SOQ 24-020
Coastal Engineering Consultant Services as needed Parish-wide

submitted to: **Jefferson Parish Council**

submitted by: **WSP USA Inc.**

July 16, 2024

Technical Evaluation Committee (TEC) Questionnaire Instructions

- The Technical Evaluation Committee (TEC) Questionnaire shall be used for professional services related to architecture, engineering, or survey projects.
- **The TEC Questionnaire should be completely filled out. Complete and attach ALL sections. Insert "N/A" or "None" if a section does not apply or if there is no information to provide.**
- Questionnaire must be signed by an authorized representative of the Firm. Failure to sign the questionnaire shall result in disqualification of proposer pursuant to J.P. Code of Ordinances Sec. 2-928.
- All subcontractors must be listed in the appropriate section of the Questionnaire. Each subcontractor must provide a complete copy of the TEC Questionnaire, applicable licenses, and any other information required by the advertisement. Failure to provide the subcontractors' complete questionnaire(s), applicable licenses, and any other information required by the advertisement shall result in disqualification of proposer pursuant to J.P. Code of Ordinances Sec. 2-928.
- If additional pages are needed, attach them to the questionnaire and include all applicable information that is required by the questionnaire.

TEC Professional Services Questionnaire

A. Project Name and Advertisement Resolution Number:

SOQ 24-020-Coastal Engineering Consulting Services as needed Parish Wide

B. Firm Name & Address:

WSP USA Inc.
1100 Poydras Street
Suite 1175
New Orleans, LA 70163

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

Ian Chaney, PE
Supervising Engineer
277 Bendix Rd., Suite 300
Virginia Beach, VA 23452
757-466-9615
Ian.Chaney@wsp.com

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

Jerald Ramsden, PE
Vice President, Ports and Marine Engineering
1300 S.W. Fifth Avenue, Suite 3100
Portland, Oregon 79201
503-274-1337
Jerald.Ramsden@wsp.com

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

3 Administrative	___ Estimators	2 Specification Writers
___ Architects (Licensed)	___ Geologists	2 Structural Engineers
___ Chemical Engineers	2 Geotechnical Engineers	1 Graduate Engineers
8 Civil Engineers	___ Interior Designers	6 Project Managers
2 Construction Inspectors	___ Landscape Architects	___ Clerical
___ Ecologists	___ Land Surveyor	2 Grant/Funding Specialist
1 Electrical Engineers	1 Mechanical Engineers	2 Sanitary Engineers
4 Engineer Intern	2 Environmental Engineers	
___ Professional Land Surveyors		38 **TOTAL**

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

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

TEC Professional Services Questionnaire

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

1. None

2.

H. Has this JOINT-VENTURE previously worked together? Please check:
YES ◯ **NO** ◯

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

Name & Address:	Specialty:	Worked with Firm Before (Yes or No):
1. None		
2.		
3.		

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

None

TEC Professional Services Questionnaire

K. List the professional in charge, key persons, specialists, and individual consultants anticipated for this Project and provide their relevant information below. If necessary, please attach additional documentation (i.e. resume) that demonstrates the employment history and experience of the Firm's key persons that may assist in the completion of this Project. Please attach additional pages if necessary.

PROFESSIONAL IN CHARGE OF PROJECT:

Name & Title:

Rebecca D. Howell, PE
Assistant Vice President Water Resources Engineer

Project Assignment:

Professional in Charge / Project Manager / Water Resources Engineer

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

2.5

Education: Degree(s)/Year/Specialization:

BS, Civil Engineering, Louisiana State University / 2012
BS, Atmospheric Science, University of Louisiana at Monroe / 2010

Active registration: Year first registered/discipline:

Professional Engineer: Louisiana (PE.0042559)/ 2018 / Civil, Mississippi (PE 34228) / 2023 / Civil

Other experience and qualifications relevant to the proposed Project:

Rebecca is a civil engineer with consulting experience in engineering, design, project management. She is committed to providing quality service to stakeholders in the private and public sector for the design, management, bidding/contracting and construction administration for a broad range of civil engineering projects. Rebecca's project experience includes water distribution system design, sanitary and storm water collection systems, drainage impact analysis, HEC-RAS modeling (1D and 2D), sanitary sewer lift station and force main design, off-system bridge replacements, subdivision, and commercial site design.

REBECCA DAVEZAC HOWELL, PE

Assistance Vice President, Water Resources Engineer

Years with the firm

2.5

Years total

12

Education

Louisiana State University, BS in Civil Engineering, 2012

University of Louisiana at Monroe, BS in Atmospheric Science, 2010

Professional Registrations

Professional Engineer: LA 0042559; MS 34228

Professional Certifications

Advanced Benefit Cost Analysis Training, National Emergency Planning and Training Association, 2019

CAREER SUMMARY

Rebecca Davezac Howell is a civil engineer with consulting experience in engineering, design, project management. She is committed to providing quality service to stakeholders in the private and public sector for the design, management, bidding/contracting and construction administration for a broad range of civil engineering projects. As project manager, she is responsible for project planning, delegating, and organizing resources as well as tracking costs and managing budgets for multiple engineering projects as well as managing design teams and sub-consultants while leading complex projects. Rebecca's project experience includes water distribution system design, sanitary and storm water collection systems, drainage impact analysis, HEC-RAS modeling (1D and 2D), sanitary sewer lift station and force main design, off-system bridge replacements, subdivision, and commercial site design.

RELEVANT PROJECT EXPERIENCE

- 2023-035D-WRB Kenner Waterline Project (21st Street to 14th Street), Jefferson Parish, LA. Project Engineer/Project Manager. WSP has been selected to provide design services for installation of a new 42" transmission line along Airport Access Rd from 21st Street to 14th Street. Anticipated installation methods will include CompressionFit, open cut and horizontal direction drilling (HDD). The segment of waterline includes an aerial crossing over West Metairie Canal, which will be relocated under the canal via HDD installation method. Project is currently in contract negotiations with Jefferson Parish and work is anticipated to start Q3 of 2024.
- Program Management, Port of South Louisiana, Board of Commissioners Port of South Louisiana, St. Charles, St. James and St. John Parishes, Louisiana. Project Manager/Project Engineer. The Program Management assignment includes but is not limited to oversight of the Master and Strategic Planning efforts including implementation, Grants Application and Management, Procurement Support including Assessment of Consultant Capabilities, Alternative Delivery and Public Private Partnerships, Design Management and Construction Administration through the life of the contract. The Program also includes the creation of a Project Controls system for the Port. As Project Manager and Project Engineer, Ms. Howell is responsible for project programming, holding pre-design kickoff meetings between the Port and design consultants, design oversight for civil engineering projects, which includes review of consultant's fee proposal, preliminary and final construction documents and Engineer's Construction Cost Estimate. Design oversight includes engineering oversight of the Globalplex and Executive Regional Airport Drainage Master Plan and Access Road to Building 71 Projects. She is responsible for compiling consultant monthly project status updates to the Port for projects in design and construction, which are provided to the Board of Commissioners for the monthly Construction Meeting. As a task order based contract, Rebecca is also responsible for scoping WSP task orders, developing manhour estimates, budgets and schedules, as well as delivering each task on time and within budget.
- Hwy 3127 Oxidation Pond, Hahnville, Louisiana: Project Manager. St. Charles Parish contracted WSP for professional services to perform a feasibility study and analysis for an oxidation pond in Hahnville, LA. WSP is conducting a planning-level study to evaluate available data and establish a basis-of-design concept for a new 2 MGD lagoon-type wastewater treatment system (oxidation pond) to discharge into a natural wetland for wetland assimilation. The proposed facility includes: two-cell lagoon, aeration system, circulation pumps, pond dike, headworks that include mechanical trash rake/bar screening, emergency relief structure including emergency disinfection, open-channel UV disinfection, provision for standby power, and a utility building to house electrical service for misc. storage. As Project Manager, Rebecca was responsible for developing the project schedule, managing a team of subconsultants, holding bi-weekly TEAMs meetings with the design team, invoicing, QA of the final deliverable package and successfully delivering the project within the 6 month timeline set by the LDEQ loan. The study included a basis of

design, conceptual design plans, technical specifications and Preliminary Construction Cost Estimate.

- BREC Greenwood Park and Baton Rouge Zoo Master Plan Phase 1, Baker, Louisiana. Project Manager/Project Engineer: Phase 1 of the master plan included infrastructure improvements to the existing Baton Rouge Zoo that were required for re-accreditation. Rebecca led a team of engineers in the design of infrastructure improvements including the following: miscellaneous onsite drainage improvements and stormwater outfall improvements, upgrades to existing water distribution system which includes the addition of 12,000 linear feet of new water main (potable and fire protection) to create a loop distribution system with a secondary tie-in to the waterworks water main along Highway 19, 7,200 linear feet of new gas main, separation of the combined sanitary and storm sewer system which required installing 700 linear feet of gravity sewer, along with 6,300 linear feet of subsurface drainage system conveying stormwater from the exhibits to an onsite stormwater pond and treatment system. Rebecca also led the design for converting the onsite wastewater treatment plant and wetland pond to an onsite detention pond for exhibit stormwater with a 1,000-gallons-per-minute pump and ultraviolet disinfection system to treat the exhibit influent prior to discharging into Cypress Bayou. As project manager, she attended weekly consultant team calls, coordinated the civil design with architecture, mechanical, electrical, life safety and landscaping consultant team members, presented proposed infrastructure improvements to key members of the client staff (BREC) for the schematic design, design development, and final design phases, overseeing the development of the contract documents.
- Isle de Jean Charles Resettlement Project – Phase III, Louisiana Office of Community Development – Disaster Recovery Unit (OCD-DRU), Terrebonne Parish, Louisiana, Project Engineer. Mrs. Howell led a team of engineers in the design of a 64-lot subdivision which included 2 miles of concrete roadway and sidewalks with a combination of open ditch and subsurface roadside drainage, 7,700 linear feet of gravity sewer, two sanitary sewer lift stations and 2.5 miles of sanitary sewer force main, three recreational ponds and one dry detention pond and addition of a right-turn lane along Highway 24. The project, involved the master planning of a new development to accommodate voluntary resettlement of an island community in response to significant environmental degradation from ongoing coastal land loss, subsidence, and sea level rise. Her role also included obtaining permits from Terrebonne Parish and LADOTD, Construction Administration and delivering the project on time with deadline constraints dictated by the project funding source. Client: Louisiana Land Trust
- Barringer Foreman Sanity Sewer Improvements, Baton Rouge, Louisiana: project manager and design engineer for the Barringer Foreman commercial development sanitary sewer improvements. The project included decommissioning the existing wastewater treatment plant, design and installation of 900-linear-foot force main to tie into public gravity sewer system and pump upgrades to the existing on-site lift station.
- Harveston District Pump Station and Force Main Phase 1, Baton Rouge, Louisiana: project engineer led a team of engineers in the design of the first residential and commercial phases of the pump stations and force main. Ms. Howell led the team in the design of the 600 gpm sanitary sewer duplex lift station and 16,000 LF of forcemain, ranging in sizes from 8” to 16”. The force main system discharges into an onsite wastewater treatment/wetland assimilation plant and included a bypass connection to an existing 30” public sanitary sewer forcemain. This project included a jack and bore of a 16” forcemain under a state highway. The lift station was designed to meet initial and future/full-buildout wastewater conditions of the development.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Max Nassar
Senior Vice President
Senior Managing Director, Gulf States Business Leader

Project Assignment:

Officer in Charge

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

7

Education: Degree(s)/Year/Specialization:

BA, Psychology Louisiana State University / 1976

Active registration: Year first registered/discipline:

None

Other experience and qualifications relevant to the proposed Project:

Max is a Louisiana native who has spent 30 years in executive level positions in Fortune 500 Companies in both the Manufacturing/Industrial Sector and AE Consulting Services Sector. Over the past 25 years, he has overseen a multiplicity of infrastructure projects in the Southeast United States and in Central America and with a value in the billions. Many of these projects have been FEMA Federal Aid Funded in Louisiana and have been performed for a variety of public and private clients. Max possesses demonstrated experience in NEPA Project Leadership, Government and Stakeholder Relations, Program Management, Project Management, Program and Project Development, and Construction Management and Inspection services related to major infrastructure and facilities projects which include roadway, highway and bridge infrastructure, drainage and utilities infrastructure, railways and transit ways, airport facilities, and various waterfront infrastructure and facilities.

MAX NASSAR

Senior Vice President
Senior Managing Director, LA, MS, AL

Years with the firm

7

Years total

40

Education

BA, Psychology, Louisiana State University, Baton Rouge, Louisiana, 1976

Post-graduate studies in Business, Finance, Labor Relations, and Industrial Operations, Tulane University and Loyola University, New Orleans, Louisiana

CAREER SUMMARY

Mr. Nassar is a Louisiana native who has spent 30 years in executive level positions in Fortune 500 Companies in both the Manufacturing/Industrial Sector and AE Consulting Services Sector. Over the past 25 years, he has overseen a multiplicity of infrastructure projects in the Southeast United States and in Central America and with a value in the billions. Many of these projects have been in Louisiana and Mississippi and have been performed for a variety of public and private clients including Louisiana Department of Transportation and Development, The Mississippi Department of Transportation, The Louisiana Department of Natural Resources, The New Orleans Regional Planning Commission, The New Orleans Regional Transit Authority, The Louisiana Coastal Protection and Restoration Authority, the Jackson Mississippi Municipal Airport Authority, the Louis Armstrong New Orleans International Airport, the Port of New Orleans, the Port of South Louisiana and others.

Mr. Nassar possesses demonstrated experience in NEPA Project Leadership, Government and Stakeholder Relations, Program Management, Project Management, Program and Project Development, and Construction Management and Inspection services related to major infrastructure and facilities projects which include roadway, highway and bridge infrastructure, drainage and utilities infrastructure, railways and transit ways, airport facilities, and various waterfront infrastructure and facilities.

PROFESSIONAL EXPERIENCE

- **Bonnabel Boulevard Roadway Improvements (Metairie Rd. to I-10), Jefferson, LA:** Project Principal. The project, which is a Federal aid program with joint FHWA and Jefferson Parish founding, will provide a 3" mill and overlay of the roadway surface, full depth concrete patching and curb replacement. The project required coordination Jefferson Parish and LADOTD engineering staff, the creation of preliminary drawings per LADOTD standards, establishment of a proposed profile to aide surface drainage and the creation proposed cross sections. The Project also included a Phase I Noise Mitigation Investigation at the Interstate 10 Overpass. The design work was performed with Inroads SS2. Design guidelines followed included Jefferson Parish, LADOTD and AASHTO. Client: Jefferson Parish. Dates: September 2020 – Present.
- **Louisiana Coastal and Protection Authority Mid-Barataria Sediment Diversion Project, Plaquemines Parish, Louisiana:** Max is the principal-in-charge for WSP's team providing designs for floating U-structures and immersed tube tunnels, able to be placed 400 feet out into the Mississippi River. The u-structure and immersed tube tunnels were designed to be constructed in the project's conveyance channel and then floated through the breached Mississippi River Levee (MRL) and immersed onto a pre-driven pile foundation. At completion, the project will accommodate a diverted flow of more than 75,000 cfs of sediment-laden water that will ultimately be deposited and dispersed into the Barataria Bay, enabling marsh creating for future decades. July 2017 to present
- **US Army Corps of Engineers, New Orleans District, Design Report for the Culvert/Bridge Construction at Lapalco Boulevard and Grand Cross Canal, Jefferson Parish, Louisiana:** Deputy Project Manager for the preparation of the 30% design report for evaluation of the alternatives for improving the drainage capacity of the Grand Cross Canal at its intersection with Lapalco Boulevard. The alternatives included adding additional culverts to the existing culverts or replacing the existing culverts with bridges to provide for the increased capacity of

the canal crossing. Prepared conceptual designs and cost estimates for both alternatives and provided a recommendation regarding the best solution based upon factors such overall cost, disruption to the public, traffic accommodation, and conflicts with existing utilities.

- **Louisiana Department of Natural Resources, Ship Shoal: Whiskey Island West Flank Restoration, Terrebonne Parish, Louisiana:** Project Principal. The Project is located on Whiskey Island, a barrier island in the Isles Dernieres Chain. The Whiskey Island West Flank project was undertaken to extend Whiskey Island westward. The project's objectives included: 1) restoring the integrity of the west flank of Whiskey Island to retain its structural function; 2) adding new offshore sediment into the west flank; and 3) restoring roughly 387 acres of barrier island habitat into the island's western flank.
- **Louisiana Department of Natural Resources, Turtle Cove Shore Protection Project, St. John the Baptist Parish, Louisiana:** Deputy Project Manager. This project involved the construction of a 1,640 ft rock-filled gabion breakwater to maintain and protect the Lake Pontchartrain shoreline that shelters "The Prairie" (an 800-acre expanse of shallow, open water marsh bordered by organic freshwater marsh) from high wave energies and to encourage sediment deposition behind the gabion structure. There was additional maintenance efforts followed.
- **Program Management, Port of South Louisiana, Board of Commissioners Port of South Louisiana, St. Charles, St. James and St. John Parishes, Louisiana LA. USA.** Project Principal. The Port of South Louisiana (The Port) is a major bulk and grain exportation facility and touts itself as the "largest tonnage port district in the western hemisphere". The Port Jurisdiction encompasses 54 Mississippi River Miles midway between New Orleans, Louisiana and Baton Rouge, Louisiana and offers excellent intermodal opportunities via Mississippi River deep draft, East-West and North-South Interstate Highways, three Class 1 Rail Lines, and air via an existing executive airport.

  The Program Management assignment includes but is not limited to oversight of the Master and Strategic Planning efforts including implementation, Grants Application and Management, Procurement Support including Assessment of Consultant Capabilities, Alternative Delivery and Public Private Partnerships, Design Management and Construction Administration through the life of the contract. The Program also includes the creation of a Project Controls system for the Port.
- **Review of Existing Wharf Condition Assessment Reports, New Orleans LA, USA:** Project Principal for this project which included a review of the assessment of existing conditions at the Poland Avenue Wharf, the Seventh street Wharf, and the Louisiana Avenue Wharf. This independent review of the existing condition reports prepared by others, and included the provision of alternative repair recommendations and cost estimates for the facilities. Client: The Board of

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Ian Chaney, PE
National Director – Geotechnical & Tunneling
Senior Vice President

Project Assignment:

Principal in Charge / Geotechnical Engineer

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

21

Education: Degree(s)/Year/Specialization:

MS, Geotechnical Engineer, Virginia Technical Institute / 2002
BS, Mining Engineering, Virginia Technical Institute / 2001

Active registration: Year first registered/discipline:

Professional Engineer: Louisiana (PE. 0042288) / 2018 / Civil
Professional Engineer (other states): Virginia, Tennessee, Louisiana, Florida, North Carolina, Kentucky

Other experience and qualifications relevant to the proposed Project:

Ian Chaney is the National Director for Geotechnical & Tunneling for WSP. He is experienced in multi-disciplinary project management and leading geotechnical project efforts. His technical experience includes providing detailed and concept designs for marine facilities, tunnels, bridges and buildings that consider site-specific geotechnical and environmental conditions, as well as the spectrum of multi-disciplinary concerns inherent with large infrastructure construction activities.

