker International, Inc. (CAGE CODE 1W3M8)			3. YEAR ESTABLISHED 2015	4. UNIQUE ENTITY IDENTIFIER 048029719
2b. STREET 2002 West Grand Parkway North, Suite 325			5. OWNERSHIP	
2c. CITY Katy		2d. STATE TX	2e. ZIP CODE 77449	a. TYPE Limited Liability Company
6a. POINT OF CONTACT NAME AND TITLE Cory A. Wilder, P.E., Office Executive			b. SMALL BUSINESS STATUS No	
6b. TELEPHONE NUMBER 713-954-5300		6c. E-MAIL ADDRESS cwilder@mbakerintl.com		7. NAME OF FIRM (If Block 2a is a Branch Office) Michael Baker International, LLC
8a. FORMER FIRM NAME(S) (If any) Michael Baker Jr., Inc.			8b. YEAR ESTABLISHED 1999	8c. UNIQUE ENTITY IDENTIFIER 048029719

9. EMPLOYEES BY DISCIPLINE

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

- | | |
|---|---|
| 1. Less than \$100,000 | 6. \$2 million to less than \$5 million |
| 2. \$100,000 to less than \$250,000 | 7. \$5 million to less than \$10 million |
| 3. \$250,000 to less than \$500,000 | 8. \$10 million to less than \$25 million |
| 4. \$500,000 to less than \$1 million | 9. \$25 million to less than \$50 million |
| 5. \$1 million to less than \$2 million | 10. \$50 million or greater |

