City of Fort Lauderdale

Vulnerability Assessment for the City of Fort Lauderdale

Proposal

Solicitation Event 69
Date: April 20, 2023

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Sunrise, FL 33323
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wsp.com

April 20, 2023

Laurie Platkin, Procurement Specialist
City of Fort Lauderdale
Procurement Services Division
100 N. Andrews Avenue, Suite 619
Fort Lauderdale, Florida 33301

Re: Vulnerability Assessment for the City of Fort Lauderdale

Dear Members of the Selection Committee:

The City of Fort Lauderdale (the City) is well-known worldwide. It's a place to visit, live, own a business and thrive. In the City of Fort Lauderdale, everything is within reach. Its beach and boardwalk make it one of the best-known resort towns in the world and its welcoming atmosphere invites visitors to stay and dine. Given its unique characteristics, it will be important for the City to take effective actions against today's risks. To plan and invest effectively for the City's future, one must consider how future conditions are likely to influence investment decisions and where people choose to live and work. The outcome of the vulnerability assessment and adaptation plan will:

- **Define future conditions** to reduce uncertainties and **provide baseline data** to inform planning and capital decisions.
- **Provide critical information with a sound technical basis** to inform stakeholders and support city action.
- **Serve as foundational knowledge in making the case for funding** through state and federal sources in an extraordinary moment in time for resilience funding.
- **Make recommendations that address chronic concerns** expected to worsen, like sunny day flooding during high-tides and the acute concerns posed by major storm events.
- **Bring the City into compliance** with FS 380.093 and **enable the City to access** Resilient Florida Implementation funding.

WSP USA Inc. (WSP) is ready to support the City on this important effort and has assembled a team that can provide the full scope of services required to deliver a project like this successfully. WSP has partnered with Brizaga and the Corradino Group to help guide future actions in the City through effective land use, resilience, and flood plain management polices. WSP has assembled a team across these firms composed of the atmospheric scientists, coastal, drainage, water/wastewater, mechanical/electrical and civil engineers, architects risk analysts, land use specialists, floodplain managers, equity specialists, and planners that are required to complete this work. WSP has also engaged experts in funding/finance, including important key former agency representatives from FDEP and FEMA, as well as experts in HUD funding and innovative finance options available to communities like the City of Fort Lauderdale. We can and will support City efforts to successfully obtain funding for implementation and strengthening the City against future climate hazards or stressors.

> 20
Areawide Vulnerability Assessments in Florida

3
Former City of Fort Lauderdale staff on our Project Team

$33 B
Helped Entities Secure Federal Grants and Loans for 140 projects since 2009

National Research, Trainings for US DOT, FDOT on Planning, Designing Resilient Infrastructure

The team will be led by Michael Flood, WSP's Project Manager, and supported by Catherine Prince, WSP's Deputy Project Manager. Project Manager, Michael Flood, leads our national resilience team and has 33 years of experience managing climate risk, vulnerability assessments and adaptation plans, including many in Florida. Deputy Project Manager Catherine Prince worked at the City's Transportation and Mobility Department before joining WSP. She is a principal and regional lead for the Climate, Resilience and Sustainability national business line at WSP. Catherine is a local Florida resident, and she understands community concerns and effective communication methods, and is committed to effective planning. The key delivery team includes two additional former City of Fort Lauderdale team members - Christine Fanchi, Transportation and Mobility; Jose Custudio, Stormwater, Public Works.

Resilience assessments are more comprehensive than even a few years ago, and our proposed project team is uniquely positioned to successfully complete this project:

- **The team applies a risk-based assessment (cause, effect, consequences)** informed by technical analysis that is foundational to effective communication to stakeholders.
- Resilience assessments have extended beyond only asset management and/or engineering concerns, requiring greater **understanding of community/system risk to then understand who is being affected.** The team was assembled with this full scope in mind.
- **The team members have led community-focused conversations on resilience** and climate throughout the region, state and nation. The team knows how to use information to better inform stakeholders and guide effective actions.
- **Team members have experience obtaining Resilient Infrastructure funding** and creating regional partnerships that will be critical to the effectiveness of the resilience strategies.
- **The team has experience linking pre- and post-disaster programs with resilient infrastructure investments.** We identify ways to integrate actions to ensure a more rapid and effective recovery, and evaluating the expenditure of funds considering future conditions to build back stronger.

I trust that you will find the basis for selecting WSP for this project in the following pages, and I am available if you have any questions. We look forward to be given the opportunity to support you on this critical effort. If you would like to discuss this proposal or other concerns you can reach me at 202-748-6131 or Michael.Flood@wsp.com.

1400
Florida Based Employees

200
Florida Based Professional Engineers

#1
ENR's Top 225 International Design Firms

#7
ENR's Top 125 Environmental Firms

Respectfully,

Michael Flood, AICP
Project Manager
National Resilience Lead, WSP

Catherine Price, PMP, LEED AP, STP +
Deputy Project Manager
Local Resilience Lead, WSP

SECTION 1
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“This team went above and beyond to get this project completed on time. There were some challenges along the way, but they always brought innovative problem solving and action-oriented solutions to the table. We couldn't have picked a better team for this job!”

Jenny Smith
Assistant Director
California Department of Natural Resources

SECTION 2
Executive Summary

Executive Summary

WSP USA Inc. (WSP) is the US operating company of WSP, one of the world's leading engineering and professional services firms. A corporation licensed and registered in the State of Florida, we are engineers, planners, technical experts, strategic advisors and construction management professionals dedicated to serving local communities.

As the City of Fort Lauderdale makes great strides in ensuring a safe and thriving future for its communities, it is critical that the City selects a consultant who is not only familiar with its mission and aims, but who is also rooted in compatible values and visions for the future. WSP, a national leading engineering and professional services firm, operates on both a large, multi-disciplinary scale and at a local, client specific scale.

Office Locations

WSP has maintained a presence in Florida that spans more than three decades. With more than 1,400 people in offices located in every region of the state, including West Palm Beach, Miami, Orlando, Lakeland, Tampa, Gainesville, Jacksonville, Tallahassee, and Naples, WSP has the local resources and ability to support the City. This project will be managed from our Sunrise office, drawing on the resources both locally and nationwide.