IAN J. CHANEY, P.E.

National Director – Geotechnical & Tunneling
Senior Vice President

Years of Experience

21

Education

M.S. Geotechnical Engineering, Virginia Tech, 2002

B.S. Mining Engineering, Virginia Tech, 2001

Professional Registrations

Professional Engineer: Virginia, Tennessee, Louisiana, Florida, North Carolina, Kentucky

Professional Affiliations

American Society of Civil Engineers

Underground Construction Association of SME

Deep Foundations Institute

PROFILE

Ian Chaney is the National Director for Geotechnical & Tunneling for WSP. He is experienced in multi-disciplinary project management and leading geotechnical project efforts. His technical experience includes providing detailed and concept designs for marine facilities, tunnels, bridges, and buildings that consider site-specific geotechnical and environmental conditions, as well as the spectrum of multi-disciplinary concerns inherent with large infrastructure construction activities.

PROFESSIONAL EXPERIENCE

Mid-Barataria Sediment Diversion Project – New Orleans, Louisiana: As part of this CMAR project to design an intake structure and 2-mile long conveyance channel from the Mississippi River, Ian is the lead designer and WSP project manager providing designs for a concrete intake approach. Options considered were floating U-structures, able to be placed 400 feet out into the Mississippi River, cast-in-place concrete structures with sheet pile seepage cutoffs, and a bored tunnel. The U-structure is being advanced and is being constructed on a piled foundation. At completion, the project will accommodate a diverted flow of more than 75,000 cfs of sediment-laden water that will ultimately be deposited and dispersed into the Barataria Bay, enabling marsh creating for future decades.

Gamesa Offshore Wind Turbine, Chesapeake Bay, Virginia: Project Manager responsible for the final design and installation of what would have been the first offshore wind turbine constructed in the United States. Project was cancelled after design completion, and consists of the design and installation of a 5 megawatt wind turbine founded in an offshore environment. Detailed geotechnical and structural analysis were performed by WSP to account for the static loads and dynamic operation of the turbine, coupled with the hydrodynamic loading imparted by waves and currents. An extensive offshore geotechnical engineering investigation utilizing CPTs, soil borings and laboratory testing was implemented to define subsurface conditions, critical for determining lateral soil spring values and for analyzing pile drivability.

Virginia Port Authority – North Wharf Extension, Norfolk, Virginia: geotechnical engineer responsible for the geotechnical design of sheet pile bulkheads consisting of both cantilever sections and anchored sections. In addition, Ian provided recommendations for ground improvement behind the bulkhead consisting of deep vibro-compaction of soils and staged construction and was responsible for the testing and evaluation of the vibro-compaction operations.

Puerto Bolivar Due Diligence Study, Ecuador: Geotechnical Engineer responsible for the due diligence review of all geotechnical design and construction aspects of the project that included a 450m wharf expansion, rock bund and land reclamation, ground improvements, and dredging.

Hampton Roads Bridge-Tunnel Expansion, Norfolk, Virginia: Engineering Manager for this $4B marine bridge and tunnel expansion project that consists of two new bored tunnels under the Hampton Roads shipping channel, artificial island expansion, access dredging, 4 miles of new bridge trestles and 4 miles of highway widening on land. On behalf of the owner, VDOT, Ian is responsible for all marine design and construction for this project that encompasses tunnels, island expansion, scour protection, Navy coordination and permitting. The project also includes two major excavations at the manmade islands – each over 50' deep and underwater, that are to be dewatered for launching and receiving the Tunnel Boring Machine.

Dominion Energy VOWTAP Offshore Wind Turbines: Provided engineer-of-record geotechnical services to Orsted for two, 6 MW offshore wind turbines to be constructed 30 miles off the Virginia Beach coast line. Ian was responsible for the foundation design of the offshore monopile foundations, scour design and constructability aspects of the projects.

Midtown Tunnel – Martin Luther King Expressway Project, Norfolk and Portsmouth, Virginia: on this long-term, $2.1B Mega-Project, Ian's duties started as the geotechnical design manager and finished with being the on-site Project Manager during construction. As the on-site Design Manager During Construction, Ian was responsible for daily management of design services during construction, claim mitigation and negotiation, and financial decisions regarding design work.

As geotechnical design manager for this immersed tunnel project that parallels an existing immersed tunnel, Ian was responsible for the management of all geotechnical, underground and marine aspects of the design and the coordination of the these works between the civil, geotechnical and structural disciplines. Work consisted of dredging and foundation preparation for the immersed tubes, immersed tube design, island reclamation, buoyancy and transportation, as well as the design of the support-of-excavation system that included over 4,000 lf of in-water sheet piling, some of which utilized tiebacks and underwater struts, and that included two 50-foot deep dewatered excavations for the tunnel approaches. The scope also required the remediation of the Portsmouth Marine Terminal, which the tunnel passes through. The port facility was returned with a 750-psf live-load allowance, with no reduction in service due to the newly constructed tunnel.

UK Round 3 Offshore Wind Farm Study, Southern North Sea, UK: Ian provided review services for the design basis document and concept-level turbine support foundation details. The study investigated various foundation types (monopile, jacket and gravity base) for numerous turbine sizes.

Kwajalein Wind Project, Marshall Islands: for this pilot project on a remote Pacific Ocean Island, Ian prepared conceptual foundation designs for nearshore, 6-megawatt, 115-meter diameter wind turbines founded on a coral reef. Due to the remote nature of the project, conventional offshore construction methods could not be implemented. Therefore, more conventional, drilled foundation elements and tiedowns to "tune" the dynamic stiffness of the structure was utilized.

Brooklyn Navy Yard, Brooklyn, New York: geotechnical engineer responsible for the development and design for all aspects of a Confined Disposal Facility and the protection of an on-site sewer outfall, including design recommendations, construction specifications, and construction drawings. The sewer outfall, which would be affected and destroyed by the construction of the CDF, was designed to be protected by the placement of an A-frame tieback retaining wall or by a bridged structure in which the loads that would be imposed by the placement of dredge fill were transferred to the A-frame structure, anchored into the underlying bedrock. The CDF was optimized using staged surcharge programs that would ultimately allow for land reclamation for useable land space.

Chesapeake Bay Bridge-Tunnel – Parallel Thimble Shoals Tunnel Pursuit, Virginia Beach, Virginia: As pursuit manager, Ian was responsible for preliminary designs of both an immersed tunnel option and a bored tunnel option, including manmade island extensions, ground improvement, and protection of the existing tunnels and islands, built in the Chesapeake Bay on a subsurface consisting of up to 80 feet of soft compressible clays.

Enighed Pond Backland Improvement, St. John, US Virgin Islands: geotechnical engineer responsible for the design of a ground improvement scheme to make a 5-acre parcel land consisting of dredge spoils usable for port operations. Ground improvement

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Jerald Ramsden, Ph.D., PE
Vice President Ports & Marine Engineering

Project Assignment:

Coastal Engineer

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

25

Education: Degree(s)/Year/Specialization:

Ph.D., Civil Engineering (emphasis on coastal engineering), California Institute of Technology, Pasadena, CA1993
M.S., Ocean Engineering, Oregon State University, Corvallis, OR1987
B.S., Civil Engineering, Oregon State University, Corvallis, OR1985

Active registration: Year first registered/discipline:

Professional Engineer: Louisiana, 2003 (30927) / Civil ,); Texas, 2016 (123749); Oregon, 1996 (18786PE); Washington, 1999 (35782); Florida, 2003 (60566)

Other experience and qualifications relevant to the proposed Project:

Jerald Ramsden is a supervising engineer with WSP who specializes in coastal and waterway engineering. As a consultant, he assists public and private clients in planning and engineering for waterway facility siting, including bankline and channel stabilization; dredging and disposal alternatives development, design and permitting; dilution studies; wave and current loads on structures; and application of mathematical models to analyze coastal, estuarine and riverine processes. He has performed hydraulic analyses to support a variety of coastal resiliency studies, facility siting of deep draft terminals, including container, cruise and bulk terminals. He has also done hydraulic analysis and permitting for recreational marinas, shoreline redevelopment and enhancement, and repair or maintenance of existing facilities. His clients have included municipalities, regional, national and international governments, associations, port authorities, other engineering consultants, law firms and private industry.

JERALD D. RAMSDEN, Ph.D., P.E.

Vice President Ports & Marine

Years with the firm

25

Years total

34

Education

Ph.D., Civil Engineering (emphasis on coastal engineering), California Institute of Technology, Pasadena, CA, 1993
M.S., Ocean Engineering, Oregon State University, Corvallis, OR, 1987
B.S., Civil Engineering, Oregon State University, Corvallis, OR, 1985

Professional qualifications

Professional Engineer: Oregon, 1996 (18786PE); Washington, 1999 (35782); Florida, 2003 (60566); Louisiana, 2003 (30927) Idaho, 2015 (16396); Texas, 2016 (123749)

CAREER SUMMARY

Jerald Ramsden is a supervising engineer with WSP who specializes in coastal and waterway engineering. As a consultant, he assists public and private clients in planning and engineering for waterway facility siting, including bankline and channel stabilization; dredging and disposal alternatives development, design and permitting; dilution studies; wave and current loads on structures; and application of mathematical models to analyze coastal, estuarine and riverine processes. He has performed hydraulic analyses to support a variety of coastal resiliency studies, facility siting of deep draft terminals, including container, cruise and bulk terminals. He has also done hydraulic analysis and permitting for recreational marinas, shoreline redevelopment and enhancement, and repair or maintenance of existing facilities. His clients have included municipalities, regional, national and international governments, associations, port authorities, other engineering consultants, law firms and private industry.

Jerald performs computer analyses for floodrise determinations; steady and unsteady river flows; wind waves and vessel wake generation; wave transformations; wave and current loads on a variety of structures; dredge prism design; and sediment transport. His work has included the design and/or oversight of field studies to monitor river, estuarine and coastal currents; map bathymetry; sample sediments; monitor water quality; evaluate vessel-generated waves; and inspect submerged tunnel armor cover, bulkheads and slope protection.

PROFESSIONAL EXPERIENCE

- **Climate Change Impacts on Transportation Infrastructure, Mobile Co., Alabama**: coastal engineering lead for engineering analysis of climate change impacts on transportation infrastructure, including roads, bridges, tunnels, rail, ports, airports and pipelines. He provided input during development of hurricane scenarios and reviewed hurricane simulation results; authored sections of engineering report involving storm surge, sea level rise, wind and wave conditions and analysis of wave loads on a pile supported dock at a marine terminal.
- **Gulf Island National Seashore Park Road Improvements, Biloxi, MI:** coastal engineer for wind waves and wave transmission effects for improvements to a bridge and approach causeways in an exposed tidal wetland area. Several scour countermeasures and a wave protection revetment were assessed for protection of the Park Road and the new structure.
- **Turning Notch Expansion, Port Everglades, Florida**: lead coastal engineer responsible for review of analyses for hydrodynamics, wind wave analysis and dune response to storm surge and waves; analysis of vessel-induced scour for existing and proposed deep draft terminals, including new generation of Post-Panamax container vessels; design of rock-armored revetment protection; and assessment of overtopping conditions along the existing and proposed berths.
- **Barbour's Cut Shoreline Stabilization, Port of Houston, Texas**: coastal engineer responsible for analyzing wind waves and nearshore wave transformation effects for design of new bankline protection revetment.
- **Veterans Drive, Charlotte Amalie, St. Thomas, U.S. Virgin Islands**: coastal engineering lead for improvements to a frontage road along a coastal embayment on behalf of owner, USVI Dept. of Public Works. Responsible for coastal engineering analyses including use of hurricane wind field, hydrodynamics, wave transformation and empirical simulation models to develop hurricane induced

design conditions at the project site including water levels, waves and currents for use in design of bulkheads, a revetment and a low level bridge; armor sizing for revetments; wave load and scour calculations for seawalls, piles and the bridge deck including wave slamming; and scour calculations for combined currents and waves.

- **Port of Brisbane, Brisbane, Australia**: coastal engineer responsible for quality control review of coastal engineering analysis and breakwater design for a 1-mile-long perimeter berm that serves as a dredged material confinement facility for expansion at the port.
- **Pensacola Bay Bridge Replacement, Pensacola, Florida**: lead coastal engineer on design-build team responsible for revetment design for approaches, scour protection design for retaining walls, and analysis of hydrodynamic loads for bridge foundations, including water levels, waves and currents.
- **Midtown Tunnel, Elizabeth River, Portsmouth and Norfolk, Virginia**: coastal engineering lead for developing rock blankets, anchor bands and revetments to protect tunnel and associated fill from scour due to hurricanes, Nor'easters, tsunamis, deep draft and shallow draft vessels. Jerald conducted the quality control review of hydrodynamic modeling for currents, wind wave analysis and tug induced scour velocity calculations. He conducted research on vessel activity and properties at the site, analyzed vessel induced return flow, vessel induced waves and utilized propeller wash results to designed rock blankets and revetments to resist these de-stabilizing effects. He also analyzed shipping activity and ship details including cargo to recommend sunken ship pressures for consideration during tunnel design.
- **Shoreline protection, Columbia River, Vancouver, Washington**: Serving as one of the hydraulic engineers of record for the Port of Vancouver, USA. Provided oversight and review of wind/wave analysis and assessment of other hydraulic conditions from existing data including water levels and currents; rock armor calculations; revetment toe depth; and granular filter design for a two-layer system due to the fine sand fill. Jerald provided recommendations on revetment crest interfacing with existing infrastructure, support with cost estimating, and input on construction phasing.
- **Maintenance Dredging, International Terminals, Portland, Oregon**: project manager responsible for permitting and dredge plan development for maintenance dredging at five berths, including Endangered Species Act (ESA) consultation and negotiation of an effects- based water quality monitoring plan. He served as engineer of record, for initial dredging of 11,000 cubic yards, responsible for dredge plan development, design, construction plans, and technical specifications; directed subconsultant work, including hydrographic and upland surveys, two biological assessments and a geotechnical study of slope stability; and provided construction support, including water quality monitoring and reporting, construction monitoring, acceptance and payment recommendations, as-built drawings and preparation of post-construction reports for regulatory agencies.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Stephen Blair, PE
National Coastal Resiliency Practice Lead
National Ecological Restoration Lead

Project Assignment:

Civil Engineer

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

13

Education: Degree(s)/Year/Specialization:

Master of Science, State University of New York at Buffalo / 1992 / Water Resources Engineering
Bachelor of Science, State University of New York at Buffalo / 1990 / Civil Engineering

Active registration: Year first registered/discipline:

Professional Engineer: FL (83121) 2017/Civil

Other experience and qualifications relevant to the proposed Project:

Stephen has extensive experience managing large water and environmental programs. He has served as a technical expert on projects involving surface and groundwater hydrology, watershed assessment, environmental damage mitigation and restoration, water and wastewater infrastructure planning, and design and construction.

STEPHEN BLAIR, PE

Civil Engineer

Years with the firm

13

Years total

32

Professional qualifications

Professional Engineer: FL (83121)

CAREER SUMMARY

Stephen has extensive experience managing large water and environmental programs. He has served as a technical expert on projects involving surface and groundwater hydrology, watershed assessment, environmental damage mitigation and restoration, water and wastewater infrastructure planning, and design and construction.

EDUCATION

MS, Civil Engineering, State University of New York at Buffalo	1992
BS, Civil Engineering , State University of New York at Buffalo	1990

PROFESSIONAL EXPERIENCE

- **Franklin-98 Living Shoreline Project, Franklin County, Florida.** Mr Blair is serving as design engineer for this 12 mile long living shoreline project involving installation of nearshore oyster reefs, to create intertidal marshes. As part of predesign studies, Mr Blair prepared and Coastal Conditions Analysis. The report consolidated data to define key design parameters with regard to tidal datums, historic storm surge elevations and wind conditions, existing bathymetric data, etc. The assessment also included numerical wave modeling to determine probable wave characteristics (e.g., wave heights and periods) during average annual conditions and varying-level storm events. Mr Blair is currently supporting the development of a 30 percent design documents for the project.
- **New River Middle School Living Shoreline Design Broward County, Florida:** Stephen developed conceptual design alternatives to implement an innovative living shoreline project along 500 feet of New River shoreline at the New River Middle School (NRMS). Options range from enhancement of the existing bulkhead to removal of some or all the wall. Additional amenities may include boardwalks, trails, and an outdoor pavilion that provide opportunities to observe marine life and collect water samples. The overall intent of the project is to create a world class living classroom to educate the students and inform the public, at the same time providing a resilient, ecologically enhanced shoreline. Stephen is currently leading design activities to move this project forward.
- **Riverside Conservancy Living Shoreline Design, Volusia County, Florida:** Stephen led design activities for this living shoreline project along 100 feet of the Intracoastal waterway shoreline. This project will serve as a demonstration of a simple, affordable way for local residents to replace their existing concrete bulkhead with an ecologically enhance and resilient shoreline
- **Lakeside Ranch Stormwater Treatment Area - Design Update and Engineering During Construction, Martin County, Florida:** Stephen managed on two consecutive projects involving the Lakeside Ranch Stormwater Treatment Area for the South Florida Water Management District. During the first phase, Stephen oversaw preparation of design updates to bring the original design (completed in 2011) in line with current South Florida Water Management District. During a second phase, Stephen managed engineering services during construction, including review and approval of contractor submittals, responses to requests for information, review of redlines, and preparation of record drawings. The project involved construction of a stormwater treatment area consisting of 800 acres of emergent wetland plants for removal of phosphorous with a construction value of $34 million. The project entailed construction of more than 12 miles of levees and

nine automated gated weir structures; a bridge on U.S. 98 over the stormwater treatment area discharge canal; and facilities to support a future recreational area, various weir structures, overflow structures, environmental and hydraulic monitoring platforms, and inlet and outlet canals..