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

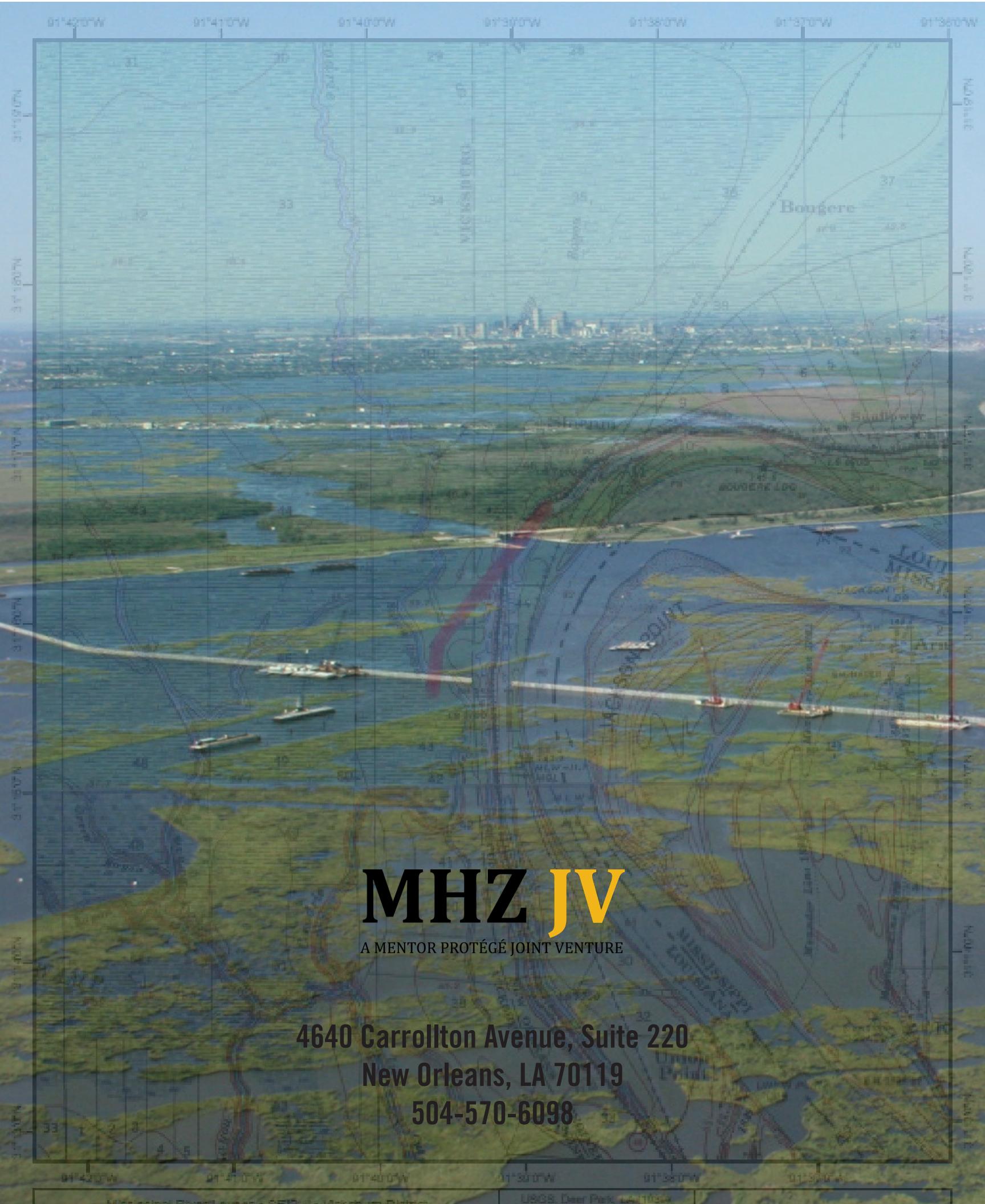
b. DATE

c. NAME AND TITLE

7/1/2021

Cory A. Wilder, P.E., Office Executive

ARCHITECT-ENGINEER QUALIFICATIONS				1. SOLICITATION NUMBER (<i>If any</i>) W9126G-20-R-0068		
PART II – GENERAL QUALIFICATIONS <i>(If a firm has branch offices, complete for each specific branch office seeking work)</i>						
2a. FIRM (Or Branch Office) NAME JESCO Environmental & Geotechnical Services, Inc				3. YEAR ESTABLISHED 1994	4. UNIQUE ENTITY IDENTIFIER 948076989	
2b. STREET 1701 S. Thibodeaux Rd.				5. OWNERSHIP		
2c. CITY Jennings		2d. STATE LA	2e. ZIP CODE 70546	a. TYPE S Corporation		
6a. POINT OF CONTACT NAME AND TITLE Alvinette Teal, President				b. SMALL BUSINESS STATUS Small Business, 8(a), SDB, WOSB, EDWSB		
6b. TELEPHONE NUMBER (337) 824-9074		6c. EMAIL ADDRESS ateal@jescous.com		7. NAME OF FIRM (<i>If block 2a is a branch office</i>) N/A		
8. FORMER NAME(S) (<i>If any</i>) N/A				8b. YEAR ESTABLISHED N/A	8c. UNIQUE ENTITY IDENTIFIER N/A	
9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative	5	5	C07	Coastal Engineering	2
07	Biologist	3	3	C15	Construction Management	7
08	CADD Technician	1	1	D06	Digital Orthophotography	1
11	Chemist	2	2	D08	Dredging Studies and Design	1
12	Civil Engineer	4	3	E09	EIS, Assessments or statements	3
15	Construction Inspector	5	5	E10	Environmental and Natural Resource Mapping	2
19	Ecologist	1	1	E11	Environmental Planning	3
17	Economist	1	1	E12	Environmental Remediation	5
24	Environmental Scientist	4	4	G04	GIS Services: Data Collection	2
29	GIS Specialist	1	1	H03	Hazardous, Toxic, Radioactive Waste Remediation	4
30	Geologist	3	3	H13	Hydrographic Surveying	1
36	Industrial Hygienist	1	1	P05	Planning	3
48	Project Manager	5	4	R07	Remote Sensing	1
49	Remote Sensing Specialist	1	1	R10	Risk Analysis	2
50	Risk Assessor	1	1	S05	Soils & Geologic Studies	5
58	Technician	11	10	S10	Surveying: Platting: Mapping: Flood Plain Studies	2
				W02	Water Resources; Hydrology, GW	3
				W02	Water Supply: Treatment and Distribution	2
Total		49	47			
11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS <i>(Insert revenue index number shown at right)</i>		PROFESSIONAL SERVICES REVENUE INDEX NUMBER				
a. Federal Work	6	1. Less than \$100,000 6. \$2 million to less than \$5 million				
b. Non-Federal Work	7	2. \$100,000 to less than \$250,000 7. \$5 million to less than \$10 million				
c. Total Work	8	3. \$250,000 to less than \$500,000 8. \$10 million to less than \$25 million				
		4. \$500,000 to less than \$1 million 9. \$25 million to less than \$50 million				
		5. \$1 million to less than \$2 million 10. \$50 million or greater				
12. AUTHORIZED REPRESENTATIVE <i>The foregoing is a statement of facts.</i>						
a. SIGNATURE 					b. DATE 11/09/2021	
c. NAME AND TITLE Alvinette Teal, P.G. President						



MHZ JV

A MENTOR PROTÉGÉ JOINT VENTURE

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