Background and History

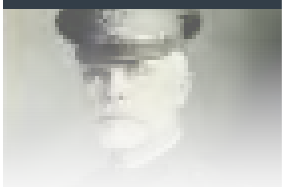
With a 138-year history, WSP is one of the oldest continuously operating consulting firms in the United States that has a strong commitment to technical excellence, a diverse workforce, and dedicated service to our clients. Our infrastructure portfolio ranges from the mega projects that define an entire region to smaller, more local projects that keep communities humming.

In Florida, we have provided solutions ranging from planning to design, design evaluations, project management and construction of infrastructure systems for Florida cities, counties and utilities for more than 60 years. Some of our clients include Pinellas County, Monroe County, Miami-Dade County, Florida Department of Transportation, City of Miami Beach, South Florida Regional Transportation Authority, and South Florida Water Management District.

Key Individuals

WSP has assembled an experienced team who has worked together previously and has been serving South Florida clients for decades. Our local, integrated team offers proven leadership from individuals that you know and the capacity required to deliver the City's infrastructure needs for the regulatory process, design, project management and construction administration.

1885

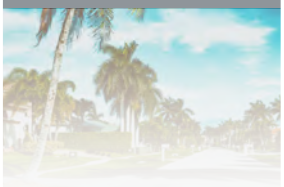


In the U.S., WSP's origins date back to 1885, when William Barclay founded the company that would become **Parsons Brinckerhoff** *in NYC.*

1904

The firm has led the rail and transit sector since its first project: the design of the New York City subway system, which opened in 1904.

1960s



The firm began operating in Florida in the 1960s.

2015

Parsons Brinkerhoff was acquired by WSP, becoming WSP's transport and resilient infrastructure group in the U.S.

2022

WSP acquires the **Environment & Infrastructure (E&I) business of Wood plc,** *further expanding our premier transportation and resilient infrastructure capabilities in Florida.*

Firm Stats

1400
Florida Based Employees

200
Florida Based Professional Engineers

$33 B
Helped Entities Secure Federal Grants and Loans for 140 projects since 2009

#1
ENR's Top 225 International Design Firms

#7
ENR's Top 125 Environmental Firms

Corporate Officers

US President and CEO
Lou Cornell

Regional President, Southeast
Jerry Jannetti

National Business Line President, Transportation
Sofia Berger

Florida District Leader
Alice Bravo, PE

Key individuals who will be directly involved in this contract include Project Manager, Michael Flood (Baltimore); and Deputy Project Manager, Catherine Prince, PMP, LEED AP, STP, (Broward). As an experienced project management team, they will keep the team on schedule and the project within budget.

Michael Flood leads our national resilience team and has 33 years of experience managing climate risk and vulnerability assessments and adaptation plans, including many in Florida. Catherine Prince is based out of WSP's Sunrise office and will help lead this team by integrating transportation, climate resiliency, and urban design. She is also experienced as an implementor of several safe and complete street projects in the City of Fort Lauderdale and around Florida.

Other key individuals include Christopher Dorney, PhD (Lancaster, PA), Maria Watt, PE, PMP (Tampa), Alec Bogdanoff, PhD (Fort Lauderdale), and Edward Ng (Fort Lauderdale).

Summary of Key Elements

WSP understands the importance of assessing critical infrastructure's vulnerability, particularly in southern Florida. We have performed numerous vulnerability assessments and adaptation plans in south, southeast and southwest Florida. We have fine-tuned our approach over the years leading the evolution of the state-of-the practice in performing quantitative assessments that enhance the funding opportunities for identified prioritized projects. The approach to the following tasks contained in the RFP incorporate valuable lessons from not only our Florida-based projects, but also from our extensive national resilience practice.

- Task 1: Acquire Background Data
- Task 2: Develop a Critical Asset Inventory
- Task 3: Surveying for Elevation Certificates
- Task 4: Exposure Analysis
- Task 5: Sensitivity Analysis
- Task 6: Final Vulnerability Assessment (VA) Report
- Task 7: Partial Adaptation Plan

A major objective of the Vulnerability Assessment (VA) and Adaptation Plan for the City of Ft. Lauderdale (the City) is to leverage funding from as many state and federal grant sources as possible. In particular, this project will allow the City to meet State FDEP Resilient Florida program criteria and satisfy criteria for Federal and State resilience/mitigation project funding.

The **VA will include roadway assessments and will produce elevation certificates for prioritized critical governmental facilities.** The resulting adaptation plan will include a prioritized list of adaptation investments focusing on minimizing the risks associated with future flooding. Several characteristics of the proposed technical approach merit some discussion at the outset.

- The VA must **satisfy State requirements as specified in FS 380.093** and implemented by the Florida Department of Environmental Protection (FDEP). This includes satisfying FDEP's Standardized Vulnerability Assessment process.
- The VA will provide the **basis for satisfying funding requirements for Federal and State climate resilience funding programs**. For example, the analysis will provide the analysis foundation for projects being proposed by the City for consideration as part of the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) formula program of the recent Federal transportation legislation, as well as funding from the Federal Emergency Management Agency (FEMA).
- The VA is intended to **enhance the City's ability to prepare for, and respond to, extreme weather/ flooding hazards.** This includes understanding the building codes and other regulatory standards adopted to reinforce the impacts of resilience improvements.
- The VA will demonstrate a systemic approach to examining climate resilience and **consistency with State and local mitigation hazard mitigation plans.**
- The **VA leads to both physical and nature-based strategies for enhancing resilience**, and considers as part of the strategy assessment a range of consequences to different population groups (e.g., disadvantaged populations) and sectors (e.g., emergency response and freight movement). In addition, the evaluation of such strategies should include not only the benefits and costs to the City but also to system users (passenger and freight), as well as costs to society in general.
- The VA will **inform the City's decision-making and planning processes.** The VA will identify opportunities for enhancing the resilience of the City's critical facilities. The VA will develop a methodology for scoring projects that are eligible for resilience program funding thus feeding directly into the funding allocation decision-making process for relevant programs.
- The **VA will build-on the Broward County's recently completed climate model** as part of its ongoing Countywide Vulnerability Analysis.
- Finally, the project will **build upon the City's important resilience work** already undertaken. The City of Fort Lauderdale is able to take advantage of experience with the types of assessment approaches that feed into resilience funding programs.