- **Alligator Point Coastal Resiliency Alternatives Assessment, Franklin County, Florida:** Stephen performed an assessment of shoreline conditions, community assets at risk and developed alternatives to address the chronic beach erosion along the south shore of Alligator Point. Alternatives ranged from seawalls to protect critically impact roadways to beach restoration combined with breakwaters. Each alternative is evaluated against criteria related to effectiveness, implementation, and cost

- **Lakeside Ranch Stormwater Treatment Area - Design Update and Engineering During Construction, Martin County, Florida.** Mr. Blair served as project manager on two consecutive projects involving the Lakeside Ranch Stormwater Treatment Area for the South Florida Water Management District (SFWMD). The project involved construction of a stormwater treatment area consisting of 800 acres of emergent wetland plants for removal of phosphorous with a construction value of $34 million. The project entailed construction of more than 12 miles of levees and nine automated gated weir structures; a bridge on U.S. 98 over the stormwater treatment area discharge canal; and facilities to support a future recreational area, various weir structures, overflow structures, environmental and hydraulic monitoring platforms, and inlet and outlet canals. During the first phase, Mr. Blair oversaw preparation of design updates to bring the original design (completed in 2011) in line with current SFWMD. During a second phase, Mr. Blair managed engineering services during construction, including review and approval of contractor submittals, responses to requests for information, review of redlines, and preparation of record drawings.
- **U.S. Army Corps of Engineer (USACE), Trinity Uptown Program - North Bypass Channel, Fort Worth, Texas.** Mr. Blair served as the civil design team leader for relocation of a segment of the Trinity River in Fort Worth, Texas. Project elements included substantial rock excavation to form the channel, 30-foot-high reinforced concrete flood walls, a 25-foot-high by 4500-foot-long levee, and numerous recreational features. Mr. Blair was primarily responsible for coordination of civil aspects for the project with other disciplines including geotechnical, structural, architectural, landscaping, electrical, mechanical and plumbing. He also developed plans for management of stormwater, groundwater, and river flows during construction.
- **Route 219 Extension, Erie and Cattaraugus Counties, New York. As project engineer supporting an EIS for the New York State Department** of Transportation (NYSDOT), Mr. Blair modeled stormwater runoff to evaluate the potential for increased, project-induced flooding. He reviewed estimates of salt and heavy metal loadings from road runoff and applied GIS technology to evaluate land use data within the watershed and estimate runoff characteristics.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Nigel Temple, PhD
Coastal Ecologist

Project Assignment:

Coastal Restoration Ecologist

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

9

Education: Degree(s)/Year/Specialization:

PhD, Mississippi State University / 2021 / Coastal Restoration Ecology
Master of Science, University of Alabama / 2016 / Wetland Ecology
Bachelor of Science, Virginia Tech / 2013 / Biological Sciences

Active registration: Year first registered/discipline:

N/A

Other experience and qualifications relevant to the proposed Project:

Nigel has experience conducting research in stream and coastal wetland ecology. His experience includes innovative research designed to reduce the costs of restoration projects by designing and implementing low-cost environmental sensing technology and by investigating the effectiveness of various onshore and nearshore restoration designs using green infrastructure elements such as oyster reefs and wetland vegetation. His experience also includes planning, design, and management of coastal restoration projects and monitoring data, grant writing, site environmental assessment,
stakeholder engagement, and science communication to diverse audiences and using diverse media formats and in-person workshops.

NIGEL TEMPLE, PH.D.

Coastal Restoration Ecologist

Years with the firm

9

Years total

11

CAREER SUMMARY

Dr. Nigel Temple has over nine years of experience conducting research in coastal and wetland ecology. His experience includes innovative research designed to reduce the costs of restoration projects by designing and implementing low-cost environmental sensing technology and by investigating the effectiveness of various onshore and nearshore restoration designs using green infrastructure elements such as oyster reefs and wetland vegetation. His experience also includes planning, design and management of coastal restoration projects and monitoring data, grant writing, site environmental assessment, stakeholder engagement, and science communication to diverse audiences and using diverse media formats and in-person workshops.

EDUCATION

Ph.D., Coastal Restoration Ecology, Mississippi State University, Starkville, Mississippi	2021
M.S., Wetland Ecology, University of Alabama, Tuscaloosa, Alabama	2016
B.S., Biological Sciences, Virginia Tech, Blacksburg, Virginia	2013

PROFESSIONAL EXPERIENCE

- **Franklin 98 Living Shoreline Project, Franklin County, Florida:** In support of the Apalachee Regional Planning Council (ARPC), Dr. Temple is assisting with the design and monitoring of a large-scale reef and saltmarsh restoration project that will use an innovative design featuring novel reef designs. He has worked with project partners to review and refine project monitoring plans for submission to funders and has met and talked with local stakeholders about project goals and additional research opportunities. He manages environmental monitoring for the project including monitoring of submerged aquatic vegetation, saltmarsh plants and invertebrates, and manages field hydrodynamic data collection using wave gauges and an Acoustic Doppler Current Profiler. He also processes wave and environmental data for analyses for presentation to stakeholders and within technical reports.
- **Pensacola East Bay Oyster Habitat Restoration, Pensacola, Florida:** For The Nature Conservancy, Dr. Temple coordinates and manages monitoring efforts on a collaborative, large-scale oyster reef construction project. In his role, he manages quarterly environmental monitoring for the project including monitoring of submerged aquatic vegetation, invertebrates and transient fishes. In addition, he analyses data and prepares annual and quarterly technical reports.
- **Alligator Point Coastal Resiliency Alternatives Analysis, Alligator Point, Florida:** For the ARPC, Dr. Temple helped prepare an alternatives analysis report that provides guidance on maximizing coastal resiliency for Alligator Point. In his role, he provided technical expertise on the different alternatives proposed and participated in the drafting and editing of the report.
- **New River Middle School Living Shoreline, Fort Lauderdale, Florida**: Dr. Temple assists on a small-scale coastal restoration project working with a diverse stakeholder group including Florida Fish and Wildlife Commission (FWC), New River Middle School, and Broward County School Board staff to develop a habitat enhancement project. The developed concept involves removal of a portion of the

existing seawall, creation of a new wetland on the north side of the seawall, enhancement of the remaining seawall to add habitat value, and the addition of other amenities (e.g., boardwalk, dock, and outdoor classroom) to allow student access and educational opportunities.

- **Riverside Conservancy Living Shoreline, Edgewater, Florida:** Dr. Temple works with another cohort of stakeholders including the Riverside Conservancy, FWC and a private property owner to design, permit, and implement a living shoreline project along the Indian River. This living shoreline design will enhance the property, stabilize the shoreline, and allow the removal of an existing bulkhead.
- **Alabama Living Shorelines, Fairhope, Alabama:** Dr. Temple started a successful small business focused on homeowner-scale coastal restoration (e.g., living shorelines). Dr. Temple met with homeowners on site visits to learn about property goals and to collect data useful for project design. Dr. Temple also prepared permit and managed project construction while working closely with contractors to ensure timely and proper installation.
- **Evaluating the Restoration Value of Oyster Reef Breakwaters, Collaborative Research Project:** Dr. Temple is part of a research team including researchers from Mississippi State University, University of South Alabama, University of Melbourne (Australia), Virginia Institute of Marine Science, Rutgers University, University of Central Florida, Louisiana State University, Nicholls State University, USGS, and the Partnership for the Delaware Estuary, investigating the role of oyster reefs in attenuating waves and promoting other natural benefits in coastal environments. Previous work with this group has identified knowledge gaps in our understanding of the impact of oyster reef design features on wave attenuation. This work was then used to set up and acquire funding for ongoing work using Dr. Temple's low-cost wave gauges.
- **Wave Climate Assessment using Gauges and Hindcasted Wind-Wave Models, Mobile Bay, Alabama:** Dr. Temple used a combined in situ gauge deployment and modeling approach to assess wave climate (i.e., the magnitude and frequency of occurrence of varying wave parameters such as wave height and period) in Mobile Bay. In situ gauge data was collected from several sites within the bay and then compared to hindcasted wind-wave models using local wind data records and GIS to extract fetch distances and depth measurements from digital elevation models (DEMs). These comparisons were part of a larger study investigating plant growth and morphological responses along a wave climate gradient in Mobile Bay.
- **USGS Climate Change Research, Pearl River Wildlife Management Area, Louisiana:** while at the University of Alabama, Dr. Temple worked with a diverse group of researchers including modeling experts and wetland ecologists at the University of Alabama and USGS to design and implement a large-scale field experiment exploring plant responses along a sedimentation gradient. This project was designed to investigate biological mechanisms of elevation maintenance that are critical to marsh persistence in marshes threated by climate change and sea-level rise. In his role, Dr. Temple organized field sampling and data collection of a suite of hydro-edaphic and plant response variables to be used in structural equation models. To complement this experiment, Dr. Temple designed an innovative small-scale greenhouse experiment to investigate immediate above- and below-ground plant responses to sediment addition using clear planting enclosures.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Nabil Bawany, PE, CFM
Flood Resiliency Lead, FL

Project Assignment:

Coastal Resilience Specialist/Grants

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

2.5

Education: Degree(s)/Year/Specialization:

B.S., Bachelor of Science, Civil and Environmental Engineering, University of South Florida / 2014

Active registration: Year first registered/discipline:

Professional Engineer: Florida, 2019 (86625)
Certified Floodplain Manager, US-16-08996

Other experience and qualifications relevant to the proposed Project:

Nabil Bawany is a professional engineer specializing in resiliency, water resources and civil engineering design. His expertise includes flood resiliency projects, project management, stormwater management systems, drainage solutions, operational guidance, government policy creation and review, all phases of watershed management planning, hydraulic modeling, stormwater design, residential and commercial land development, and government policy and grant procurement. Mr. Bawany has also been involved in cutting-edge resiliency planning and adaptation strategies including government policy, living shoreline design review, bridge and roadway adaption design review, and many more initiatives.

NABIL BAWANY, PE, CFM

FLOOD RESILIENCY LEAD, FL

Years with the firm

2.5 (2022)

Years total

11 (2012)

Education

BS, Civil and Environmental Engineering, University of South Florida, 2014

Professional Registrations

Professional Engineer, Florida No. 86625

Certified Floodplain Manager #US-16-08996

Emergency Management Operations, FEMA Certified 100,200,700

CAREER SUMMARY

Mr. Nabil Bawany is a professional engineer specializing in resiliency, water resources and civil engineering design. Mr. Bawany recently Joined WSP after 8 years of local government experience. This unique perspective allows him to understand and deliver on client's needs. His expertise includes flood resiliency projects, project management, stormwater management systems, drainage solutions, operational guidance, government policy creation and review, all phases of watershed management planning, hydraulic modeling, stormwater design, residential and commercial land development, and government policy and grant procurement. Mr. Bawany has also been involved in cutting-edge resiliency planning and adaptation strategies including government policy, living shoreline design review, bridge and roadway adaption design review, and many more initiatives.

PROFESSIONAL EXPERIENCE

Sea Level Rise and Storm Surge Vulnerability Assessment, Pinellas County, Florida: Client Project Manager. To assess the County's vulnerability to rising seas and potential surge impacts, the County undertook a complex study to model and create flood inundation maps coupled with storm surge scenarios. Various maps for sea-level rise scenarios, horizons, and inundation durations, combined with storm surge projections, were used to help identify vulnerable assets and develop adaptation alternatives. The vulnerability assessment involved various stakeholders including local municipalities private and public utilities. The project was funded through the RESTORE Act which added another layer of complexity.

Vulnerability Assessment, Village of Islamorada, Monroe County, Florida.

Project Engineer. The project aims to update the Village's vulnerability assessment and planning efforts to address the impacts of sea level rise and meet updated state regulations. Steps included conducting a critical asset inventory and update data sources to better inform vulnerability planning; conducting an exposure analysis which included modeling rainfall and sea level rise scenarios to assess exposure to flooding. The team will determine the best fit for modeling 9 rainfall + SLR scenarios related to the 10, 50, and 100-year rainfall events anticipated for 2040, 2070, and 2100 time horizons. The final report will assimilate all updated data and modeling output into a vulnerability assessment that aligns with statutory criteria.

Tide Check Valve Location Identification, Pinellas County, Florida: Project Manager. Using Sea level rise and storm surge projections Mr. Bawany was successful in identifying ideal candidates for the most vulnerable stormwater outfalls throughout unincorporated Pinellas County. Mr. Bawany also was successful in obtaining federal earmarks grant funding in the amount of $240K for the installation of tide check valves.

Resilient Shoreline Ordinance and Technical Evaluation, City of St. Augustine, Florida. Technical Lead. The development of a resilient shoreline ordinance will provide the City and its residents guidance and opportunities for protective infrastructure such as seawalls, living shorelines and hybrid approaches. While seawalls can provide a hardened approach to reducing the flooding associated with sea level rise and storm events, living shorelines can provide water quality improvements, fisheries habitat, increased biodiversity, reduced wave energy, water storage, and reduced erosion and storm impacts. WSP is providing a technical evaluation that will inform guidance for both repair/upgrade of existing structures and for new construction. Assessment will include requirements for properties currently with unaltered shorelines and will identify undeveloped properties

that may become inundated during sea level rise scenarios but that may not require resilient shoreline flood protection structures.

Roads and Vulnerability Analysis and Capital Plan, Monroe County, Florida

QA/QC. provided QA/QC for Monroe County Resiliency Conceptual Design Review-Wetlands, T&E Species, and Permitting Constraints. Project entails an analysis of The County's and State roadway system which is vital for its access/evacuation and mobilization within the Florida Keys. As part of the County's proactive sustainability approach, this project is to merge climate change science and modeling, with transportation engineering and planning to develop a long-term roads adaptation plan based on design criteria, Sea Level Rise (SLR) projections, adaptation methodology, policy/financing evaluation, and public/stakeholder outreach.

South Creek Watershed Management Plan, Pinellas County, Florida: Project Manager. South Creek watershed is in northwest Pinellas County and is roughly 4.5 square miles. This project involved the development of a comprehensive watershed management plan. The WMP consisted of multiple phases including watershed evaluation, floodplain analysis, SLR analysis, level of service (LOS) determination, surface water resource assessment (SWRA), and BMP alternatives analysis. WMP included a Sea level Rise analysis for 2040,2070 and 2100 horizons utilizing NOAA SLR data addressing tidal, future high tide, storm, rainfall-induced, and compound flooding. The WMP will result in multiple BMP recommendations for water quality, flood reduction, resiliency/ SLR impacts mitigation and natural system improvement projects Mr. Bawany successfully obtained grant funding for this project from Southwest Florida Water Management District (SWFWMD), cooperative funding initiative.

Curlew Creek Smith Bayou Watershed Management Plan, Pinellas County, Florida: Project Manger The involved development of a comprehensive watershed management plan for both Curlew Creek and Smith Bayou watersheds being developed concurrently. The WMP consisted of multiple phases including watershed evaluation, floodplain analysis, level of service (LOS) determination, surface water resource assessment (SWRA), and best management practice (BMP) alternatives analysis. The WMP was developed utilizing ICPRv4 and also included a Sea level Rise analysis for 2040,2070 and 2100 horizons utilizing NOAA SLR data addressing tidal, future high tide, storm, rainfall-induced, and compound flooding. The WMP resulted in 12 BMP recommendations for water quality, flood reduction, resiliency/ SLR impacts, and natural system improvement projects. This project was co-funded by the Southwest Florida Water Management District, the cities of Clearwater and Dunedin.

Lake Tarpon and Brooker Creek Watershed Management Plans, Pinellas County, Florida: Project Manager. Mr. Bawany acted as the Project Manager for Pinellas County. WSP is performing professional watershed management planning services for the Lake Tarpon and Brooker Creek watersheds in Pinellas County utilizing ICPRv4. Services include watershed evaluation and characterization, hydrologic and hydraulic modeling, pollutant load modeling, floodplain delineation, identification of flood and water quality issues, recommendations for improvements, conceptual plans, permit meetings, and cost estimates. BMP recommendations will improve flooding and water quality conditions for Lake Tarpon and Brooker Creek and will consider sea level rise and community benefits. Mr. Bawany successfully obtained grant funding for this project from SWFWMD cooperative funding initiative.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

William Mather
Associate Consultant, Environmental Scientist

Project Assignment:

Environmental Scientist

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

5

Education: Degree(s)/Year/Specialization:

B.S., Environmental Science, Ohio State University/ 2019

Active registration: Year first registered/discipline:

N/A

Other experience and qualifications relevant to the proposed Project:

William (Will) Mather is an associate consultant and geology environmental scientist. His duties include field research, sample collection and analysis, and interpretation of lithology, hydrogeology, and chemistry. Will has experience in field identification of rock types and geologic structures; soil and groundwater sampling and analysis, including for petroleum hydrocarbon impact; environmental drilling and sampling; monitoring well installation; interpreting and implementing environmental regulations; conducting site assessments for oil and gas clients; laboratory sample preparation and curation; data collection and analysis; and technical report data reviews. Will is responsible for monitoring biological and environmental components of living shoreline restoration projects and is experienced in driving boats, underwater data collection, coastal species identification, and sea grass identification in remote areas.

WILLIAM (WILL) MATHER

ASSOCIATE CONSULTANT, ENVIRONMENTAL SCIENTIST

Years with the firm

5 (2019)

Years total

5 (2019)

Professional registrations

Licensed Drone Pilot

Trainings

40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER), Occupational Safety and Health Administration (OSHA), 29 CFR 1910

Mine Safety & Health Administration (MSHA), New Miner Part 48B

Florida Division of Historical Resources - Archaeological Resource Management Training

Languages

English

Office location

Tallahassee, Florida

CAREER SUMMARY

William (Will) Mather is an associate consultant and geology environmental scientist. His duties include field research, sample collection and analysis, and interpretation of lithology, hydrogeology, and chemistry. Will has experience in field identification of rock types and geologic structures; soil and groundwater sampling and analysis, including for petroleum hydrocarbon impact; environmental drilling and sampling; monitoring well installation; interpreting and implementing environmental regulations; conducting site assessments for oil and gas clients; laboratory sample preparation and curation; data collection and analysis; and technical report data reviews. He conducts health and safety air monitoring at excavation sites and writes and manages health and safety plans and job hazard analyses for construction and environmental crews to comply with federal, state, local, and client health and safety requirements. Will is responsible for monitoring biological and environmental components of living shoreline restoration projects and is experienced in driving boats, underwater data collection, coastal species identification, and sea grass identification in remote areas.

Additional routine tasks completed include national environmental policy act compliance; industrial leak detection and repair inspections; vegetation and reclamation surveys; collection of air permits and workplans; desktop surveys; contractor management and oversite; bid development and budget implementation; biological and environmental monitoring; fish, bird, and invertebrate identification; and field mapping including hand drawn maps and global positioning systems.

EDUCATION

BS, Environmental Science, Ohio State University 2019

PROFESSIONAL EXPERIENCE

- **XTO, Permian Basin Environmental Services MSA, Carlsbad, New Mexico, $5,000 – 3 million, 2019-2021:** Onsite supervisor, site inspections and excavation oversite.
- **Concho, COG Environmental Services Contract, Carlsbad, New Mexico, $5,000 – 100,000, 2019 - 2021:** Onsite supervisor, site inspections and excavation oversite.
- **Apalachicola Regional Planning Council, Franklin - 98, Eastpoint, Florida, $2 million, 2021 - Ongoing:** Project Manager, Field Monitoring Staff and Construction Oversite Task Manager, collect data during monitoring events and oversee installation/construction of reefs.
- **The Nature Conservancy, TNC East Bay, Pensacola, Florida, $1.5 million, 2021 - Ongoing:** Field monitoring staff, assist with data collection.
- **The Nature Conservancy, SUNS County Road 30A Living Shoreline, Apalachicola, Florida, $85,000, 2024:** Project Manager, Field Monitoring Staff, oversaw the progress of the entire project, and collected field data.
- **DARPA, DARPA REEFENSE, Panama City, Florida, $2.5 million, 2022 - Ongoing:** Project Manager, Field monitoring staff, oversee the progress of the entire project, and assist with data collection.