Value Add

The WSP Team has three former City employees with combined 13-years at the City departments: Catherine Prince and Christine Fanchi from Transportation and Mobility, and Jose Custodio from Stormwater Division, Public Works.

We have a strong understanding of 1) City departments priorities, its pain-points and required coordination, data availability and gaps, 2) Coordination with Broward County on its ongoing climate vulnerability assessment, its climate modeling methodology, and the County's infrastructure assets, 3) Potential coordination with state agencies like FDOT with assets adjacent to City assets.

Thus, enabling WSP to deliver the vulnerability assessment expeditiously, so the city is eligible to apply for the 2023 FDEP Resilient Florida Implementation Grant funding.

Value Add

The WSP Team will complete the tasks associated with the grants for $150K leaving $10K for value-added tasks. We will work with you to identify the value-add scope aligned with the City's goals.

Options that the City may consider are 1) Develop prioritization criteria for City-owned roadways and other asset types, 2) Preliminary design strategies to integrate resilience into a pilot 1-mile roadway (with storm water infrastructure), or a city-owned building facility, 3) Summary of appropriate federal grants to design and construct the identified vulnerable assets.

Thus, setting up the City to access implementation funding beyond FDEP grants to federal grants, such as IIJA, post-disaster funding from FEMA, and HUD.

SECTION 3
Experience and Qualifications

Firm Overview

As the City of Fort Lauderdale makes great strides in ensuring a safe and thriving future for its communities, it is critical that the City selects a consultant who is not only familiar with its mission and aims, but is also rooted in compatible values and visions for the future. WSP, as a national-leading engineering and professional services firm, operates on both a large, multi-disciplinary scale and a local, client-specific scale.

With more than 15,650 employees in more than 330 offices across the US, we are technical experts who design and provide strategic advice on sustainable solutions and engineering projects that will help societies grow for a lifetime to come. **In Florida, we have provided solutions ranging from planning to design, design evaluations, climate adaption strategy development, project management and construction of infrastructure systems for local cities, counties and utilities for more than 60 years.**

We offer planning, engineering design and construction management and inspection services to Florida municipalities, utilities, public agencies and private clients, as well as state-specific water policy and technical issues. Our long and varied experience across the state, and especially in South Florida where 229 of our staff live and work, gives us in-depth knowledge of the region.

Company Information

WSP is a legal entity registered in the State of Florida.

Legal Company Name	WSP USA Inc.
Website	www.wsp.com
Tax ID Number (EIN)	11-1531569
Organization Type	Corporation
State of Incorporation	New York
Date of Incorporation	October 5, 1933
Parent Company	Parsons Brinckerhoff Holdings Inc
Public or Private?	Private Company
Years of Experience	60+ in Florida

WSP Single Point of Contact

Catherine Prince, PMP, LEED AP, STP
Deputy Project Manager

1000 Sawgrass Corporate Parkway
Suite 578, Sunrise, FL 33323
+1 (954) 908-8700
catherine.prince@wsp.com

Sustainable Business Practices

Commitment to *Sustainability*

Sustainable Business Practices

In April 2021, WSP announced its intention to get ready for less by committing to achieve net zero emissions across its value chain by 2040. We set science-based GHG emissions reduction targets, approved by the Science Based Targets initiative. These commitments are aligned with the most ambitious aim of the Paris Agreement, to limit global temperature rise to 1.5˚C.

In addition, WSP has signed the Structural Engineers 2050 Commitment (SE 2050) to net zero. Two of the most commonly used structural materials — concrete and steel — represent approximately 21 percent of global carbon emissions. The objective of the SE 2050 program is to coalesce the support of the collective structural engineering industry to drive significant reductions of embodied carbon in the design and construction of structural systems.

As a signatory, WSP has committed to annually publishing an Embodied Carbon Action Plan (ECAP) and submitting data to the SE 2050 project database to increase understanding of embodied carbon and help set attainable targets for future projects.

Ability to Meet Schedule and Budget

WSP's depth and breadth of resources and our Florida coverage area offers the City stability and availability to handle any size project at any time. Contracts of this type require a highly qualified team that has the capacity to respond quickly; a strong commitment to quality, cost control and schedule maintenance; and clear team coordination and communication plans.

We are confident that this project will be an excellent fit for the WSP team in terms of experience and proficiency, as well as the availability of the personnel who are proposed. The professionals who will be utilized for this project are committed to client service and accustomed to providing the individual time and effort necessary to successfully achieve the objectives of our clients.

Our Project Manager, **Michael Flood,** and our Deputy Project Manager, **Catherine Prince**, will work with the City to ensure that our scope, schedule, and budget are acceptable and achievable. This is done through good communication practices and a variety of software applications that track planning and design phase activities. Internally, our company implements several types of scheduling, financial and data management software to control and forecast budget, resources, and deliverables.

Please see **the following page** for a comprehensive summary of the individuals who have been selected to serve as WSP's project team for the City.

Organizational Chart

Vulnerability Assessment for the City of Fort Lauderdale

CITY OF FORT LAUDERDALE

Project Manager
Michael Flood, AICP
Deputy Project Manager
Catherine Prince, PMP, LEED AP, STP +

Quality Assurance
Jeff Baker

Vulnerability and Risk Management	Mitigation and Adaption Strategies, Engineering Support	Policy and Funding Support
Lead Chris Dorney, PhD, AICP **Storm Surge/H&H Modeling** Justin Lennon, PE, ENV SP Al Souid, PhD, PE, BCEE, CFM **Benefit-Cost Analysis** Juan Carlos Lam, PhD Angie Garcia **Atmospheric Science** DJ Rasmussen, PhD **Equity Considerations** Allie Reilly	**Lead** Maria Watt, PE, PMP **Stormwater** Jose Custodio, PE **Coastal Engineering** Jerry Ramsden, PhD, PE **Water/Wastewater** Werner Reinefeld, PE, ENV SP **Structural** Todd Mitchell, PE **Transportation** Christine Fanchi, PE	**Lead** Alec Bogdanoff, PhD (Brizaga) **Policy/Ordinance** Edward Ng, MPP, MPL AICP (Corradino) **FEMA CRS** David Stroud, CFM **FDEP Grants** Becky Prado **Federal Grants** Alfonso Hernandez

Project Team Key

Former City of Fort Lauderdale Employee

Michael Flood, AICP

Project Manager

Firm Name
WSP

Years of Experience
28

Education
MS, Urban and Environmental Planning, University of Virginia

BA, Urban Planning, University of Maryland

Office Location
Baltimore, MD

Career Summary

Michael Flood has over 28 years of consulting experience and is the National Resiliency Lead for WSP. In this role, he has led most of the national projects focused on determining the risks of extreme weather and climate change and the development of potential strategies for addressing those risks. This work has included work assessing potential impacts to buildings and facilities in the northeast and southeast, communities in Florida and Massachusetts and transportation facilities across the United States, including Puerto Rico, Alaska and Minnesota. The focus of Michael's recent work has been the development of methods, tools and strategies to help agencies make effective decisions in adaptation to climate change and extreme weather risks through development of prioritization processes. This work includes developing benefit-cost assessments of resiliency projects in New York, an assessment of impacts to infrastructure statewide in California, and the conduct of training seminars on resiliency strategies and other similar efforts focused on helping agencies make effective decisions.

Professional Experience

Pinellas County, Restore Act Vulnerability Assessment, Florida: Project manager responsible for conducting vulnerability assessment and associated services to further discern local risks, identify opportunities to prepare for change and understand economic impacts of the various alternatives. The project followed risk-based methodology to quantify potential future risks from flooding; determine damage and economic costs of future events; and use information to determine cost-effective design and response strategies. Considered an important community step toward long-term viability of the region. Recommendations expected to be incorporated into policy/planning documents.

Monroe County, Infrastructure Vulnerability Analysis and Capital Plan, Florida: Project manager responsible for defining appropriate capital investment decisions regarding county infrastructure in low-lying areas already experiencing effects of sea level rise (SLR) and tidal flooding. This project focused on identifying most cost-effective design option for ongoing county-wide roadway improvement project. Provided planning services to define existing tidal/stormwater inundation areas; define future tidal inundation areas; identify level of service and design response alternatives; and establish response policies for pilot communities.

City of Oldsmar, Climate Resiliency Plan (CRP), Florida: Project manager responsible for developing climate resiliency plan to address future climate stressors, including SLR, storm surge, extreme heat, extreme precipitation and inland flooding. The plan conducted in two phases: vulnerability assessment and climate resiliency. Developed inland flooding projections and assessment of future infrastructure impacts. Developed variety of project concepts to address future conditions.

Miami-Dade County, Sea Level Rise Strategy, Florida: Technical lead responsible for risk-based vulnerability assessment evaluating future climate hazard impacts. Evaluated costs of risk and action for $125,000 project. Conducted risk-based analysis of County assets within geography, including residential properties, county-owned properties and transportation assets.

Catherine Prince, PMP, LEED AP, STP

Deputy Project Manager

Firm Name
WSP

Years of Experience
18

Education
MBA, Boston University

M. Arch, University of Miami

B. Arch, Center for Environmental Planning and Technology University

Certifications
Project Management Professional

Greenroads Sustainable Transportation Professional

Leadership in Energy and Environmental Design Accredited Professional

Office Location
Miami, FL

Career Summary

Catherine assists agencies enhance the quality of life of the current and future generations with people-centered solutions by equitably engaging with stake-holders, leveraging technology to achieve elevated climate resilience, sustainability solutions. Her project management experience extends from complete street engineering design, construction, and developing supporting policies and ordinances.

Professional Experience

Department of Transportation, South Dade Maintenance Facility, Miami-Dade County, Florida: As technical lead, Catherine is leading the future climate-resilient engineering design considerations, working with the projects' mechanical, electrical, structural, and civil leads. The recommendations will be incorporated into the 100% design and integrated into the construction RFP.

Broward Metropolitan Planning Organization (BMPO), Resilient Corridor Facility-level Climate Vulnerability Assessment, Hollywood Boulevard, Florida: Project manager leading the pilot project using BMPO's Resilient Infrastructure Project Development Framework. The project objective is to develop a cost-feasible preferred conceptual design with implementation plan cost estimates.

Tribal Reservation, Rosebud Sioux Climate Vulnerability Analysis, South Dakota: Serving as the project manager leading the area's climate assessment, Catherine led the stakeholder engagement for the project. She oversees the data modeling tasks to estimate future climate conditions. Identify critical transportation facilities using a risk-based approach to identify failure thresholds, impact to the tribe's mobility.

Washington Metropolitan Area Transit Authority (METRO), Transit Agency Resiliency Framework, Washington, D.C.: Assisting with the development of a Resiliency Program as technical advisor to facilitate implementation of Resiliency within METRO's future operations, maintenance, and capital programs

Palm Beach County, Okeechobee Corridor Transit Feasibility Analysis, Florida: Project manager that led the effort to identify the most appropriate and feasible transit along the Okeechobee Corridor alternatives analysis.

NW 27th Avenue Project Development & Environment (PD&E) Study, Miami, Florida: Deputy project manager responsible for the Preliminary Engineering Report (PER), and overseeing the Environmental Assessment (EA).

Flagler Street Project Development & Environment (PD&E) Study, Miami, Florida: Deputy project manager responsible for coordinating the alternatives analysis and identifying potential challenges and solutions.

Jeff Baker

Quality Assurance

Firm Name
WSP

Years of Experience
15

Education
BS, Environmental Systems Engineering, Pennsylvania State University

Office Location
Tampa, FL

Career Summary

Jeff is an environmental professional with 15 years of experience in the design and construction of civil and environmental systems for the remediation and restoration of water, land and air. His expertise is in the evaluation and implementation of soil, groundwater, wastewater and air emissions remediation technologies that provide value and protect the business assets of clients by managing active and potential environmental liabilities. He is responsible for the quality of engineering and design services for the firm throughout the United States and abroad.

Jeff has extensive field experience at sites in compulsory and voluntary federal and state cleanup programs. He has implemented numerous remedial technologies, including insitu/ex-situ chemical oxidation, in-situ chemical reduction, in-situ bioremediation, soil vapor extraction, sub-slab vapor intrusion mitigation, groundwater pump/treat and soil excavation and off-site disposal.