- **FDEP, 1,4 Dioxane Study, Tallahassee and Orlando, Florida, $100,000, 2021 - Ongoing**: Onsite Task Manager, collect samples and oversee drilling/sample collection.

- **South Carolina DHEC, DHEC Site Assessment, Remediation, and Revitalization Contract, Spartanburg, South Carolina, $50,000, 2021 - Ongoing**: Onsite Task Manger, collect samples and inspect SVE equipment.

- **Olin, Olin – OU2, McIntosh, Alabama, $5 million, 2022 - Ongoing:** Onsite Oversite and Sampler, oversee subcontractors and collect water/soil samples.

- **Nouryon, Nouryon – OU3, McIntosh, Alabama, $1 million, 2022 - Ongoing:** Onsite oversite and sampler, oversee subcontractors and collect water/soil samples.

- **FSU, FSU Mold Removal Oversite, Tallahassee, Florida, $1 million, 2022 - Ongoing**: Onsite oversite and Inspector, oversee the cleaning of HVAC systems and collect mold samples.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Shannon McMorrow, PWS
Senior Ecologist

Project Assignment:

Coastal Ecologist

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

16

Education: Degree(s)/Year/Specialization:

Master of Science, Environmental Engineering Sciences, University of Florida2008
Bachelor of Science, Zoology (Environmental Science Minor), University of Florida2004

Active registration: Year first registered/discipline:

Professional Wetlands Scientist, No. 3022, 2018, renewed 2024

Other experience and qualifications relevant to the proposed Project:

As a Senior Scientist, Ms. Shannon McMorrow's focus is on the assessment of ecological integrity of natural and disturbed systems. She has over 15 years of experience in environmental consulting. She has experience conducting Phase I Environmental Site Assessments, and NEPA Environmental Assessments. She has extensive experience in the evaluation of wetlands, threatened and endangered species surveys, and habitat assessments. Mrs. McMorrow is proficient at coordinating environmental permitting efforts, and has worked closely with local, state, and federal agencies to permit large projects with complex environmental constraints. Ms. McMorrow routinely performs field operations tasks including obtaining and reviewing data (maps, figures, and existing environmental data) prior to site visits, site reviews for wetlands, threatened & endangered species habitat, and natural resources assessments.

SHANNON MCMORROW, PWS

SENIOR ECOLOGIST

Years with the firm

16 (2008)

Years total

19 (2005)

Professional registrations

Professional Wetlands Scientist, No. 3022, 2018, renewed 2024

Trainings

CPR, National Safety Council R Course Administrator, 2023

First Aid, National Safety Council R Course Administrator, 2023

HAZWOPER 40 Hour, 2010

FDEP Stream Condition Index, 2020

FDEP Habitat Assessment, 2020

FDEP Lake Vegetation Index, 2023

Software

Microsoft Office Word, Excel, Power Point, and Outlook

ArcGIS

TerraSync

GPS Pathfinder

Languages

English

Office location

Gainesville, Florida

CAREER SUMMARY

As a Senior Scientist, Ms. Shannon McMorrow's focus is on the assessment of ecological integrity of natural and disturbed systems. She has over 15 years of experience in environmental consulting. She has experience conducting Phase I Environmental Site Assessments, and NEPA Environmental Assessments. She has extensive experience in the evaluation of wetlands, threatened and endangered species surveys, and habitat assessments. Mrs. McMorrow is proficient at coordinating environmental permitting efforts, and has worked closely with local, state, and federal agencies to permit large projects with complex environmental constraints. Ms. McMorrow routinely performs field operations tasks including obtaining and reviewing data (maps, figures, and existing environmental data) prior to site visits, site reviews for wetlands, threatened & endangered species habitat, and natural resources assessments.

EDUCATION

Master of Science, Environmental Engineering Sciences, University of Florida	2008
Bachelor of Science, Zoology (Environmental Science Minor), University of Florida	2004

PROFESSIONAL EXPERIENCE

- **U.S. Department of Agriculture-Natural Resources Conservation Service, Several Wetland Restoration Easements, Central Florida, 08/17/2011 to current: Wetlands Specialist.** Responsible for the ecological surveys at NRCS Wetland Reserve Easement properties. This included extensive data collection on quality of habitats, vegetation classification, identifying protected species habitats, and identifying presence of invasive species. Mrs. McMorrow also worked with the client to clarify restoration goals and objectives. This project consists of design and permitting for the hydrologic and natural systems restoration of impacted wetlands on the USDA-NRCS easement boundaries. She has acted as primary author of the report sections dedicated to ecological surveys and conservation practices, as well as technical reviewer of these section prepared by others, and is now acting as Project Manager.

- **University of Florida, Stormwater Master Drainage System Permit Renewal, 2021-2023: Wetland Specialist.** This included wetland delineations within the Lake Alice watershed (approximately 1,000 acres) in accordance with the Florida wetland delineation method, "Delineation of the Landward Extent of Wetlands and Surface Waters" (Chapter 62-340). Wetland lines were verified with SJRWMD staff. WSP prepared a certified boundary survey for submittal with the SJRWMD ERP permit renewal application.

- **McCoys Creek Restoration Plan, Groundwork Jacksonville,** June 2018 – Present. The goal of the McCoys Creek Master Plan is to provide natural channel design and bioengineering treatments for restoring approximately 2.8 miles of McCoys Creek from Hollybrook Park to the St. Johns River. The restoration is aimed at improving the waterway's health and function, habitat for wildlife, flooding, water quality, and aesthetics, while considering where recreational amenities and green and natural stormwater remedies can be incorporated. The Master Plan was completed in February 2019 and further design of the creek restoration and recreation amenities are proceeding in

phases as new task orders from Groundwork Jacksonville and the City of Jacksonville. Responsible for wetland delineation, tree surveys, and permitting through SJRWMD and USACE.

- **University of Florida, Cedar Key Shoreline Restoration Projects, Levy County, Florida, 2019 to 2021: Permitting Lead.** The coastal shoreline along Airport Road and G Street has eroded over time leading to loss of wetland and other estuarine habitats. In 2016 Hurricane Hermine caused further erosion along this shoreline and significant damage to Airport Road. This project restored shoreline habitats and improved erosion control by regrading the shore in eroded areas, planting dune and marsh vegetation, and installing oyster reef breakwaters. Project tasks included site ecological assessment, topographic survey, developing design plans and permit documents, coordinating permitting activities, and providing construction oversight. Responsible for ecological assessments and permit applications.

- **U.S. Air Force Civil Engineer Center, Environmental Assessment Ecosystem Restoration Masterplan, Endangered Species Study and Cultural Resources Study, MacDill Air Force Base, Tampa, Florida,** 09/09/2011 to 12/12/2012. MacDill AFB covers an approximately 5,638 acres, the Ecosystem Restoration Masterplan currently includes 25 project sites within MacDill AFB WSP personnel prepared a NEPA Environmental Assessment (EA) for implementation of the Ecosystem Restoration Masterplan (ERM). The completion of a supporting T&E Species Study, and a Cultural Resources Study (CRS) were supporting documents for the EA. Ms. McMorrow conducted dusk and dawn bird surveys; assisted with gopher tortoise and burrowing owl surveys; assisted with small mammal trapping; setup nocturnal cameras; conducted wetland delineation; assisted with wetland permit application preparation; attended meetings with regulatory agencies; prepared UMAM documentation.

- **DEP Grant S0769 Key Canals, Monroe County, Florida 2014-2020.** Performed technical review of benthic surveys and assisted with consultation with regulatory agencies. WSP worked closely with Monroe County and the Canal Restoration Advisory Subcommittee of the Florida Keys National Marine Sanctuary Water Quality Protection Program to implement a canal restoration demonstration program consisting of implementation of various residential canal water quality improvements. The technologies to be implemented include weed barriers, organic removal, backfilling, culvert installation, pumping, and combinations of these technologies. The scope consists of preparation of the design and permit packages for all the restorations; assistance with bidding the construction; and engineering support services during construction. WSP obtained all required permits, including a SFWMD ERP, a USACE individual permit, and a Florida National Marine Sanctuary permit. Due to unavoidable temporary impacts to mangroves during construction, WSP's permitting services included mangrove restoration design.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Jen Brunton, PE, CFM, CERP
Senior Vice President, Environmental Engineer

Project Assignment:

Environmental Engineer

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

18

Education: Degree(s)/Year/Specialization:

MS, Civil and Environmental Engineering, 2002
BS, Public and Environmental Affairs, minor, Biology, 1998

Active registration: Year first registered/discipline:

Professional Engineer: NY (096340) 2016, NH (12987) 2009, MD (41121) 2011 /Environmental
Certified Floodplain Manager
Certified Ecological Restoration Practitioner

Other experience and qualifications relevant to the proposed Project:

Jennifer Brunton is a civil and environmental engineer with over 20 years of experience whose recognized leadership of multidisciplinary teams produced numerous successful civil and water infrastructure designs. Her niche expertise is meshing the principals of engineering and ecology to enhance our natural and built environment. Jen has contributed to the resiliency planning and protection of miles of shoreline and the restoration of more than 1,000 acres of habitat restoration. Jen excels at working with clients to articulate project goals, which she translates into her management of teams of 5 to 50 technical specialists that derive the required data and craft designs that meet project needs, align with client objectives, and meet project scope, budget and schedule commitments. She effectively works with stakeholders during project development to establish requirements, opportunities, and constraints that are assimilated into the design process, the progress of which is communicated back to the stakeholders at key intervals. Her expertise includes managing task order-based contracts, designing and overseeing the execution of technical studies, including natural resource studies and hydrologic, hydraulic and hydrodynamic modeling efforts; developing engineering plans, specifications, and cost estimates; providing construction supervision; conducting post-construction monitoring; and developing and implementing adaptive management actions. Jen is also experienced in advancing projects to meet federal, state and local regulations and successfully obtaining applicable permits and approvals. Her experience spans a wide geographic region, including the West Coast, the Midwest, the Northeast, and the Southeast.

JENNIFER BRUNTON PE, CFM, CERP

Environmental Engineer

Years with the firm

18

Years total

24

Professional qualifications

Professional Engineer (NJ, NY, NH, MD)

Certified Floodplain Manager

Certified Ecological Restoration Practitioner

CAREER SUMMARY

Ms. Brunton is a civil and environmental engineer with over 20 years of experience whose recognized leadership of multidisciplinary teams produced numerous successful civil and water infrastructure designs. Her niche expertise is meshing the principals of engineering and ecology to enhance our natural and built environment. Jen has contributed to the resiliency planning and protection of miles of shoreline and the restoration of more than 1,000 acres of habitat restoration. Jen excels at working with clients to articulate project goals, which she translates into her management of teams of 5 to 50 technical specialists that derive the required data and craft designs that meet project needs, align with client objectives, and meet project scope, budget and schedule commitments. She effectively works with stakeholders during project development to establish requirements, opportunities, and constraints that are assimilated into the design process, the progress of which is communicated back to the stakeholders at key intervals. Her expertise includes managing task order-based contracts, designing and overseeing the execution of technical studies, including natural resource studies and hydrologic, hydraulic and hydrodynamic modeling efforts; developing engineering plans, specifications, and cost estimates; providing construction supervision; conducting post-construction monitoring; and developing and implementing adaptive management actions. Jen is also experienced in advancing projects to meet federal, state and local regulations and successfully obtaining applicable permits and approvals.

EDUCATION

MS, Civil and Environmental Engineering	2002
BS, Public and Environmental Affairs, minor, Biology	1998

PROFESSIONAL EXPERIENCE

- **New Jersey Department of Environmental Protection, Higbee Beach Wetland Restoration Project, Cape May County, New Jersey:** Project manager overseeing the engineering design of over several hundred acres of tidal marsh restoration in Cape May County, NJ. The principal project goal is to reestablish tidal inundation to a large portion of Pond Creek marsh without increasing the flood risk to the upper watershed or inundating the eastern marsh area, and allowing for habitat management of the northern marsh area. Directed the execution of the following baseline studies: sediment characterization, geotechnical investigations, cultural resource surveys, habitat evaluations to quantify ecological uplift, desktop risk assessments, habitat mapping, wetland delineations, biological benchmark assessment, salinity screenings, reference marsh assessment, fishery resources identification, topographic and bathymetric surveys, and hydrologic, hydraulic, and hydrodynamic modeling. Through an iterative process of defining, modeling, and refining the inlet channel, determined the optimal design. Designed a 6,860-foot tidal inundation control berm control berm with four 72-inch water control structures with a series of flap gates to manage flood risk to the upper watershed, protect the eastern portion of the marsh from tidal inundation, and allow habitat management of the northern marsh. Additional design elements include bridge design to provide access over the restored inlet channel, the design of an extensive nature trail network, the architectural design of three wildlife viewing blind designs sited at six locations within the Wildlife Management Area, the architectural design of a large viewing platform, interpretive signage and other recreational features. Directed development of NJDEP and USACE applications.

Currently finalizing engineering plans. WSP is contracted to provide construction oversight and post construction monitoring services.

— **NJDEP Lincoln Park Wetland Restoration, Hudson County, New Jersey:** Design Engineer. Key team member designing the redevelopment of a landfill for tidal marsh restoration. As part of this $7 million project, responsibilities included development of contract documents that describe the excavation of landfill debris from within the historical wetland area to re-establish tidal channels and salt marsh. Project components included draft and final design plans and specifications, as well as cost estimates and quantities, and bid packages. The project restored 42 acres of wetlands, streams, salt marsh habitat, and added additional anadromous fish spawning habitat to the Hackensack River. Project required dredging ~245,000 cy of material, including 2-feet of over-excavation followed by the import and placement of processed dredged material (PDM) to achieve final proposed grades. In January of 2012, the project was selected to receive Coastal America's prestigious Coastal Partnership Award for 2011.

— **National Park Service, Canal Reclamation Design for Jean Laffite National Historical Park and Preserve, Louisiana. Design engineer:** Supported the development of the conceptual engineering and restoration design for the proposed reclamation over 20 miles of canals and disturbed wetlands in the 25,000-acre Bataria Preserve, a unit of the Jean Laffite National Historical Park and Preserve. The wetlands were dredged and filled with spoil deposits to create canals for oil and gas drill site access, to create oil and gas pipeline routes, and to provide borrow material for the construction of dikes meant to facilitate drainage and residential subdivision development, which never fully materialized. Construction of the canals altered hydrology, replaced wetlands with upland habitats, increased subsidence, limited sediment deposition, intensified marsh deterioration, and cultivated invasive species establishment through the colonization of the area spoilbanks. More than 590 acres of the preserve are directly affected by these non-historic canals and associated spoilbanks and dikes.

— **Mobile Bay National Estuary Program (MBNEP), Bon Secour River Watershed Management Plan, Baldwin County, Alabama**: The MBNEP contracted Louis Berger U.S. and partner firms to prepare a comprehensive watershed management plan (WMP) for the Bon Secour River, Oyster Bay, and Skunk Bayou watersheds to provide a roadmap for restoring or conserving water and habitat quality in coastal areas affected by the Deepwater Horizon oil spill. The plan considers how best to improve environmental health and resiliency, public access and recreational opportunities, as well as preservation of cultural heritage in the communities living along the watersheds. In support of this effort, Ms. Brunton utilized the Sea Level Affecting Marshes Model (SLAMM) model to evaluate the degree of change for each habitat type within the three watersheds over time given different sea level rise scenarios. Additional scope items included identification of watershed-specific goals and objectives, developing management actions necessary to carry out the plan's goals and objectives, engagement with various stakeholder groups, and facilitation of public meetings.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Ahintha Kandamby, PhD, PE, CFM
Water Resources Engineering Lead

Project Assignment:

Coastal Modeling

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

13

Education: Degree(s)/Year/Specialization:

PhD, Clarkson University / 2013 / Civil & Environmental Engineering
Master of Science, Clarkson University / 2008 / Civil & Environmental Engineering,
Bachelor of Science, University of Peradeniya, Sri Lanka / 2004 / Mechanical Engineering

Active registration: Year first registered/discipline:

Professional Engineer: New York 100685-1 (2018) / Civil
Certified Floodplain Manager

Other experience and qualifications relevant to the proposed Project:

Dr. Kandamby is a senior hydraulics and hydrology subject matter expert with more than 10 years of experience in developing and working with 1-D, 2-D and 3-D hydrodynamic models in riverine, coastal and infrastructure design applications. His experience includes PMP calculation for spillway designs for dams, dam classification, dam breach analyses, hydrodynamic modeling, riverine and coastal flooding and erosion assessments, rain fall run off, CFD model development for complicated hydraulic projects, complicated pipe flows, drainage and sewer system design, and hydraulic modeling to support regulatory requirements for federal and local projects.

AHINTHA KANDAMBY, PhD, PE, CFM

Coastal Modeling

Years with the firm

3

Years total

13

Professional qualifications

Professional Engineer: NY
Certified Floodplain Manager

CAREER SUMMARY

Dr. Kandamby is a senior hydraulics and hydrology subject matter expert with more than 10 years of experience in developing and working with 1-D, 2-D and 3-D hydrodynamic models in riverine, coastal and infrastructure design applications. His experience includes PMP calculation for spillway designs for dams, dam classification, dam breach analyses, hydrodynamic modeling, riverine and coastal flooding and erosion assessments, rain fall run off, CFD model development for complicated hydraulic projects, complicated pipe flows, drainage and sewer system design, and hydraulic modeling to support regulatory requirements for federal and local projects

EDUCATION

PhD, Civil & Environmental Engineering, Clarkson University	2013
MS, Civil & Environmental Engineering, Clarkson University	2008
BS, Mechanical Engineering, University of Peradeniya, Sri Lanka	2004

PROFESSIONAL EXPERIENCE

- **Potomac Creek Dam Nos. 1 & 2 – Spillway Design and Sediment Transport Analysis, Virginia Department of Conservation and Recreation (DCR):** Modifying the existing HEC-HMS hydrologic models for both dams to incorporating the newly established PMP using the updated PMP rainfall depths to establish updated SDF peak outflows. Based on the updated SDF flow velocities, several alternatives were developed for protection of the emergency spillways against excessive erosion during the SDF and designing the new spillway capacity to pass SDF. The existing dam breach analyses using HEC-RAS models for routing downstream flood flows. CFD simulation of 3D sediment transport study using Fow-3D and long-term 2D unsteady state sediment transport modeling using USACE 2D AdH to access the erosion/deposition for the SDF.
- **Flat Rock Dam and Manayunk Schuylkill Canal Intake Structure and Spillway Improvements, Philadelphia, PA, City of Philadelphia Water Department (PWD):** Lead hydraulic and hydrology modeling for the development of an operational hydrodynamic model using 2-D HEC-RAS and AdH and CFD model development using Flow-3D in Schuylkill River near the Flat Rock Dam. Existing model calibration and validation was completed using FEMA FIS data. A complete 2-D terrain was developed merging surveyed and various sources of DEM data, and hydro-correcting the DEM using Civil 3D. Existing conditions, including the dam, lateral waste weir and the isolated feeder gates were modeled in Civil 3D. CFD model development in Flow-3D to evaluate the designed infrastructure. Comparison of velocity and bed shear stress contours for the existing and proposed geometries. Study of sediment transport with the proposed conditions
- **Harwood's Mill Dam SDF Simulation - City of Newport News, Virginia, United States:** Developed a full domain CFD model to simulate the Spillway Design Flood through Harwood's Mill Dam in Poquoson River in York County Virginia. Full CFD analysis of transient hydraulic jump development to ensure the adequacy of the existing concrete spillway chute. Pre- and post- processing of turbulent CFD simulation with air entrainment.