Professional Experience

Coronet Industries, Remedial Action Plan, Plant City, Florida: Quality assurance manager and task manager responsible for on-site remedial activities on closure of 200-acre former process ponds. Managed field staff and coordinated contractors, prepared Florida Department of Environmental Protection (FDEP) progress reports, and performed sediment surveys, including collecting deep pond sediment samples. He also resolved relevant construction issues, and developed innovative approaches to relieve subsurface gases through capped process ponds. Assisted with quality assurance of cleanup work on facility recently transferred from the U.S. Environmental Protection Agency (USEPA) Superfund program to Florida Risk-Based Corrective Action program.

Confidential Client, Groundwater Pump and Treatment System, Spartanburg, South Carolina: Project consultant responsible for bidding/contractor procurement, construction management, inspection of installed remediation equipment, coordination of field activities with office staff, coordination of all operations and maintenance activities, completion of discharge monitoring reports for National Pollutant Discharge Elimination System (NPDES) requirements and reporting. This contract included groundwater pump and treatment system for remediation of chlorinated volatile organic compounds (CVOCs) in deep aquifer approximately 200 feet below ground surface.

Confidential Client, Former Manufacturing Facility, Ithaca, New York: Deputy project manager responsible for environmental liabilities and remediation of chlorinated solvents used to clean and degrease metal parts during equipment manufacturing process. Conducting investigations to reveal that solvents had migrated in subsurface along sanitary sewer network traversing adjacent residential neighborhood north and west of facility. Tasks included active remediation at former facility includes groundwater pump/treatment, soil vapor extraction (SVE), free product surveillance/recovery, in-situ chemical reduction remediation and residential vapor mitigation.

Chris Dorney, PhD, AICP

Vulnerability and Risk Assessment Lead

Firm Name
WSP

Years of Experience
18.5

Education
PhD, Urban and Regional Planning and Development, University of Maryland

MS, Land Use Planning, University of Maryland

BS, Geography, Pennsylvania State University

Professional Registrations
AICP

Office Location
Lancaster, PA

Career Summary

Chris Dorney is a vice president in WSP's Climate, Resilience, and Sustainability practice and has been engaged in extreme weather and climate change adaptation planning for over a decade. Dr. Dorney has been at the forefront of developing and implementing procedures for incorporating climate change adaptation into the project development process and has helped incorporate the use of climate data in project benefit-cost analyses. The projects listed below demonstrate this expertise, including some within the region.

Professional Experience

U.S. Federal Highway Administration National Highway Institute, Addressing Resilience in Highway Project Development and Preliminary Design, Nationwide: Lead the development of training sessions on incorporating climate change into project design.

Pinellas County, RESTORE Act Vulnerability Assessment, Florida: Lead methodology development for five facility-level adaptation assessments, including two roadways in low-lying coastal settings.

Monroe County, Sea Level Rise Exposure Pilot Study, Florida: Helped lead the approach to the tidal flooding exposure analysis for two county-owned roadways.

U.S. Federal Highway Administration, Transportation Engineering Approaches to Climate Resiliency, Nationwide: Led the development of Adaptation Decision-making Assessment Process (ADAP) and oversaw its application to five roadway case studies around the country.

City of Oldsmar, Climate Resilience Plan (CRP), Florida: Technical advisor responsible for developing $200,000 CRP regarding city-owned and managed assets. Conducted risk-based vulnerability assessment for using future probabilistic storm surge, SLR and precipitation data. Work included development of probabilistic flood model to represent future storm surge risks at end of the century. Future precipitation values w generated by climate team and included inputs with SLR impacted tailwater conditions into stormwater model to generate scenarios for localized flooding from events for range of return periods. Combined technical analysis utilizes to generate probabilistic stressor values for use in project risk assessments and identify impacts to 2100.

Miami-Dade County, SLR Planning Project, Florida: Technical advisor lead responsible for developing technical methodology to assess real estate and roadway infrastructure costs. $125,000 project assessed costs of inaction to the County from SLR and related hazards (storm surge and groundwater table rise). Developed county-wide adaptation strategies and evaluated for costs reductions.

Justin Lennon, PE, ENV SP

Storm Surge/H&H Modeling

Firm Name

WSP

Years of Experience

28

Education

MS, Civil Engineering, Pennsylvania State University

BS, Civil Engineering, Pennsylvania State University

Professional Registrations

Professional Engineer: FL, DC, DE, LA, MD, TX, VA

Institute for Sustainable Infrastructure, Envision Sustainability Professional (ENV SP)

Office Location

Pittsburgh, PA

Career Summary

Justin is a water resources engineer who specializes in river engineering, bridge scour analysis, sediment transport, watershed management and stream stabilization design. He is an expert on several hydraulic and hydrologic modeling programs and techniques. He has performed numerous hydrologic, hydraulic and scour evaluations in the support of bridge design projects or evaluation of existing bridge structures. Justin has conducted evaluations on over 130 bridges in 14 states, including one dimensional and two dimensional hydraulic studies, steady flow/unsteady flow hydraulic modeling, riverine/tidal hydrologic evaluations, floodplain studies, floodway studies and sediment transport evaluations. He has employed state methodologies and used new research techniques in this evolving field. He takes part in developing pilot projects that investigate the impact of climate change on highway infrastructure.

Professional Experience

Pinellas County, Infrastructure Resiliency Pilots, Florida: Lead water resources engineer responsible for supporting a series of climate resiliency pilots studying the impacts of changing climate 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. County is heavily populated but low-lying and at risk due to changing sea levels and storm surge conditions. 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 residential neighborhood and storm surge impacts on hurricane evacuation route.

Florida Department of Transportation (FDOT) District Three, Pensacola Bay Bridge Replacement DB, Pensacola, Florida: Coastal project lead responsible for the DB replacement of Pensacola Bay Bridge. Responsible for leading technical team in development of the studies. $30.3 million project includes dynamic ADCIRC+SWAN modeling of coastal design storm conditions. Performing bridge foundation scour calculations following FDOT scour methods for complex and multiple piers. Performing wave impact calculations following AASHTO guidance for loadings on piers. Design includes development of riprap and ACBM revetment designs for protection of approach roadway embankments. Embankments requires protection from both storm surge and wave impact erosive forces.