AHINTHA KANDAMBY, PhD, PE, CFM

Coastal Modeling

- **Habitat Restoration Spicer Creek Wildlife Management Area (WMA), Grand Island, NY, NYSOGS:** Assisted in the development of a two-dimensional model of the Niagara River upstream on Niagara Fall at the Spicer Creek confluence. Modeling included a 2D model simulation of sediment transport due to vessel induced wave analyses to ensure stability during a range of hydrologic conditions.
- **CNH Industrial America, LLC, CFD Analysis and Break-Water Structure Design in Lake Michigan, Mount Pleasant, WI. Lead CFD Engineer:** Break water structure design to reduce the impacts of wave action and shoreline erosion at Mount Pleasant, WI at the Western Shoreline of Lake Michigan. A CFD (Computational Fluid Dynamics) model development to analyze the wave effect of the existing condition and develop a proposed break water structures and analyzing the hydrodynamic forces using Flow 3D.
- **Emergency Feasibility CFD Study/Engineering Analysis and Environmental Permitting for the Salmon River for Town of Malone, NY:** Developed a 3-D hydrodynamics and sediment transport (CFD model) flux model to develop conceptual dredging plans that will improve flood flows to and over the dam to reduce or eliminate sediment deposition and scour. 3-D surface development using the surveyed data in Civil 3D. Cross vanes and flow training structure design and performance evaluation using CFD modeling.
- **Resilient NY – Ice Jam Flood Resiliency, Risk Assessment, and Mitigation for NYSOGS:** Hydrodynamics model development calibration and validation for flood mitigation strategies for Mohawk River in NY. Flood mitigation alternative designs, stakeholder meetings, community engagement meetings, and discuss and interpret hydraulics and hydrologic modeling outcomes. Understanding of Freeze-up ice jam simulation and associated water level rises and assessment of ice jam related flooding. H&H analysis and modeling lead for Buffalo Creek, NY; Cayuga Creek, NY; Grannis Creek, NY; Cazenovia Creek, NY; Silver Creek and Eighteen Mile Creeks.
- **Resilient NJ – Resilient Long Beach Island Project:** Development of a regional climate vulnerability assessment focused on coastal and precipitation-based flooding, an assessment of risks to community assets, preparation of varying impact and resilience scenarios for township consideration, creation of a regional resilience action plan, and preliminary designs and recommendations for resilience projects and policy changes. Rain on Grid HEC-RAS simulation, and storm surge modeling. Working relationship with NJDEP.
- **National Fish and Wildlife Foundation (NFWF) – Restoration of Southern Mastic Beach, NY, Town of Brookhaven:** Develop design plans for the restoration of coastal saltmarsh and scrub shrub habitat along southern Mastic Beach in New York. Hydrologic investigation and modeling and included community-wide needs for enhanced coastal resilience, road access and recreation. Design proposed grading changes, converting mosquito ditches into sinuous tidal streams, creating new habitat, removing road sections, installing a recreational boardwalk, landscape plans and mapped ecological communities. Modeling using MIKE FM with rain fall run off, wind conditions and sandy storm surge modeling. The Town of Brookhaven is planning to mitigate these repetitive coastal flooding through nature-based solutions for future sea level rise. Dr. Kandamby assisted coastal modeling team in hydrodynamic model reviews, data review and data mining and in pre-design project stakeholder meetings.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Justin Lennon, PE
Senior Vice President, Hydraulic Structures & Flood Control

Project Assignment:

Water Resources Engineer

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

19

Education: Degree(s)/Year/Specialization:

Masters of Science,The Pennsylvania State University, University Park, PA / 2004 / Civil Engineering (Water Resources)
Bachelor of Science The Pennsylvania State University, University Park, PA/ 2002 / Civil Engineering

Active registration: Year first registered/discipline:

Professional Engineer: Louisiana (43784) / 2019 / Civil; Texas, 2021 (140516); Maryland, 2007 (34681); Virginia, 2011 (49257); Florida, 2015 (PE79940)

Other experience and qualifications relevant to the proposed Project:

Justin Lennon leads the practice area of river and bridge hydraulics and scour. He specializes in river engineering, coastal engineering, bridge scour analyses, aquatic organism passage, watershed management, climate change adaptation, and stream restoration design. In his time at WSP, Justin has led hydrologic, hydraulic, and/or scour evaluations on over 300 bridges in 32 states. These evaluations have included one dimensional and two dimensional hydraulic studies, steady flow and unsteady flow hydraulic modeling, riverine and tidal hydrologic evaluations, wave modeling and impact studies, floodplain studies, floodway studies, and sediment transport evaluations.

JUSTIN M. LENNON, P.E.

Water Resources Engineer

Years with the firm

19

Years total

21

Professional qualifications

Professional Engineer:
Maryland, 2007 (34681);
Virginia, 2011 (49257);
Delaware, 2012 (17677);
Florida, 2015 (PE79940);
District of Columbia, 2019 (PE921693);
Louisiana, 2019 (43784)
Texas, 2021 (140516)

Envision Certified Sustainability Professional, 2014

CAREER SUMMARY

Justin Lennon PE is a Director Water Resources Engineering and Technical Fellow with WSP's Water National Business Line. Justin is a vice president and the National Practice Area Leader in the areas of hydraulic structures and flood control and a national practice lead in the areas of river / bridge hydraulics & scour, ecological & stream restoration, and climate resiliency. Justin has prepared numerous publications and presentations for local and national level conferences focusing on riverine hydraulics, stream restoration, bridge scour, water quality management, climate change adaptation, and watershed restoration. He is part of WSP's strategic team that is working on the development of tools and methods for incorporation of climate change uncertainty into engineering analyses. Justin Lennon PE is a Director Water Resources Engineering and Technical Fellow with WSP's Water National Business Line. Justin is a vice president and the National Practice Area Leader in the areas of hydraulic structures and flood control and a national practice lead in the areas of river / bridge hydraulics & scour, ecological & stream restoration, and climate resiliency. Justin has prepared numerous publications and presentations for local and national level conferences focusing on riverine hydraulics, stream restoration, bridge scour, water quality management, climate change adaptation, and watershed restoration. He is part of WSP's strategic team that is working on the development of tools and methods for incorporation of climate change uncertainty into engineering analyses

EDUCATION

M.S., Civil Engineering (Water Resources), The Pennsylvania State University, University Park, PA	2004
B.S., Civil Engineering, The Pennsylvania State University, University Park, PA	2002

ADDITIONAL TRAINING

ADCIRC Boot Camp	April 2015
NHI Two-Dimensional Modeling of Rivers/SRH-2D	June 2016
Complex and 2D Hydraulics Modeling with HEC-RAS 6.0	June 2021

PROFESSIONAL EXPERIENCE

- **Pensacola Bay Bridge, Pensacola, Florida:** Justin is the coastal project lead for the design/build replacement of the Pensacola Bay Bridge. The project included dynamic ADCIRC+SWAN modeling of coastal design storm conditions Bridge foundation scour calculations were performed following FDOT scour methods for complex and multiple piers. Wave impact calculations were performed following AASHTO guidance for loadings on piers. Additionally, the design included the development of coastal shoreline protection of the approach roadway emabnkments using riprap and ACBM revetment designs. The embankments required protection from both storm surge and wave impact erosive forces. Justin led the technical team in the development of the studies.
- **State Road 51 over Browns Creek, Jacksonville, Florida:** Justin is the technical director and engineer of record for a HEC-RAS 2D model of coastal storm surge flooding conditions for the scour evaluation of the SR51 bridge crossing. This

complex modeling effort included 2D simulation of the St. Johns River and inlet to the Atlantic Ocean, the Intracoastal waterway, Blount Island, Shell Island, and over 36,000 acres of coastal marshland. The modeling effort included three open boundaries to the Atlantic and three riverine inflow boundary conditions to simulate this complex system. Justin led development of the final bridge scour analysis and technical report based on the findings of the modeling effort.

- **New Jersey Statewide Tidal Bridge Fender Replacements, Statewide, New Jersey:** Justin is the coastal hydraulics technical lead for the replacement of bridge fender systems for twelve coastal bridges. Justin led the development of a two-dimensional ADCIRC model of the North Atlantic with detailed updates to the entire New Jersey coastline. Dynamic hurricane modeling was performed in the ADCIRC model for a number of historic and intensified coastal storm conditions to replicate design storm conditions at each of the project sites. Scour computations for each of the bridge and fenders systems was performed following the FDOT methodologies for multiple stacked piers.
- **Gulf Coast Phase II Study (GC2), Mobile, Alabama:** Justin is a contributing author to the final GC2 report and was the lead water resources engineer responsible for the investigation of six individual cases studies. The overall GC2 project investigation involved detailed study and quantification of climate change impacts on critical infrastructure items. The climate change study is utilizing downscaled Global Climate Change models developed by the USGS and specifically focused on this project area. Justin led the water resources evaluation through the development of methods for inclusion of the climate change inputs into engineering evaluations. Case studies Justin led included the Airport Boulevard culvert study on precipitation impacts, sea level rise impacts on the Africatown USA Bridge, storm surge flooding and overtopping impacts on I-10, storm surge impacts on the Tensaw River Bridge abutments and scour countermeasures, storm surge and wave impacts on pier scour for the Bayway Bridge, and wave impacts on coastal protection structures at the Tensaw River Bridge.
- **Pinellas County Infrastructure Resiliency Pilots:** Justin is the lead water resources engineer supporting a series of climate resiliency pilots studying the impacts of climate change on County owned assets and evaluating alternatives to increase future resiliency. Pinellas County is largely the peninsula and barrier islands located between Tampa Bay and the Gulf of Mexico. The County is heavily populated but low-lying and at risk due to changing sea levels and storm surge conditions. The study included evaluations of storm surge impacts as a wastewater treatment / water reclamation facility, storm surge impacts to a wastewater lift station, sea level rise impacts to a stormdrain system serving a principal arterial roadway, sea level rise impacts on a stormdrain system serving a residential neighborhood, and storm surge impacts on a hurricane evacuation route.
- **Emergency restoration of Jones Beach, Gilgo Beach, and Fire Island, Long Island, New York**: As part of WSP's emergency response team Justin participated in the post-Sandy restoration designs for Jones Beach, Gilgo Beach, and Fire Island. Justin participated as part of an interdisciplinary team in the development of the emergency restoration design plans for the beaches that would allow for construction to start within three months of the storm. As part of the team, Justin was responsible for the development of design geometries for the beach profile and dune systems for each of the beaches.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Ashwini Kashelikar, PE, CFM
Senior Water Resources Engineer

Project Assignment:

Water Resources Engineer

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

15

Education: Degree(s)/Year/Specialization:

B.S., Chemical Engineering, University of Prune, India / 2005
M.S., Environmental Engineering, Michigan Technological University / 2009

Active registration: Year first registered/discipline:

Professional Engineer: Louisiana, (0033148) / Civil

Other experience and qualifications relevant to the proposed Project:

Ashwini is a water resources engineer with experience in hydrologic and hydraulic modeling for a diverse range of projects including streamflow forecasting, dam break analysis, levee certification, no-rise determination, sanitary sewer analysis, stormwater design, reservoir operations, and flood risk assessment. Ms. Kashelikar has experience with ESRI GIS Software, HEC-1, HEC-2, HEC-RAS, HEC-HMS, HEC-ResSim, PCSWMM, InfoSWMM, FLO-2D, HAZUS-MH, and ICPR.

ASHWINI KASHELIKAR, PE, CFM

Senior Water Resources Engineer

Years with the firm

15

Years total

15

Education

Master's Degree, Environmental Engineering, Michigan Technological University, 2009

BS, Chemical Engineering, University of Pune, India, 2005

Professional registrations

Professional Engineer (LA, TX)

Certified Floodplain Manager

Professional associations

Association of State Floodplain Managers

American Society of Civil Engineers

Louisiana Floodplain Managers Association

Languages

English

Office location

Nashville, TN

CAREER SUMMARY

Ms. Kashelikar is a water resources engineer with experience in hydrologic and hydraulic modeling for a diverse range of projects including streamflow forecasting, dam break analysis, levee certification, no-rise determination, sanitary sewer analysis, stormwater design, reservoir operations, and flood risk assessment. Ms. Kashelikar has experience with ESRI GIS Software, HEC-1, HEC-2, HEC-RAS, HEC-HMS, HEC-ResSim, PCSWMM, InfoSWMM, FLO-2D, HAZUS-MH, and ICPR.

PROFESSIONAL EXPERIENCE

— **Louisiana Watershed Initiative Region 3 (Northeast Louisiana)** >$8M**,** 11/04/2020 - Present: Project Manager.

- Ms. Kashelikar is managing the development of hydrologic and hydraulic models in four watersheds in northeast Louisiana – Boeuf River, Bayou Macon, Bayou Cocodrie and Tensas River – adding up to over 5800 square miles. The full scope of this effort has involved conducting a da ta gap analysis and development of detailed methodologies to model each watershed. The modeling contract also includes scoping, public outreach, hydrologic and hydraulic analyses, consequence modeling and floodplain mapping. The watershed-scale models developed by WSP for the LWI program will serve as the basis for analysis of future developments, flood mitigation feasibility studies, watershed management strategies and consequence and risk assessment. The extensive hydraulic modeling effort will include development of a combination of 1-dimensional and 2-dimensional models using HEC-RAS and covering over 4,900 square miles.

— **Metro Nashville Stormwater Design, Nashville, TN, 2020, $50,000** 2020-2021**:** Project Engineer

- Developed a 2D model for a study area in the Green Hills neighborhood of Nashville, TN, near Ackerman Court. The hydrologic and hydraulic study analyzed the extent of flooding from a tributary to West Fork Browns Creek following rainfall events corresponding to the 2-year, 5-year and 10-year return periods. A combined 1D/2D model was developed using PCSWMM to evaluate flooding under existing and proposed conditions. Modeled proposed conditions scenarios included channel modification and culvert resizing. A video presentation was also developed to present results of the study to the affected community members.

— **State of Missouri Emergency Management Agency – Watershed RiskMAP Services, Multiple Watersheds,** >2.5M**,** 2016 – 2021**:** Proejct Manager. ·

- Led a team of engineers, surveyors and geographic information systems personnel in performing field survey, developing hydrologic (HEC-HMS, regression, gage analyses) and hydraulic models for over 2,000 miles of streams in several HUC-8 watersheds, performing floodplain mapping and developing Risk MAP products. Supervised development of large scale 2D HEC-RAS models in over 3600 square miles of the Meramec River, Gasconade River and Bourbuese River Watersheds.ARCO/BP, South Tank Farm Barrier Wall Installation, East Chicago, Indiana, Engineering Design Services and Site Assessment

— **SRWMD FEMA Risk MAP Program, Suwannee River Water Management District, Live Oak, FL, Multiple Watersheds, >**2.5M**,** 2012 – 2023**:** Lead Engineer.

- Lead engineer for the Lower Suwannee, Upper Suwannee, Santa Fe, Withlacoochee, and Waccasassa Watershed Risk MAP projects. Responsibilities have included developing and reviewing survey plans and supervising the execution of approximate and detailed studies for both riverine and closed basin flooding sources. Most recently, Ms. Kashelikar has led the large scale 2D modeling effort in over 800 square miles of the Santa Fe River watershed. The modeling effort has involved the use of both ICPR and HEC-RAS.reviewing survey plans and supervising the execution of approximate and detailed studies for both riverine and closed basin flooding sources. Most recently, Ms. Kashelikar has led the large scale 2D modeling effort in over 800 square miles of the Santa Fe River watershed. The modeling effort has involved the use of both ICPR and HEC-RAS.

— **USACE Vicksburg District, USACE MMC Production Center - Corps Water Management System (CWMS) Model Development, Multiple Geographies, >1**M**,** 2014 – 2018**:** Watershed Lead/Project Engineer

- Supervised the development of HEC-HMS, HEC-RAS, HEC-ResSim, HEC-FIA models and integration into CAVI in Thames River and Chemung River watersheds. As a project engineer, developed and calibrated HEC-RAS models in the Big Sandy River and Blackstone River and Pecos River watersheds and refined the HEC-ResSim model in the Yazoo River watershed.

— **State of Alabama ADECA OWR - Upper Alabama and Middle Coosa Watershed Risk MAP, Montgomery, AL, >1**M**,** 2009-2013**:** Watershed Lead/Project Engineer

- Performed detailed hydraulics studies (HEC-RAS) for streams in Elmore and Autauga counties. Ms. Kashelikar also developed a FLO-2D model to route overflow from Mill Creek in Elmore County, AL and determine the resulting extent and depth of flooding within the City of Millbrook. In Talladega County, Ms. Kashelikar supervised the development of HEC-HMS, regression and HEC-RAS studies and managed the production of non-regulatory flood risk products associated with FEMA's RiskMAP projects.

PUBLICATIONS & PRESENTATIONS

— Identification of Teleconnections and Improved Flood Risk Forecasts using Bulletin 17B, Ashwini Kashelikar, MTU M.S. Thesis, April 2009.
— Kashelikar, A.S., and V.W. Griffis, "Forecasting flood risk with Bulletin 17B LP3 model and climate variability" World Water and Environmental Resources Congress, 2008 Editors R.W. Babcock and R. Walton, American Society of Civil Engineers, Reston, Virginia, 2008.
— Kashelikar, Ashwini "A Case Study in Scoping, Modeling and Mapping FEMA Risk MAP Studies – Alligator Creek, FL", Tennessee Association of Floodplain Management Annual Conference 2016, August 23 – 25, 2016
— Kashelikar, Ashwini "Introduction to Risk MAP Products – What are these great toys (I mean, tools)?!" Tennessee Association of Floodplain Management Annual Conference 2017, August 23 – 25, 2017

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Eric Slaugh, PE
Water Resources and Habitat Restoration Project Manager
Pacific Northwest District Coastal Engineering Lead

Project Assignment:

Coastal Engineer

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

8

Education: Degree(s)/Year/Specialization:

BS, Chemical and Environmental Engineering, Clarkson University (Potsdam, NY) 2015
MENG, Environmental Engineering, North Carolina State University 2021

Active registration: Year first registered/discipline:

Professional Engineer: Washinton, 2020 (20123132) / Civil

Other experience and qualifications relevant to the proposed Project:

Eric Slaugh is a lead water resources and coastal project manager in WSP's Seattle office. In his nine years of experience, Eric has provided hydrologic and hydraulic expertise, designed estuarine and coastal restoration solutions, designed pipeline mitigation strategies, managed projects up to $1.5 million in size, and fostered relationships with clients in Washington, Oregon, Florida, California, New York State, and throughout the Mid-Atlantic Region. He has served the role of project manager, lead design engineer, task manager, hydraulics engineer, and project engineer on projects requiring stakeholder engagement, tight design schedules and budgets, drafting of construction drawings and specifications, bid management services, and first- and third-party construction oversight.

ERIC SLAUGH, PE

Water Resources and Habitat Restoration Project Manager

Pacific Northwest District Coastal Engineering Lead

Years with the firm

8

Years total

9

Professional registrations

Professional Engineer:* *WA

Other languages

German

CAREER SUMMARY

Eric Slaugh is a lead water resources and coastal project manager in WSP's Seattle office. In his nine years of experience, Eric has provided hydrologic and hydraulic expertise, designed estuarine and coastal restoration solutions, designed pipeline mitigation strategies, managed projects up to $1.5 million in size, and fostered relationships with clients in Washington, Oregon, Florida, California, New York State, and throughout the Mid-Atlantic Region. He has served the role of project manager, lead design engineer, task manager, hydraulics engineer, and project engineer on projects requiring stakeholder engagement, tight design schedules and budgets, drafting of construction drawings and specifications, bid management services, and first- and third-party construction oversight.

EDUCATION

BS, Chemical and Environmental Engineering, Clarkson University (Potsdam, NY)	2015
MENG, Environmental Engineering, North Carolina State University	2021

WSP EXPERIENCE

— **Golden Hill State Park Green Shoreline, Barker, New York**: For the New York State Office of Parks, Recreation, and Historical Preservation (NYSOPRHP), Mr. Slaugh is the coastal engineering lead in charge of designing a shoreline revetment to prevent the erosion of a bluff along Lake Ontario. He led the team that completed a wave analysis of Lake Ontario to determine the run-up of waves during various design storms and water levels. Mr. Slaugh used the results of the wave analysis to design the slope and size of the revetment face as well as design the specifications of the underlaying material. Mr. Slaugh had to consider the possibility of future water level changes in Lake Ontario as part of this design. Mr. Slaugh collaborated with botanists and wetland scientists to craft a planting plan that restored the slope as part of the revetment design. The planting plan incorporated plant species that are native to the area and were traditionally found in the design wave conditions. Mr. Slaugh's team was responsible for drafting the drawings, specifications, cost estimate, and basis of design that were provided to permitting agencies for permitting and to contractors for bidding.

Times Beach Nature Preserve Resiliency Study, Buffalo, New York: Times Beach Nature Preserve has been heavily damaged by severe weather events (seiches) on Lake Erie over the past ten years. To make the nature preserve more resilient to future extreme weather events, WSP completed a resiliency study to assess how these extreme weather events impact the nature preserve and what natural and nature-based solutions can be added as part of solution that both adds resiliency and ecological value. Mr. Slaugh was the coastal and H&H team lead for the resiliency study. In this position, he led a team of engineers who completed a coastal analysis of Lake Erie. The included an analysis of historical wind and water surface data on Lake Erie. Mr. Slaugh's team used this data to calculate the Gumbel Distribution of the data and determine the recurrence interval wind speeds and water surface elevations. His team also used Coastal Engineering Design Analysis Software to determine the characteristics of the wave activity impacting the nature preserve during the design storms. Using this information, Mr. Slaugh's team presented the client with inundation maps that illustrated how the site is inundated during various design storms. The team investigated features such as offshore rock reefs and plantings, nearshore wetland restoration, sand dune rehabilitation, and vegetative wind blocks. All these

features were investigated and assessed for feasibility while also considering the implications that they would have on future recreational opportunities in the nature preserve.

— **Hunter's Marsh Habitat Restoration, Kitsap County, Washington**: WSP is performing structural and environmental design services for the replacement of the Tang Road seawall and the restoration of Hunter's Marsh on the Bangor Navy Base in Kitsap County. In its existing condition a stream feeds Hunter's Marsh which is impounded by the seawall with limited hydraulic connectivity to the Hood Canal. WSP is following a process-based approach to restore Hunter's Marsh to a pocket estuary in coordination with biologists, geologists, and archeologists. Considering Eric's experiences in both the estuarine and coastal fields, he is uniquely situated not only be the coastal lead for the project, but also understand the work done by both teams. As the coastal lead, Eric is overseeing the engineering team completing the numerical modeling of both wave and sediment transport activity. Mr. Slaugh is utilizing Delft-3D to complete three-dimensional modeling of sediment transport activity within the pocket estuary and the proposed culvert or tidal opening. His analyses are critical to designing a culvert and pocket estuary that flushes sediment and regular interval and maintains hydraulic connectivity to Hood Canal. As the coastal lead, he is also leading the design of the revetments that will protect the abutments on each end of the seawall. Considering the highly developed and sensitive nature of the site, Mr. Slaugh must design a revetment that provides the necessary protection to the seawall while minimizing its waterward impacts.

— **Carlson Spit Shoreline Restoration, Kitsap County, Washington**: The driver of this project is the erosion of Carlson Spit, which is causing heavy sediment deposition in a nearby naval maintenance area. To minimize that quantity of sediment depositing in this maintenance area, Mr. Slaugh is leading a coastal team to design a soft shoreline stabilization solution on Carlson Spit on Naval Base Kitsap. He is managing the numerical modeling team to first assess the wave activity at the site and then quantity the movement of sediment from the spit into the naval maintenance area. Mr. Slaugh and his team are completing this modeling using the Delft-3D Flow, Wave, and Morphology modules. The existing and proposed conditions are being modeled to quantify the reduction in sediment that is migrating from Carlson Spit into the naval maintenance area. The soft shoreline stabilization design follows techniques from Washington Department of Ecology's Soft Shoreline Stabilization Manual.

— **Mississippi River Pipeline Crossing Hydrotechnical Assessment and Full Mitigation Design, Camanche, Iowa**: Mr. Slaugh is the project manager for the hydrotechnical assessment and mitigation design for an exposed pipeline on the bottom of the Mississippi River. The pipeline is exposed for approximately 30-feet and has low depth of cover over significant portions of the river. Because of the potentially highly public nature of any leaks, Mr. Slaugh was asked to lead this project on a condensed timeframe. Mr. Slaugh's team constructed a 2-D hydraulic model using TUFLOW and utilized it to assess the scour on the pipeline during various design storms. These results were combined with the pipeline stress analysis, completed by pipeline engineering specialists on Mr. Slaugh's team, and the vortex induced vibrations analysis to assess the overall risk to the pipeline. Mr. Slaugh used these results to develop several conceptual mitigation alternatives for the client to consider. The mitigation alternatives for this pipeline crossing consisted of do nothing, benday weirs, and grade control structures. Based on the selection, Mr. Slaugh will guide his team through the design of the mitigation solution and issue one design set for permitting and issue one design set for construction.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Chamil Perera, PhD., EIT
Water Resources Engineer

Project Assignment:

Coastal Engineer

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

2

Education: Degree(s)/Year/Specialization:

Ph.D., Civil and Environmental Engineering – Water Resources Engineering, Clarkson University, Potsdam, New York
B.Sc.Eng. (Hons.), Mechanical Engineering, University of Moratuwa, Sri Lanka

Active registration: Year first registered/discipline:

Engineer in Training: California, (171338)

Other experience and qualifications relevant to the proposed Project:

Chamil Perera is a Water resources engineer with research and consulting experience in computational fluid dynamics (CFD) applications and numerical modeling of hydrology, hydraulics, sediment transport, water quality, and fluvial / coastal geomorphology. Chamil has supported various water resources engineering projects, including application related to bridge/culvert hydraulics and scour analyses; dam/spillway hydraulics and breach analysis; coastal wave analysis; coastal/fluvial geomorphology; coastal, riverine, and compound flood impact assessment; hydrodynamic loading on ports, harbors, oil/gas pipelines, and coastal structures; climate impact and resilience; stream/watershed restoration; and dredging, disposal, and sediment remediation.

CHAMIL R. PERERA, Ph.D.

Consultant, Water Resources Engineering

Years with the firm

2

Years total

4.5

Professional qualifications

Engineer-In-Training (EIT) Certification, Board for Professional Engineers, Land Surveyors, and Geologists, State of California, USA (Certificate No. EIT 171338).

Areas of practice

Bridge / Culvert Hydraulic & Scour Analysis
Climate Impact & Resilience
Coastal / Fluvial geomorphology
Coastal Wave Analysis
Coastal, Riverine, & Compound Flood Impact Assessment
Dam / Spillway Hydraulics and Breach Analysis
Dredging, Disposal, & Sediment Remediation
Hydrodynamic Loading on Ports, Harbors, Oil / Gas Pipelines, & Coastal Structures
Stormwater System Design
Stream / Watershed Restoration

Languages

English, Sinhala

CAREER SUMMARY

Chamil Perera is a Water resources engineer with research and consulting experience in computational fluid dynamics (CFD) applications and numerical modeling of hydrology, hydraulics, sediment transport, water quality, and fluvial / coastal geomorphology. Chamil has supported various water resources engineering projects, including application related to bridge/culvert hydraulics and scour analyses; dam/spillway hydraulics and breach analysis; coastal wave analysis; coastal/fluvial geomorphology; coastal, riverine, and compound flood impact assessment; hydrodynamic loading on ports, harbors, oil/gas pipelines, and coastal structures; climate impact and resilience; stream/watershed restoration; and dredging, disposal, and sediment remediation. In addition, Chamil developed a background in dams and reservoir engineering through studies of low-head dam removal feasibility, dam-break inundation mapping, spillway design, and numerical model development for coastal and riverine dam / levee breaching, best highlighted with his contribution to Dam and Levee Breach (DLBREACH) model development adopted by HEC-RAS versions 6.0 and higher. Chamil is a member of the American Society of Civil Engineers (ASCE)'s Environmental and Water Resources Institute (EWRI) Sedimentation Committee United States Society on Dams' Dam Decommissioning Committee.

EDUCATION

Ph.D., Civil and Environmental Engineering – Water Resources Engineering, Clarkson University, Potsdam, New York	2019
B.Sc.Eng. (Hons.), Mechanical Engineering, University of Moratuwa, Sri Lanka	2013

PROFESSIONAL MEMBERSHIPS

Member, Dam Decommissioning Committee, USSD	2022-Present
Member, EWRI Sedimentation Committee, ASCE	2021-Present

PROFESSIONAL EXPERIENCE

- **Tidal Analysis for the Proposed Drainage Structures at Tampa Westshore, Interchange, Old Tampa Bay, Florida, USA (2024) [Client: Florida Department of Transportation (FDOT)]**: *Hydraulic/Coastal Engineer*. Reviewed technical report / numerical models and responded to client (FDOT)'s comments; provided evaluations on hydraulic analyses to examine if numerical models sufficiently simulate tidally influenced flow conditions along the Lemon Creek that impacts the drainage design.
- **CFD Analysis for Willamette River High River Level Outfall, Lake Oswego, Oregon, USA (2023) [Client: AECON Group, Inc.]:** *CFD Engineer*. Developed CFD models using FLOW-3D HYDRO to assess scour and bank stability in the vicinity of the high river level outfall on the Willamette River for the Lake Oswego wastewater treatment facility.
- **Route 206 Bridges over Flood Channel and Stony Brook – Ida Hurricane Scour Analysis and Structural Repairs, Princeton, New Jersey, USA (2022) [Client: New Jersey Department of Transportation (NJDOT)]:** *Technical Reviewer*. Reviewed hydraulic modeling tasks performed by Arora and Associates PC for

frequency flows and hurricane Ida to evaluate the impact of the proposed bridge design on flood inundation limits and implement bridge scour countermeasures.

- **Coastal Flooding Analysis for SR 649 Railroad Underpass, Groton, Connecticut, USA [Client: Connecticut Department of Transportation (CTDOT)] (2024):** *Coastal Engineer*. Perform coastal flooding analyses using tidal, wave, and storm surge data from NOAA tide/current gage data and North Atlantic Coast Comprehensive Study (NACCS).
- **Analysis of Coastal Flood Impact from Sea-level Rise, Pinellas County, Florida, USA (2023) [Client: Pinellas County, Florida]:** *Coastal Engineer*. Evaluated future coastal flood impacts and nuisance flooding extents for Clearwater Beach and St. Pete Beach based on NOAA sea-level trends.
- **Repair Eroded Shoreline at Carlson Spit in Hood Canal, Naval Base Kitsap, Bangor, Washington, USA (2022/2023) [Client: Naval Facilities Engineering Command Northwest (NAVFAC NW)]:** *Coastal Engineer*. Evaluated shoreline evolution process at Carlson Spit using a coupled current, wave, and sediment transport model developed with Delft3D.
- **Coastal Analysis for the Design of North Extension Stabilization Step 1 (NES1), Port of Alaska, Anchorage, Alaska, USA (2023) [Client: Manson Construction Company]:** *Coastal Modeler*. Developed wave models using Simulating Waves Nearshore (SWAN) model for wave height and wave-induced scour analyses.
- **Wave Analysis for the Tang Road Repairs Project, Naval Base Kitsap, Bangor, Washington, USA (2023) [Client: Naval Facilities Engineering Command Northwest (NAVFAC NW)]:** *Coastal Engineer*. Developed computational grids for numerical models developed using SWAN to calculate significant wave heights at the project site.
- **Assessment of Secondary and Cumulative Impacts on Wetlands in the Boston Harbor Context, Boston, Massachusetts, USA (2022) [Client: Massachusetts Port Authority (Massport)]:** *Coastal Engineer*. Developed coastal models using MIKE 21 Flexible Mesh (FM) approach to evaluate changes in flow patterns and scour potential in the vicinity of proposed construction of runaway safety area of Runway 9-27 of Logan International Airport.
- **Hydrologic and Hydraulic Analyses for Route 31 Over Furnace Brook (NJDOT Structure No. 2111-154), Oxford Township, Warren County, New Jersey, USA (2022) [Client: New Jersey Department of Transportation (NJDOT)]:** *Technical Reviewer*. Reviewed SRH2D models developed for existing and proposed conditions for 2-, 10-, 25, 100-, and 500-year return period flows and New Jersey Flood Hazard Area (FHA) flow conditions.
- **Drainage Design for Old Lebanon Dirt Road, Mount Juliet, Tennessee, USA (2022) [Client: City of Mt. Juliet Public Works]:** *Hydraulic Engineer*. Reviewed SRH2D models developed for existing and proposed conditions for 100-year return period flows. Performed significant model revisions to improve the quality of computational mesh, correctly locate inlet and outlet boundary conditions, and allow pressure and weir flow conditions of culverts using HY-8 model.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Mike Marano, PE
Vice President, Civil Engineering

Project Assignment:

Dredging Engineer

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

32

Education: Degree(s)/Year/Specialization:

Bachelor of Science, Fairleigh Dickinson University / 1992 / Civil Engineering

Active registration: Year first registered/discipline:

Professional Engineer: New Jersey, (24GE04087500) 1997/ Civil

Other experience and qualifications relevant to the proposed Project:

Michael Marano has experience in performing dredge engineering tasks for navigation and coastal resiliency, as well as transportation improvement projects. He has served as project manager for the design, permitting, advertisement and construction engineering on numerous shallow draft maintenance dredging projects removing various dredge material types. Michael has also lead and executed the acquisition, design, permitting, and construction of various different dredge material placement sites, such as; confined disposal facilities (CDF's), beach fill placement and thin-layer application in degraded salt marsh areas. Prior to Superstorm Sandy recovery projects, Michael has served as Project Manager and Lead Civil Engineer for a variety of transportation improvement projects from concept development, design and permitting through Construction Services. Other leadership responsibilities include coastal resiliency, final ROW Acquisition documents; construction staging and maintenance of traffic design, geometric design and environmental permitting.

MICHAEL J. MARANO, P.E.

Dredging Engineer

Years with the firm

5

Years total

32

Professional qualifications

Professional Engineer: New Jersey 24GE04087500 10/1997; Pennsylvania PE-051692-E

CAREER SUMMARY

Michael Marano has experience in performing dredge engineering tasks for navigation and coastal resiliency, as well as transportation improvement projects. He has served as project manager for the design, permitting, advertisement and construction engineering on numerous shallow-draft maintenance dredging projects removing various dredge material types. Michael has also lead and executed the acquisition, design, permitting, and construction of various different dredge material placement sites, such as; confined disposal facilities (CDF's), beach fill placement and thin-layer application in degraded salt-marsh areas. Prior to Superstorm Sandy recovery projects, Michael has served as Project Manager and Lead Civil Engineer for a variety of transportation improvement projects from concept development, design and permitting through Construction Services. Other leadership responsibilities include coastal resiliency, final ROW Acquisition documents; construction staging and maintenance of traffic design, geometric design and environmental permitting.

EDUCATION

B.S. Civil Engineering Technology, Fairleigh Dickinson University	1992
A. A. S. Civil Engineering Technology, Mercer County Community College	1990

ADDITIONAL TRAINING

WSP Project Management Training

PROFESSIONAL EXPERIENCE

— **Marine Transportation System Engineering 2020 NJDOT:** As deputy project manager, Mike is one of the two Engineers of Record, directly responsible for successful construction, submittal review, and construction inspection using the Contract Documents. Mike is in daily communication with NJDOT to fulfill the delivery schedules for submittal reviews, field meetings, and construction services. Work efforts include support and inspection for the construction and maintenance of navigation channels and Confined Disposal Facilities following NJDOT policy and procedures as outlined in the 2019 Standard Specifications for Roadway and Bridge Construction; bid support; contractor submittal review; Preconstruction and project meeting support; project inspection; performance monitoring and analysis; claim review; preparation of Changes of Plans; and preparation of As-Built Plans. Construction Services are included for the following projects:

- Maintenance Dredging and Channel Improvements for Cedar Run Channel, Westecunk Creek Channel and Parkers Run Channel
- Dredging of Nantuxent Creek Navigation Channe
- Maintenance Dredging and Channel Improvements for Beach Creek 1
- Reconstruction of the Story Island Confined Disposal Facility
- Maintenance Dredging and Channel Improvements for the Metedeconk River / Kettle Creek Complex.

- Gateway CDF Access Improvements (Bridge Construction and Southerly Roadway)
- Maintenance Dredging and Channel Improvements for the Beach Haven Channel Complex
- Reconstruction of the Ludlam Island Confined Disposal Facility
- Maintenance Dredging and Channel Improvements for Andrews Point Channel, Silver Bay Channel, Silver Bay Entrance Channel, Pier 1 Channel, Bay Shore Bridge Channel and Lavallette Beach Channel
- Maintenance Dredging and Channel Improvements for Good Luck Point Channel, Berkeley Shores Channel North, Berkeley Shores Channel and Berkeley Shores Channel Spur
- Maintenance Dredging and Channel Improvements for Cedar Run Channel, Westecunk Creek Channel and Parkers Run Channel
- Maintenance Dredging and Channel Improvements for Lakes Bay Channel, Lakes Bay Channel Spur, Tunis Basin and Risley's Channels
- Maintenance Dredging and Channel Improvements for Absecon Creek Channel

— **Ocean Drive (C.R. 619) Emergency Repairs from Hurricane Sandy, Borough of Avalon, Cape May County, NJ:**

Michael has served as the lead Highway Design Engineer for each of these contracts has reviewed the project bathymetry and aerial mapping and has been directly responsible for the development of construction plans, engineering estimate using Trans-port, and specifications. Mike prepared the roadway design, geometric design (horizontal and vertical alignments), and preparation of the approved Design Exception Report; provided oversight of the Final ROW documents including NJDEP Tideland parcels; and lead the conceptual design and alternative analysis process required to obtain an FHWA approval of the environmental document in accordance with the NEPA process. Designed the temporary cross-over alignments on/for the MPT plans and provided oversight of the full Traffic Control and Staging Plans (MPT). Assisted the client with the administration of Access for Contracts 1A & 1B.