FDOT District Two, State Road (SR) 51 Over Browns Creek, Jacksonville, Florida: Technical director and engineer of record (EOR) responsible for HEC-RAS 2D model of coastal storm surge flooding conditions for the scour evaluation of the SR 51 bridge crossing. $200,000 complex modeling effort included 2D simulation of the St. Johns River inlet to the Atlantic Ocean, intracoastal waterway (ICW), Blount Island, Shell Island and over 36,000 acres of coastal marshland. Modeling effort included three open boundaries to the Atlantic and three riverine inflow boundary conditions to simulate this complex system. Led development of the final bridge scour analysis and technical report based on the findings of the modeling effort.

Al Souid, PhD, PE, BCEE, CFM

Storm Surge/H&H Modeling

Firm Name

WSP

Years of Experience

26

Education

PHD, Environmental and Resource Engineering, SUNY-ESF

MS, Environmental and Resource Engineering, State University of New York College of Environmental Science and Forestry (SUNY-ESF)

BS, Civil Engineering, Aleppo University

Professional Registrations

Professional Engineer: NC, GA

American Academy of Environmental Engineers and Scientists (AAEES), Board Certified Environmental Engineer (BCEE): US

Association of State Floodplain Managers (ASFPM), Certified Floodplain Manager (CFM): NC

Office Location

Durham, NC

Career Summary

Al is a certified professional engineer with experience has been focused on surface water modeling including coastal and riverine flooding, combined probability analysis, watershed studies, Federal Emergency Management Agency (FEMA) risk maps products, dam breach analyses and software tool developments and automations. His latest interest is risk probability and their applications on flood control designs, measures and preventions. Al supervises and manages federal, state, municipal and private projects. He provides technical direction for initial planning, detailed process designs, training, productions, quality assurance/control, client support and technical documents preparations. He has reviewed and conducted tremendous technical tasks of flood studies.

Professional Experience

South Florida Water Management District (SFWMD), Loxahatchee River Bridge Crossing Project, Palm Beach County, Florida: Technical modeler responsible for performing detailed flood hazard assessments of the riverine/coastal flood zones at the railroad bridge crossing Loxahatchee River due to replacing the substructure with new pilings and piers. $25,000 project part of comprehensive study to obtain environmental resources permit (ERP). Conducted analyses of tropical storm surge, initial conditions and wave overland heights based on most recent data. Performed coastal flood simulations to compare the pre- and post-project flood elevations.

Plant Barry Nuclear Plant – Ash Pond Project, Mobile County, Alabama: Technical modeler responsible for performing $49,000 coastal modeling on the most recent surge data to predict the coastal elevations that could impact the ash pond. Hypothetical risk scenario added to test worse case happening scheme of the coastal elevations.

North Carolina Floodplain Mapping Program (NCFMP), Bertie, Camden, Chowan, Currituck, Dare, Pasquotank, Perquimans, Tyrrell and Washington Counties, North Carolina: Technical lead responsible for developing and managing technical works for the preparation of $2.7 million flood insurance studies (FIS) and digital flood insurance rate maps (DFIRMs) for the several coastal counties in North Carolina as part of the State's Cooperating Technical Partnership (CTP) with FEMA. Developed and engineered designs of an automated coastal modeling tool. Built tool in Esri ArcGIS. Designed tool to populate the survey and Light Detection and Ranging (LiDAR) data into 3D transect line (station vs. elevation) then uses different layers of data (land use and building) and FEMA software (WHAFIS4.0 and RUNUP2.0) to simulate coastal flood events.

Alabama Floodplain Mapping Project, Baldwin and Mobile Counties, Alabama: Responsible for training, assisting and conducting flood models. Reviewed technical modeling and mapping of $1.5 million new coastal maps.

Juan Carlos Lam, PhD

Benefit-Cost Analysis

Firm Name

WSP

Years of Experience

20

Education

DrSc, Civil Engineering, ETH Zurich

MS, Civil Infrastructure Engineering, Virginia Polytechnic Institute and State University

BS, Systems Engineering, University of Virginia

Office Location

Washington, D.C.

Career Summary

Juan Carlos is a senior resilience lead at WSP. He brings 20 years of management and technical experience in urban resilience, disaster risk reduction, infrastructure asset management and sustainable development acquired through 20+ projects in Africa, the Americas, Asia and Europe. Experienced in designing and implementing solutions for various infrastructure sectors including road transport, rail transport, drinking water, wastewater, irrigation, housing, education, health, government facilities and civil protection. Actively contributes to the advancement of the assessment and management of disaster resilience and risk through the development of state-of-the-art methods and technology, their dissemination and the training of professionals in these methods and technology. Juan Carlos serves as a technical reviewer for journals published by the American Society of Civil Engineers (ASCE) and conferences focused on disaster resilience and risk and infrastructure systems. Has collaborated in a transdisciplinary capacity with diverse stakeholders including government agencies, multilateral and bilateral organizations, academic and research institutions, for-profit and non-profit organizations and civil society organizations. Prior to WSP, Juan Carlos worked as a research associate at the Institute of Construction and Infrastructure Management at ETH Zurich in Switzerland and as a specialist in disaster risk management in the Social, Urban, Rural and Resilience Global Practice at the World Bank, helping to lead the Probabilistic Risk Assessment (CAPRA) Program and to lay the foundation of the Global Program for Safer Schools (GPSS).

Professional Experience

Pinellas County, Sea Level Rise (SLR) and Storm Surge Vulnerability Assessment, Florida: Technical lead responsible for life-cycle eBCA to support the evaluation of possible interventions at five facilities, which led to the recommendation of specific risk-reducing interventions based on their cost-effectiveness. Conducted detailed and technically-based assessment of anticipated conditions, timing of expected change and potential impacts of SLR and storm surge to County infrastructure. Study assessed future exposure from now through the end of century for transportation and water infrastructure. Assessment results identified interventions needed for long-term viability of County's economy, social fabric and community quality of life.

South Bulkhead Storm Damage Assessment, Miami-Dade County, Florida: Technical lead who set up the cost-benefit framework to evaluate the measure using a probabilistic approach to account for uncertain events and provided technical advice throughout the framework implementation process for this project. Information was used to inform a FEMA grant application. Evaluated the benefits and costs of a hazard mitigation measure to prevent future infrastructure damages and losses of property handled by PortMiami, operational revenue and employment caused by probable storm events and changing climate.

City of Virginia Beach, FEMA Building Resilient Infrastructures and Communities (BRIC) Grant Application Support for the Eastern Shore Drive Drainage Improvements – Phase I, Section I, Virginia: Technical lead responsible for leading the climate risk assessment, including evaluation of potential effects of sea level rise (SLR) and increased precipitation in the area over the life of an anticipated drainage project.