Route 23 Sussex Borough Realignment and Papakating Creek Bridge Replacement, Sussex Borough and Wantage Township, Sussex County, NJ NJDOT: As Civil/Highway Design Task Leader prepared preliminary geometric design (horizontal and vertical alignments layout of lane configuration and transitions; provided coordination, scheduling and technical support to a two-man survey crew; prepared proposed preliminary right-of-way lines and quantified impacts; coordinated, scheduled and supported geotechnical boring program; and assisted in the preparation of the Environmental Assessment document for submission to the FHWA. Prepared the geometric design (horizontal and vertical alignments) and a Design Exception Report; provided oversight of Final ROW acquisition plans and documents; designed and prepared the MPT scheme and plans; and prepared the geometric design (horizontal and grading) of five mechanically stabilized earth or segmental retaining walls. Directly responsible for the preparation of the access cut-out plans and administration of access for 29 property owners. Responsible for the development of construction plans, engineering estimates and specifications related to roadway design/civil engineering tasks.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

(John C.) Charlie Wildman, PE, PG
Lead Consultant, Geological & Geotechnical Engineering

Project Assignment:

Geotechnical
Engineer

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

4

Education: Degree(s)/Year/Specialization:

University of New Orleans: Master of Science in Civil Engineering / 2018
University of Mississippi: Bachelor of Science in Geological Engineering / 2009
South Dakota School of Mines & Technology: Six Week Geological Engineering Field Camp / 2007

Active registration: Year first registered/discipline:

Professional Engineer: Louisiana, 2018 (42928)
Professional Geologist: New York (1048)

Other experience and qualifications relevant to the proposed Project:

Charlie has 13 years of experience in geological and geotechnical engineering and currently serves as a Lead Consultant in these disciplines. His experience includes both field and analytical practices, providing Charlie a unique perspective to help clients solve complex ground challenges. His experience spans the environmental, infrastructure and water industries. Charlie has specialized in the design, construction, and rehabilitation of hydraulic structures, including dams, levees, floodwalls, floodgates, and similar large-scale water conveyance or retention structures. During that time, he planned, led, executed, and reviewed geotechnical drilling programs throughout the U.S. and central America.

(John C.) Charlie Wildman, PE, PG

Lead Consultant, Geological & Geotechnical Engineering

Years with the firm

4 (2009 - 2013)
Rehired February 2024

Years total

13 (2009-2013; 2015-present)

Education

University of New Orleans, MS in Civil Engineering, 2018

University of Mississippi, BS in Geological Engineering, 2009

South Dakota School of Mines & Technology, Six Week Geological Engineering, 2007

Professional registrations

Professional Engineer, LA (42928)

Professional Geologist, NY (1048)

CAREER SUMMARY

Charlie has 13 years of experience in geological and geotechnical engineering and currently serves as a Lead Consultant in these disciplines. Charlie's early career was predominantly spent in the field completing geological and geotechnical site characterization including rock and soil logging, completing field testing, installing geotechnical instruments, and coordinating and managing drilling subcontractors. Over the past nine years, Mr. Wildman has specialized in the design, construction, and rehabilitation of hydraulic structures, including dams, levees, floodwalls, floodgates, and similar large-scale water conveyance or retention structures. During that time, he planned, led, executed, and reviewed geotechnical drilling programs throughout the U.S. and central America. He is a technical lead for drilling in dams, as well as rock core logging. Throughout his career, Mr. Wildman often served as a drilling inspector, especially for high-risk drilling programs in dams, and regularly acted as the primary instructor for training junior staff in soil and rock core logging. He is a professional geologist licensed in New York and a professional engineer licensed in Louisiana. Throughout his academic and professional career, he has consistently been recognized as an outstanding student and practitioner of geological engineering practice, as evident by being recognized by his undergraduate university as "The Most Outstanding Senior Student in the Department of Geology and Geological Engineering" in 2008 and being awarded the prestigious Douglas R. Piteau Award for outstanding younger member at the international level by the Association of Environmental and Engineering Geologists (AEG) in 2021.

As a note, the dates provided in the experience section below, are specifically the dates of field and drilling work. Duration of office-based tasks are not included in the summaries of experience listed below.

PROFESSIONAL EXPERIENCE

- **East Side Coastal Resiliency, New York, New York – February and April 2017:** Mr. Wildman served as the lead field engineer for the geotechnical drilling program for Reaches D through H and N through Q of the East Side Coastal Resilience flood risk reduction project on the eastern portion of Manhattan in New York City. The geotechnical drilling program included soil and rock drilling, including identifying rock lithology, rock strength, core recovery, RQD, discontinuity frequency and characteristics, and degree of weathering. Mr. Wildman also completed downhole falling head permeability testing at specified intervals to evaluate permeability of subgrade soil strata. He managed and coordinated the geotechnical drilling subcontractor and QC'ed the work of less experienced drilling inspectors.
- **Addison Evans Water Production Facility Flood Risk Reduction, Chesterfield, Virginia, September and October 2020:** Wildman served as the lead field engineer for Phase 1 of the geotechnical drilling program for the Addison Evans Water Production Facility flood risk reduction project in Chesterfield, Virigina. The geotechnical drilling program included soil and rock drilling, including identifying rock lithology, rock strength, core recovery, RQD, discontinuity frequency and characteristics, and degree of weathering. Mr. Wildman also completed downhole falling head permeability testing at specified intervals to evaluate permeability of subgrade soil strata. He managed and coordinated the geotechnical drilling subcontractor. During Phase 2 of the geotechnical drilling program, he served as the office-based coordinator and provided subcontractor management, coordination with the client, scheduling drill rig inspectors, and drilling log QC.

- **Eagle Mountain Dam and Levee Rehabilitation, Azle, Texas – January 2010 to March 2010, and August to November 2010:** WSP provided geotechnical engineering design services to the Tarrant Regional Water District for the rehabilitation of Eagle Mountain Dam and Levee system. Mr. Wildman served as the lead field engineer for Phases 3 and 4 of the rehabilitation program, including geotechnical drilling and geophysical programs at the site. Mr. Wildman provided drilling inspection, including advanced rock and soil logging and packer testing; direction and field oversight for a chemical grouting test program; and oversight and calibration of automated vibrating wire piezometers and automated data collection system. Field work completed during Phases 3 and 4 of the project provided geological and geotechnical characterization used in subsequent grout curtain/seepage cutoff wall design. *This project was recognized as the 2014 National Rehabilitation Project of the Year by the Association of State Dam Safety Officials.*
- **Washington D.C. Metrorail Silver Line Expansion, Herndon, Virginia – April to June 2010:** WSP provided geotechnical engineering design services for the Metropolitan Transit Authority for Phase 2 of the Washington, D.C., Metrorail extension to Dulles Airport. Phase 2 included the portion of the expansion from Tyson's Corner, VA, to Dulles Airport. Mr. Wildman was responsible for 1) geotechnical drilling inspection for the planned tunnel portion of the project 2) training other inspectors in rock core logging, including assessment of rock lithology, rock quality designation (RQD), rock strength, weathered state, and discontinuity descriptions including discontinuity spacing, roughness, orientation, and alteration/infilling 3) packer testing 4) oversight of downhole televiewer surveys and 5) quality checking rock core logs completed by other inspectors.
- **Carl R. Darnall Hospital Replacement, Fort Hood/Killeen, Texas – December 2010 and January 2011:** WSP provided geotechnical engineering design services for the foundation for a hospital replacement at Fort Hood near Killeen, Texas. Mr. Wildman served as the lead field engineer and was responsible for geotechnical drilling inspection, including soil and rock logging. Rock core logging included rock lithology, rock strength, core recovery, RQD, discontinuity frequency and characteristics, and degree of weathering. Mr. Wildman trained additional drilling inspectors in logging soils according to USCS and rock according to USACE requirements. Mr. Wildman QC'ed soil and rock logs prepared by others and oversaw drilled shaft O-cell load tests.
- **Second Avenue Subway, New York, New York – April to July 2011 and October 2011 to February 2012:** WSP provided construction management services for both the tunnel boring machine (TBM) excavation and drill-and-blast excavation of Second Avenue Subway on the upper east side of Manhattan. Mr. Wildman served as an inspector and as a project geologist in a 24-hr work environment and was responsible for construction inspection of excavation progress and excavation support; management of contractors and labor unions, including addressing construction contractor RFIs and differing site condition claims; as well as providing geological mapping of the exposed rock face. Geologic mapping included identifying exposed rock lithology according to pre-defined lithologic strata; mapping and describing discontinuities in terms of discontinuity type, spacing, aperture, infilling, weathering, and water conditions; and mapping installed rock support structures such as rock bolts, strut supports, and rings.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:

Name & Title:

Nathan Lipson, AICP, LEED, GA
Senior Environmental/Transportation Planner

Project Assignment:

Grants/Outreach

Name of Firm with which associated:

WSP USA Inc.

Years' experience with this Firm:

<1

Education: Degree(s)/Year/Specialization:

Tulane University, MSC in Sustainable Real Estate Development, 2017
BA urban Planning, University of Illinois at Ubana-Champaign, 2016

Active registration: Year first registered/discipline:

LEED Green Associate (11175925), 2020

Other experience and qualifications relevant to the proposed Project:

Nathan Lipson is a Senior Environmental and Transportation Planner with 7 years of experience delivering planning consulting services to clients. They have managed client needs, employed creative solutions, and identified actionable initiatives through strategic planning, consulting, and funding services. Nathan also specializes in grant writing and public outreach.

NATHAN LIPSON, AICP, LEED GA *(he/they)*

Sr. Environmental/Transportation Planner

Years with the firm

< 1

Years total

7

Education

Tulane University, MSC in Sustainable Real Estate Development, 2017

University of Illinois at Urbana-Champaign, BA in Urban Planning, 2016

Professional registrations

American Institute of Certified Planners: US

LEED Green Associate: US

CAREER SUMMARY

Nathan Lipson is a Senior Environmental and Transportation Planner with 7 years of experience delivering planning consulting services to clients. They have managed client needs, employed creative solutions, and identified actionable initiatives through strategic planning, consulting, and funding services.

RELEVANT PROJECT EXPERIENCE

Program Management, Port of South Louisiana, Board of Commissioners Port of South Louisiana, St. Charles, St. James and St. John Parishes, Louisiana, Program Manager. The Program Management assignment includes but is not limited to oversight of the Master and Strategic Planning efforts including implementation, Grants Application and Management, Procurement Support including Assessment of Consultant Capabilities, Alternative Delivery and Public Private Partnerships, Design Management and Construction Administration through the life of the contract. The Program also includes the creation of a Project Controls system for the Port. Nathan provides grant administration advisory services, grant application development and submittal, and recently assumed the role of Project Manager (August 2023). As the Port's lead grant administrator, Nathan has prepared Capital Outlay Requests (LADOTD, 2023) as well as a Port Priority grant application (LADOTD, 2023) which resulted in a $4.9 million grant award for a facility improvement project. Nathan also prepared a PROTECT application (USDOT, 2023) for this client (grant awards pending as of March 2024) and is actively preparing a grant for PIDP (USDOT, 2024). Dates: April 2021- ongoing.

Grant Support Services, City of Charlotte, North Carolina, Transportation Planner. Nathan is actively support two ongoing grant efforts for the City of Charlotte:

(1) **BIP Grant Application (USDOT, 2024)** for improvements/replacements for a bundle of six bridges across the City of Charlotte.
(2) **RAISE Grant Agreement and Administration (USDOT, 2024)** to assist the city in developing its paper grant agreement for a RAISE grant it won in FY2023, and to manage the distribution of grant funding across the project over a multiyear construction period. This grant will support the West Sugar Creek Mobility Corridor project which includes multiple Complete Street enhancements, new mobility services, and pedestrian safety improvements along 3.5 miles of W Sugar Creek Road. The project will implement 3 mobility hubs, improved ped crossings, smart lighting, and a multi-use path and new sidewalk to connect the hubs at a light rail station and two neighborhood centers.

Both efforts are ongoing; BIP grant has not yet been submitted. Dates: January 2024 – ongoing.

Areas of Persistent Poverty (AoPP) Project, Capital Area Transit System (CATS), Baton Rouge, Louisiana, Transportation Planner. As part of an FTA grant targeting areas of persistent poverty (AOPP), this project aims to improve transit access across 41 census tracts. Currently WSP is in the early stages of this project, conducting an in-depth evaluation of existing transportation infrastructure and having developed robust public outreach materials with the assistance of stakeholders, Nathan has attended two public outreach workshops (September 2023) and will be presenting the findings of the public outreach in another series of upcoming public workshops (March 2024). The results of our public outreach and a review of best practices will result in a list of recommendations for the agency to pursue to improve transit service in these AoPP. Dates: July 2023 – ongoing.

On-Call Planning Services, New Orleans Aviation Board (MSY), Transportation Planner.

Nathan worked on various projects for the Louis Armstrong New Orleans International Airport (MSY) over nearly six years.

North Terminal Project – MSY's North Terminal Project created a new passenger terminal for the medium-hub airport at a cost of $1.2 billion. Nathan was part of a consultant team

responsible for tracking project funding associated with the Passenger Facility Charge (PFC) program via the Federal Aviation Administration (FAA). In this role, Nathan prepared two PFC applications for amendments to MSY's PFC program. Dates: December 2016-October 2019

MSY Next – Following the opening of the North Terminal in 2019, the $1.6 billion "MSY Next" capital investment program focused on intermodal connectivity. This contract involved the management and support of subcontractors for environmental (NEPA) analysis and traffic engineering, the production of feasibility analyses for capital planning, grant application preparation (including supporting analyses such as benefit-cost analysis), and various other tasks to support the planning program. Nathan's work with the environmental team supported the review and production of documents to support two categorical exclusions (CATEXs) for capital projects. Dates: October 2019-April 2023

Program Management & Oversight, Finance New Orleans (FNO), Project Manager. Nathan managed FNO's new three-fold program: (1) enabling single-family mortgage products that support sustainable and environmentally supportable home improvements; (2) incentivizing multi-family private developer activities through public sector support such as PILOTs (payments in lieu of taxes); and (3) infrastructure development in partnership with the City of New Orleans. Nathan was the primary point of contact for this contract and was responsible for outreach and coordination between FNO and several multifamily developers to review PILOT agreements and track ongoing performance. Dates: November 2020-April 2023

On-Call Planning and Transition Management, New Orleans Regional Transit Authority (RTA). Transportation Planner. Nathan was involved in several projects for the RTA detailed below.

Agency Management Transition – Nathan assisted in the complex process of transitioning the agency from delegated management to a direct management model. Nathan coordinated facility inspections on behalf of the RTA and assisted with other transition activities in 2019. He was also involved in the hiring of executive staff to replace those employed through delegated management. Dates: January 2017- January 2020

Fare Equity Analysis – The RTA requested that its on-call consultant analyze its New Links comprehensive operational analysis recommendations for fare equity. Nathan produced maps using GIS to visualize the proximity of transit lines to both historically disadvantaged populations but also job centers in the New Orleans metro area. Dates: October 2022 – December 2022

Alternative Revenue & Fare Collection Analysis – Following the impacts of the Covid-19 pandemic, the RTA engaged its on-call consultant to analyze the impacts of reduced ridership to agency revenue, as well as some analysis on fare rates. Nathan was responsible for analyzing cashless fare system technologies for consideration. Nathan was also responsible for calculating potential revenue increases from increased area millages supporting the RTA. Dates: June 2020 – August 2020

TEC Professional Services Questionnaire

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

PROJECT NO. 1

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
Mid Barataria Sediment Diversion Plaquemines Parish, LA Louisiana CPRA Brad Barth, PE Tel.: (225) 342-7308 Email: Bradley.Barth@la.gov PO Box 44027 Baton Rouge, LA 70804	The Mid-Barataria Sediment Diversion (MBSD) structure will be located along the west bank near Mississippi River Mile 61. The outfall area of the project, the Mid-Barataria Basin, is suffering from land loss due to hydrologic alteration, sediment deprivation, subsidence, sea level rise, and saltwater intrusion. The MBSD project will reintroduce freshwater and sediment from the Mississippi River to the Basin to reestablish deltaic processes in order to build, sustain, and maintain land. The MBSD would be expected to build and nourish ten to thirty thousand acres of critical coastal wetlands over a 50 year period. The project also includes restoring and preserving critical coastal ecosystems. WSP, as a subconsultant, is designing the intake structure that has approximate dimensions of 300 ft wide, by more than 50 ft high, by over 800 ft long, that will divert more than 75,000 CFS of sediment-laden freshwater to the Barataria Bay. The project is being delivered under a Construction Management At-Risk (CMAR) delivery where the owner has retained a contractor and engineer to design and construct the project, with both entities being retained by the Owner.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2027 (Est)	$1.5B	$4.5M

PROJECT NO. 2

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
Louisiana Watershed Initiative – Region 3 Modeling Contract Boeuf River, Bayou Macon, Tensas River and Bayou Cocodrie Watersheds, Louisiana LADOTD Ms. Jie Gu, PE 225.379.1483 Jie.Gu2@la.gov	WSP was awarded the contract to model Louisiana Department of Transportation & Development (DOTD) Modeling Region 3 as a part of the Louisiana Watershed Initiative (LWI) statewide modeling effort. This Region encompasses four watersheds in northeast Louisiana, including the Boeuf River watershed (HUC8 #08050001). The first part of this modeling effort included data gap analysis and development of detailed methodologies to model each watershed. Additionally, multiple diversions, weirs and other flood control structures make for very complex flow patterns. The modeling contract also includes scoping, public outreach, hydrologic and hydraulic analyses, consequence modeling and floodplain mapping. The watershed-scale models developed by WSP for the LWI program will serve as the basis for analysis of future developments, flood mitigation feasibility studies, watershed management strategies and consequence and risk assessment. Across the four watersheds in Region 3, WSP is modeling over 2,900 miles of streams. The models will incorporate extensive survey data for hydraulic structures (over 1600 structures) and channel bathymetry (over 800 channel cross-sections) that is being collected by the WSP Team. The hydrologic and hydraulic models will be calibrated to multiple historic events and will include both one- and two-dimensional models developed using Hydrologic Engineering Center's (HEC) suite of software products.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2025 (Est)	$ 12,000,000	$10,500,000