Angie Garcia

Benefit-Cost Analysis

Firm Name
WSP

Years of Experience
6

Education
MS, Civil Engineering, Universidad de los Andes, Bogotá, Colombia

BS, Civil Engineering, Universidad de los Andes, Bogotá, Colombia

Office Location
Houston, TX

Career Summary

Angie has six years of international experience working with governments and infrastructure stakeholders in projects related to climate and disaster risk management and the design of large-scale disaster risk mitigation and infrastructure investment programs. This experience has been acquired through projects in Latin America, Central Asia, Africa and the U.S. Angie supports the identification of climate adaptation measures and the development of impact assessment models of climate-related hazards on infrastructure systems to strengthen infrastructure strategies, policies and infrastructure investment decisions. Before joining WSP, Angie worked as a consultant for the Global Program for Safer Schools of The World Bank and as a research assistant.

Professional Experience

New York City Major's Office of Climate and Environmental Justice (MOCEJ), New York City Strategic Climate Plan – Resilience Infrastructure Permit, New York: Technical lead responsible for project initiative that consists of various initiatives to address climate resiliency. Supports coordination and works with technical teams to assess risk exposure and loss estimation of infrastructure assets to storm surge and tidal flooding in current and future conditions.

New York State Governor's Office of Storm Recovery (NYSGOSR), BCA Update Rebuild by Design Living with The Bay Project, New York: Technical support responsible for reviewing documentation, updating BCA estimates with latest project information and supporting development of the technical report and outputs for the project. Supporting NYSGOSR to update the benefit-cost analysis (BCA) prepared for the Rebuild by Design (RBD) Living with the Bay (LWTB) project area, following the U.S. Department of Housing and Urban Development (HUD) Benefit-Cost Analysis (BCA) Guidance.

Suffolk County, Enhancing Coastal Resiliency Through Integrated Salt Marsh Management BCA for Hazard Mitigation Grant Program (HMGP), New York: Supported County project aimed to quantify reduction in direct and indirect economic losses in surrounding infrastructure from marsh restoration. Supported development of exposure model; revision of technical documentation to understand the impact of waves and inundation in exposed infrastructure; process risk results and prepare inputs for FEMA BCA Toolkit Version 6.0. Prepared technical report for the BCA narrative.

City of New Rochelle, Watershed Drainage Analysis: Stephenson Brook Drainage Basin, New York: Benefit-cost analysis lead responsible for estimating the benefits of the proposed solutions in terms of reduced average annual economic losses from flooding in the project area and inform prioritization of interventions. Supporting $390,500 effort to identify cost-efficient flood mitigation solutions.

DJ Rasmussen, PhD

Atmospheric Science

Firm Name

WSP

Years of Experience

14

Education

PhD, Climate Science and Policy, Princeton University

MS, Civil and Environmental Engineering, University of California Davis

BS, Atmospheric and Oceanic Science, University of Wisconsin-Madison

Office Location

San Diego, CA

Career Summary

DJ has 14 years of consulting and academic research experience and is a Climate Science Lead Consultant for WSP. Central aspects of DJ's duties include applying a working knowledge of meteorology, climate science, numerical modeling, statistics, engineering and the latest research to help strategize resilience solutions for clients, partners and communities. Examples include producing climate-adjusted engineering design criteria for data centers, assessing critical natural hazard vulnerabilities in a metropolitan rail and road transit system, undertaking benefit cost analyses for appraising stormwater drainage designs, assessing physical risks for Task Force on Climate-Related Financial Disclosures (TCFD) reporting, generating physical climate projections that are tailored for client-specific use cases (climate-adjusted ASHRAE tables, rain storm event generation), strategizing optimal approaches for responding to new resilience policies and design criteria and producing frameworks for facility-level risk assessments. DJ regularly publishes in the academic literature.

Professional Experience

Data Center Coastal Flood Hazard Assessment: Used historical mean sea level, astronomical tide data, wave modeling and high-resolution Light Detection and Ranging (LiDAR) data to determine a 'worst case' coastal flood event for a data center. Sea level rise (SLR) projections used to model the 'worst case' event under future conditions. $1 million assessment was used to determine whether it would be necessary to consider flood resilience strategies for the facility.

Confidential Pharmaceutical Manufacturing Client, Natural Hazard and Climate Risk Assessment: Comprehensively assessed natural hazard risks from several perils including, seismic, extreme weather, flood, drought and wildfire. Considered facility downtime and workforce health and wellness. $250,000 work additionally informed company's TCFD report.

Climate Risk Assessment for Electric Bus Charging Terminal: Worked with an interdisciplinary team of engineers, government officials and geographic information system (GIS) experts to produce $100,000 climate risk assessment for an electric bus charging terminal in South Florida. Analysis identified operational aspects of the facility vulnerable to extreme heat/humidity, storm surge, sea-level rise, extreme wind and groundwater rise. Combined SLR and storm surge risk assessment used probabilistic storm surge modeling outputs from U.S. Army Corps of Engineers (USACE) South Atlantic Coastal Study (SACS) and SLR scenario from NOAA (2022) to integrate the probability of flooding over the facility's design life.

Extreme Heat Climate Risk Assessment for a Municipal Electric Utility: Lead climate science analyst responsible for delivering extreme heat projections to inform future planning for a municipal electric utility in Northern California. $200,000 project used projections from Cal-Adapt Extreme Heat Tool. Considered current and future heat impacts on electricity demand (cooling) and transmission lines and transformers.

Allie Reilly

Equity Considerations

Firm Name
WSP

Years of Experience
9

Education
MS, Nature, Society and Environmental Governance, University of Oxford

BA, Environmental Studies and Policy, Brown University

Office Location
San Francisco, CA

Career Summary

Allie is an associate at WSP with a background in environmental policy and research. Prior to joining WSP, Allie served as an AmeriCorps VISTA at the United Way of Rhode Island where she worked to improve the quality of STEM-discipline after-school programs for youth across the state. She completed a thesis that explored the extent to which coastal cities and towns in the northeast US were responding to climate change-related risks post-2010.