TEC Professional Services Questionnaire

PROJECT NO. 3		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility**	
Shoreline Protection at Jean Lafitte National Historical Park and Preserve, Louisiana National Park Service (NPS) Tom Maclosky, RLA NPS Denver Service Center National Capital Region 1100 Ohio Drive, SW Washington, DC 20242 Office: 703.678.2005	WSP led pre-design and design services to help restore 50 acres of submerged aquatic vegetation (SAV) lost in the Barataria Preserve unit of JELA due to the Deepwater Horizon (DWH) oil spill. The projects protects the nearshore environment from wave energy to create habitat conditions suitable for SAV to reestablish itself in a cost-effective manner. It also protects the shoreline from further erosion. WSP worked closely with the park, DSC, DOI, and staff from Louisiana State University(LSU)/USGS to develop three schematic design alternatives for a breakwater that met the project budget and objectives as set for in the Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement for the DWH oil spill. To identify potential alternative breakwater structures, we developed screening criteria and facilitated a viability analysis. WSP also conducted bathymetric and geotechnical surveys to inform the alignment and construction material/method decisions, as well as facilitated an intensive 3-day VA/VE workshop to select a preferred alternative for which to complete schematic design, design development, construction documents and cost estimates. WSP also provided permitting and compliance services for the project.	
Completion Date (Actual or estimated)	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2019	$1.6M	$1.6M

PROJECT NO. 4		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Canal Reclamation at Barataria Preserve Environmental Assessment Jean Lafitte National Historical Park and Preserve, Louisiana National Park Service (NPS) Mary Pacheco NPS Denver Service Center 12795 West Alameda Parkway Denver, CO 80225-0287 303.969.2167	WSP's multidisciplinary team, consisting of ecologists, planners, and engineers, worked with the NPS to prepare an EA, conceptual engineering designs, and a coastal zone use/USACE Section 404-Section 10 permit for a proposed project to reclaim disturbed wetlands in the 25,000-acre Barataria Preserve, a unit of the Jean Laffite National Historical Park and Preserve. The disturbed wetlands included human-made non-historic canals and their earthen spoil deposits. The purpose of the project was to restore functions, resources, and values related to hydrology in the Preserve affected by non-historic canals and spoilbanks, while increasing the resiliency of Preserve ecosystems to subsidence, sea level rise, and storm events. Alternatives included reclamation of canals by degrading their spoilbanks and dikes to the level of the surrounding wetlands, and partially filling the open water with this material. WSP developed a scoping brochure informing the public about the project, helped develop the alternatives, analyzed the impacts of the alternatives in the EA and prepared the Finding of No Significant Impact, as well as the NPS impairment determination.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2010	$130k	$130k

TEC Professional Services Questionnaire

PROJECT NO. 5		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Franklin 98 Living Shoreline Apalachicola Bay, Florida Apalachee Regional Planning Council (ARPC) Josh Adams, 850.488.6211, JAdams@arpc.org 2507 Callaway Rd #200 Tallahassee, FL 32303	WSP is leading a multi-year task order to design and oversee implementation of a living shoreline project along a 12 mile stretch of Apalachicola Bay. The project involves establishing an intertidal marsh through the introduction of oyster reefs to attenuate wave energy. The project enhances the ecological functions of the coastal habitat and mitigates chronic erosion of the adjacent Highway 98. WSP assisted ARPC in developing the project concept and prepared the grant application. WSP has completed an initial Coastal Conditions Analysis which included a compilation of data regarding topography, bathymetry, tidal datums, wind records, sea level rise and developed a preliminary coastal model using the MIKE21 spectral wave (SW) module. We are currently finalizing design and will provide construction support and monitoring through 2024.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2026 (est)	$4 M	$4 M

PROJECT NO. 6		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Higbee Beach Wetland Restoration Project Cape May, NJ New Jersey Department of Environmental Protection (NJDEP) Name: Mark Walters Address: mark.walters@dep.nj.gov T: 609.633.7338	WSP implemented the multi-phased restoration of several hundreds of acres of salt marshes and 35 acres of maritime forest along the Delaware Bay. WSP executed studies to support design development, including habitat mapping, wetland delineations, biological benchmark assessment, salinity screenings, reference marsh assessment, fishery resources identification, topographic and bathymetric surveys, and hydrologic, hydraulic, and hydrodynamic modeling. Design includes marsh restoration through inlet modification to create the appropriate tidal prism and construction of an 6,860-foot tidal inundation contro berm with four 72-inch water control structures and a series of flap gates to manage flood risk to the upper watershed, protect the eastern portion of the marsh from tidal inundation, and allow habitat management of the northern marsh. The project involved intensive sediment characterization and geotechnical investigations to satisfy regulatory requirements and inform the geotechnical and structural design elements. The characterization also supported the application for Acceptable Use Determination (AUD) for the beneficial use of dredged material onsite.Additional design elements include bridge design to provide access over the restored inlet channel, the design of an extensive nature trail network, the architectural design of three wildlife viewing blind designs sited at six locations within the Wildlife Management Area, the architectural design of a large viewing platform, interpretive signage and other recreational features. WSP is also contracted to provide construction oversight and post construction monitoring services.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2025 (est)	$30M	$2M

TEC Professional Services Questionnaire

PROJECT NO. 7		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Route 72 Over Manhawkin Bay Tidal Wetland Mitigation, Submerged Aquatic Vegetation (SAV) Mitigation and Shoreline Revetment New Jersey Department of Transportation 1035 Parkway Ave., Trenton,NJ Pankesh Patel 609-963-1008	WSP has been supporting NJDOT on a multi-year, 3-phase program to repair and expand the NJRoute 72 crossing. WSP's scope of services included numerous civil and environmental design aspects of this substantial program, from the design a new bridge over Manahawkin Bay, permitting of wetland and SAV impacts, design of new shoreline revetments, development of a SAV mitigation plan, and the design of the 45 acre Cedar Bonnet tidal wetland mitigation site, a former dredge material disposal facility. WSP performed detailed modeling of the tidal and coastal storm surge conditions within the Bay.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2026 (est)	$319M	$33M

PROJECT NO. 8		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Shell Point Habitat Restoration and Enhancement Walkulla County, FL Florida Department of Environmental Protection	As part of the Early Restoration Natural Resources Damage Assessment program, in response to the Deepwater Horizon oil spill, FDEP completed beach nourishment and other improvements at Shell Point Beach Park. WSP provided environmental monitoring, permitting, and design assistance to the prime contractor. This included mapping of emergent marsh and seagrasses within the project site to avoid the existing natural resources during the design phase, as well as recommendation of a design for a living shoreline component with oyster reefs and emergent marsh. WSP prepared detailed planting plans and specifications in ArcGIS and CADD. WSP prepared state and federal environmental permit applications, supported procurement and provided compliance review during construction.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2018	N/A	$25K

TEC Professional Services Questionnaire

PROJECT NO. 9		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Port Everglades Southport Turning Notch Expansion and Wetland Enhancement Fort Lauderdale, FL Broward County 1850 Eller Drive, 5th Floor Fort Lauderdale, FL33316 Mike Saltzman 954.468.0155	In an effort to increase berthing space to accommodate larger cargo ships, Port Everglades engaged WSP to design the $470M expansion of its Southport Turning Notch. Improvements include the redevelopment of 25 acres of container yard and berthing apron space. WSP supported dredging, earthwork, excavation, water management and drainage. A drainage ditch was removed and replaced with a 16.5 ac new wetland area. A unique component of the work included survey of 9,500 corals. 841 corals were relocated and another 1,000 corals were donated.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2013	$470M	$2.3M

PROJECT NO. 10		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Lincoln Park Tidal Marsh Restoration project Hudson County, NJ New Jersey Department of Environmental Protection (NJDEP) Office of Natural Resource Restoration Trenton, New Jersey 08625 Dave Bean, (609) 984-3865 david.bean@dep.state.nj.us	WSP was contracted by NJDEP with Hudson County and the National Oceanic and Atmospheric Administration (NOAA) to form part of an innovative program to restore wetlands and redevelop a landfill for active recreational use by removal of 42 acres of fill and restore saltwater marsh habitat and tidal creeks within the intensely urbanized corridor of northeast New Jersey. In addition to removing uncharacterized fill from the shorelines of the Hackensack River, these efforts restored anadromous fish spawning habitat and supported an effort to establish more resilient coasts. WSP conducted an array of baseline studies, including sediment characterization and habitat assessments. WSP also led the design and permitting of the marsh and supported the development of grant applications for which the client received $10.6M. During construction, WSP provided management and oversight and monitered flora and fauna.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
2013	$10.6M	$1.4M

TEC Professional Services Questionnaire

M. List all prior and/or on-going litigation between Firm and Jefferson Parish. Please attach additional pages if necessary.

Parties:		Status/Result of Case:
Plaintiff:	**Defendant:**	
1. None		WSP USA Inc. does not have prior or on-going litigation with Jefferson Parish. We have nothing to disclose here.
2.		
3.		
4.		

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

Please see additional information.

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

Signature: _____ **Print Name:** Max Nassar

Title: Senior Vice President Managing Director **Date:** 7/12/24

Introduction

WSP USA Inc. offers over a century of experience in the planning, design, and construction management of critical infrastructure projects. Nationally, our staff of 10,000+ provide engineering and multidisciplinary services in a vast array of industry sectors, with a focus on technical excellence and client service. Our New Orleans team will be supported by resources located throughout the Gulf Coast and as needed, experts nationwide. WSP is committed to performing our services in a socially, ethically, and environmentally responsible manner.

We offer expertise in every phase of project delivery, from concept to completion. Our services include strategic consulting, program management, planning, engineering design, construction management, and operations & maintenance. We help our clients find the right solutions to their challenges through innovative planning and design, deep knowledge of the federal and local regulatory environments, and strong management of project delivery.

Minimum Qualifications

1. **One principal who is a professional engineer who shall be registered as such in Louisiana.**

Senior Vice President, Ian Chaney, PE is WSP's National Geotechnical and Tunneling Leader. He maintains his Louisiana PE (0042288) and will serve as WSP's Principal in Charge. He has 20 years of experience and has worked on numerous megaprojects across the US and abroad.

2. **Professional in charge of the project who is a professional engineer who shall be registered as such in Louisiana with a minimum of five (5) years experience.**

Rebecca Howell, PE will serve as Professional in Charge (LA PE 42559). She has 12 years of experience in design and management on a broad range of civil engineering projects throughout Louisiana. Rebecca serves as the Project Manager and Project Engineer on the 2023-035D-WRB Kenner Waterline Project (21st Street to 14th Street), which is anticipated to start design late Q3 of 2024.

3. **Employee who is a licensed, registered architect or professional engineer in the State of Louisiana in the applicable discipline involved**

Jerald Ramsden, PhD, PE (LA 30927) has over 30 years of experience in design and management on a broad range of civil engineering projects throughout the Gulf Coast. He assists public and private clients in planning and engineering for a wide range of coastal projects.

Evaluation Criteria

1. **Professional training and experience in relation to the type of work required for this contract.**

Understanding the dynamics of waterways, natural shorelines and the associated hydraulics and flow characteristics is critical to protection—and sustainable development—of our valuable water resources. WSP's scientists, coastal engineers, and maritime specialists develop resilient and efficient strategies to minimize erosion, including evaluation of coastal processes, planning, design, construction management and monitoring nationwide. WSP is an industry leader in developing infrastructure solutions for the way we will live in the 21st century.

WSP has delivered a range of coastal engineering projects that include dune restoration, beach nourishment, living shorelines, and erosion protection, and coastal and marine structures like wharves, jetties, piers, breakwaters, berms, and seawalls. We use numerical modeling, coastal and hydrodynamic modeling, and flood modeling to analyze the coastal protection benefits of numerous projects on coastal stabilization, including barrier island restoration, marsh restoration and living shorelines.

The proposed staff have the technical training and experience to perform the tasks required for the work outlined in this contract. The resumes provided and the table on Page 3 outline their professional capabilities.

2. **Size of firm considering the number of professional and support personnel required to perform the type of engineering tasks.**

Nationally, our staff of 10,000+ provide engineering and multidisciplinary services in a vast array of industry sectors, with a focus on technical excellence and client service. In Louisiana, we have a staff of 38.

We have identified the best personnel to complete all tasks that might be assigned under this contract. Should the need arise, we can tap into our deep bench of resources.

3. **Capacity for timely completion of newly assigned work, considering the factors of type of routine engineering task, current unfinished workload, and person or firm's available professional and support personnel.**

WSP has the capacity to complete all tasks that might be assigned under this contract. The individuals identified, resumes provided, have the availability to start

work immediately. WSP prides itself in providing high quality services on time and within our clients' budgets.

Even if there is an aggressive schedule, we can provide resources quickly to meet demands. With more than 2500 professionals located in the firm's Southeast region, we can staff projects and contracts large and small, simple, and complex, at a moment's notice.

4. Past Performance by person or firm on projects of or similar comparable size, scope, and scale.

WSP has recently completed the design on the Jefferson Parish Bonnabel Blvd. Improvements project. WSP anticipates starting work in Q3 of 2024 on Project 2023-035D-WRB Kenner Waterline Project (21st Street to 14th Street) (Resolution #143101), which will be lead and managed by Rebecca Howell.

Additionally, all proposed team members have experience working on projects within Jefferson Parish or in neighboring Parishes. In addition, our Gulf States Area Manager, Max Nassar, will serve as Officer in Charge. Max will ensure that Jefferson Parish receives the highest quality of service and deliverables.

Max is a native of Jefferson Parish and life-long resident of Louisiana and will devote his considerable efforts to understanding the challenges faced by the Parish and will make sure that the very best individuals are assigned to exceed your expectations of our firm.

WSP has supported numerous clients throughout the Southeast with coastal engineering services as demonstrated in the project descriptions and matrix on page 4. Proposed staff have relevant experience on projects of comparable size, scope, and scale.

5. Location of the principal office where work will be performed.

Work will be managed from our New Orleans office located on 1100 Poydras Street in New Orleans. The team will be supported by resources located throughout the Gulf Coast and as needed, experts nationwide.

6. Adversarial legal proceedings between the Parish and the person or firm performing professional services.

WSP has NO adversarial legal proceedings with the Parish.

7. Prior successful completion of projects of the type and nature of the engineering services, as denied, for which firm has provided verifiable references.

WSP has a portfolio of experience that spans from planning, design, and construction management on a wide range of coastal restoration and protection projects Specifically, WSP has experience in coastal planning, marsh and ridge restoration, shoreline stabilization and protection, beneficial use of dredge material, living shoreline design, hydrologic and hydraulic modeling, design analysis and reports, biological and environmental assessments of wetlands, technical evaluations, field investigations, permitting, coastal grant writing and cost estimating. Jefferson Parish will benefit from the lessons learned and innovative solutions we bring from similar projects. The projects included in the questionnaire all have verifiable references.

	Years of Experience	Coastal Planning, Design Analysis & Reports	Marsh and Ridge Restoration	Shoreline Stabilization & Protection	Beneficial Use of Dredged Material	Living Shoreline Design	Hydrologic & Hydraulic Modeling, Design	Biological & Environmental Assessments of Wetlands	Technical Evaluations, Cost Estimates & Permitting	Field Investigations	Permitting	Coastal Grant Writing	Outreach, Education & Marketing Material Development
Max Nassar Officer in Charge	40			◆	◆			◆		◆			◆
Rebecca Davezac Howell, PE Professional in Charge, Project Manager & Water Resources Engineer	12						◆		◆	◆			◆
Ian Chaney, PE Geotechnical Engineer, Principal in Charge	21	◆		◆	◆	◆			◆				
Jerald Ramsden, PE Coastal Engineer	34	◆	◆	◆	◆	◆	◆		◆	◆	◆		◆
Stephen Blair, PE Civil Engineer	32	◆	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆
Nabil Bawany Coastal Resilience Specialist/Grants	11	◆										◆	◆
Nigel Temple, PhD Coastal Restoration Ecologist	11	◆	◆	◆		◆		◆	◆	◆		◆	◆
Will Mather Environmental Specialist	5	◆	◆	◆		◆			◆	◆	◆	◆	◆
Shannon McMorrow Coastal Ecologist	19	◆		◆	◆			◆	◆	◆			
Jennifer Brunton, PE, CFM Environmental Engineer	24	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Ahintha Kandamby, PhD, PE, CFM Coastal Modeling	13	◆	◆	◆		◆	◆		◆				
Justin Lennon, PE Water Resource Engineer	21	◆	◆	◆		◆	◆		◆	◆	◆		◆
Ashwini Kashelikar, PE, CFM H&H Modeling	15						◆		◆				◆
Eric Slaugh, PE Coastal Engineer	9	◆	◆	◆		◆	◆		◆	◆			
Chamil Perera, PhD, EIT Coastal Engineer	4.5	◆	◆	◆		◆	◆	◆					
Mike Marano, PE Dredging Engineer	32	◆		◆	◆					◆			
Charlie Wildman, PE Geotechnical Engineer	13	◆		◆					◆				◆
Nathan Lipson Grants/Outreach	7											◆	◆

	Coastal Planning, Design Analysis & Reports	Marsh and Ridge Restoration	Shoreline Stabilization & Protection	Beneficial Use of Dredged Material	Living Shoreline Design	Hydrologic & Hydraulic Modeling, Design	Biological & Environmental Assessments of Wetlands	Technical Evaluations, Cost Estimates & Permitting	Field Investigations	Permitting	Coastal Grant Writing	Outreach, Education & Marketing Material Development
MidBarataria Sediment Diversion Louisiana CPRA Plaquemines Parish, LA	◆	◆	◆			◆	◆	◆	◆	◆		
Louisiana Watershed Initiative – Region 3 Modeling Contract Boeuf River, Bayou Macon, Tensas River and Bayou Cocodrie Watersheds, LA						◆		◆	◆			◆
Shoreline Protection at Jean Lafitte National Historical Park and Preserve National Park Service (NPS), Jean Lafitte National Historic Park and Preserve Jean Lafitte, LA	◆	◆	◆		◆	◆	◆	◆		◆		◆
Canal Reclamation at Barataria Preserve Environmental Assessment National Park Service (NPS), Jean Lafitte National Historic Park and Preserve Jean Lafitte, LA	◆	◆	◆	◆	◆		◆			◆		◆
Franklin 98 Living Shoreline Apalachee Regional Planning Council (ARPC) Apalachicola Bay, FL	◆	◆	◆		◆	◆	◆	◆		◆	◆	◆
Higbee Beach Wetland Restoration New Jersey Department of Environmental Protection (NJDEP) Cape May, NJ	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆		◆
Route 72 Over Manhawkin Bay Tidal Wetland Mitigation New Jersey Department of Transportation (NJDOT) Manahawkin, NJ	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆		
Shell Point Habitat Restoration and Enhancement Florida Department of Environmental Protection Walkulla County, FL	◆	◆	◆		◆		◆	◆	◆			
Port Everglades Southport Turning Notch Expansion and Wetland Enhancement Broward County Fort Lauderdale, FL	◆	◆	◆	◆		◆	◆	◆	◆	◆		
Lincoln Park Tidal Marsh Restoration New Jersey Environmental Protection (NJDEP) Hudson County, NJ	◆	◆		◆	◆		◆	◆	◆	◆	◆	