Professional Experience

Pinellas County, Act Vulnerability Assessment, Florida: Researcher responsible for conducting a detailed and technically based assessment of the anticipated conditions, the timing of expected change and potential impacts of sea level rise and storm surge to county infrastructure. The study assessed future exposure from now through the end of century for energy, transportation and water infrastructure. Results of the assessment were generated to facilitate more effective decision-making, guide more sustainable policies and determine what actions may need to be taken to ensure the long-term viability of the County's economy, social fabric and community quality of life. The data developed is assembled in geographic information system (GIS) for use in the County's decision support tool and processes developed to complete assessments that will contribute to the County's effort to take more effective action in the coming years.

City of Oldsmar, Climate Resilience Plan (CRP), Florida: Deputy project manager for this project. WSP is developing CRP to address future climate stressors including sea level rise (SLR), storm surge, extreme heat, extreme precipitation and inland flooding. CRP will be conducted in two phases: vulnerability assessment and climate resiliency. Responsible for development of inland flooding projections and assessment of future infrastructure impacts with future changing climate. Project will involve development of a variety of project concepts to address future conditions.

Miami-Dade County, Resilient Future, Florida: Deputy project manager responsible for providing technical support to the Miami-Dade County Office of Resilience to assess the projected impacts of climate induced coastal hazards including groundwater flooding, sea level rise, tidal flooding and storm surge through 2040. The assessment presented the County Office of Resilience with the costs of inaction and the costs of broad sweeping adaptation actions across the County. Helped to inform the data utilized to develop a social vulnerability index for the project to be used to understand risks to the community.

Massachusetts Department of Transportation (MassDOT), Flood Risk Assessment, Boston, Massachusetts: Deputy project manager responsible for conducting a technical analysis of consequences of climate-related flooding impacts on MassDOT's transportation assets across the state. The assessment will consider consequences to socially vulnerable transportation users because of flood-related impacts and disruptions to transportation infrastructure. The assessment will strategically identify the subset of asset users who are socially vulnerable, as defined by the Massachusetts Environmental Justice definition criteria. Outputs of this assessment will help to drive future capital investments for the agency.

Maria Watt, PE, PMP

Mitigation and Adaption Strategies, Engineering Support Lead

Firm Name
WSP

Years of Experience
37

Education
BS, Chemical Engineering, Rutgers University

Certifications
Project Management Professional

Registered Professional Engineer: NJ

Office Location
Tampa, FL

Career Summary

Maria Watt specializes in disaster recovery and mitigation, resilient infrastructure, sustainable redevelopment, and environmental restoration. She has served as principal-in-charge/program manager for numerous disaster recovery, coastal and environmental restoration, wetland restoration, green infrastructure, and flood control projects. Maria has managed and provided technical support to more than 100 multi-disciplined professionals and numerous team members and subcontractors.

Professional Experience

Pinellas County, Grant Writing Services, Florida: Subject Matter Expert providing grant services including needs analysis, funding research, application development and grant administration services for Pinellas County Government.

Pinellas County, Restore Act Vulnerability Assessment, Florida: Subject Matter Expert supporting the vulnerability assessment and associated services to further discern local risks, identify opportunities to prepare for change and understand economic impacts of the various alternatives. This project followed risk-based methodology to quantify potential future risks from flooding; determine damage and economic costs of future events; and use information to determine cost-effective design and response strategies. Considered an important community step toward long-term viability of the region. Recommendations expected to be incorporated into policy/planning documents.

Texas General Land Office (GLO), HUD CDBG-MIT Oversight, Texas: Program manager responsible for overseeing $4.3 billion HUD CDBG-MIT grant funding awarded to declared disasters post-Hurricane Harvey. Oversight includes supporting grant application competitions providing funding to sub-recipients, mitigation/resilient infrastructure engineering design to optimize community resilience parameters, general grant management and compliance services.

New Jersey Department of Environmental Protection (NJDEP), Resilient New Jersey Hurricane Sandy HUD CDBG–Rebuild by Design (RBD), National Disaster Resilience (NDR) Program, New Jersey: Principal-in-charge (PIC) and program/project manager responsible for two federally funded ($230 million and $150 million) resilient infrastructure toolkit projects. Managed planning, permitting, feasibility study, design and engineering services during construction for both projects. NDR resilient infrastructure toolkit involved development of four modules, including green infrastructure (GI) best management practices, long term GI funding strategies, green job development and decision support system (DSS) design/development for resilient infrastructure and mitigation projects. Developed geographical information system (GIS)-enabled tool to define project benefit area (PBA) for coastal and riverine surge protection projects, allowing users to define zone boundaries for assessment and evaluation based on computation methods within GIS tool. RDB post-Hurricane Sandy coastal restoration, resilient infrastructure and flood protection projects included resist feature with flood walls, levees/deployable structures, pump stations, force mains, channel restoration, urban parks/wetland restoration features and major GI components.

Jose Custudio, PE

Stormwater

Firm Name
WSP

Years of Experience
13

Education
ME, Construction Engineering, Polytechnic University of Puerto Rico

BS, Civil Engineering, Polytechnic University of Puerto Rico

Professional Registrations
Professional Engineer: FL, PR

Office Location
Sunrise, FL

Career Summary

Jose Custodio is a licensed professional engineer registered in the state of Florida and Puerto Rico, with a strong background in resilient stormwater, water and wastewater design and Municipal administration. His experience includes planning, design, procurement and construction management and inspection of several Capital Improvements Program projects for municipalities in Florida and Puerto Rico. Prior to joining WSP, Jose served as a Public Works Director – Town Engineer for the Town of Bay Harbor Islands in Florida and as a project manager for the City of Fort Lauderdale Public Works Department where he designed, monitored and directed complex public works projects including the oversight of the bidding process, contractor selection, establishment of construction standards for projects, project planning and scheduling, supervising the construction of projects from design through completion and project close-out to ensure quality and compliance with program standards.

For the Town of Bay Harbor Islands, Jose was involved in the preparation of the Town's Stormwater Master Plan, QAQC of the Vulnerability Assessment and CRS Rating Certification process on behalf of Public Works.

Professional Experience

City of Fort Lauderdale, Central River 20-inch Water Main Crossing, Florida: Design Manager on this project that consisted of the installation of approximately 700 LF of a 20-inch Water Main installed via Horizontal Directional Drilling from the Broward County Correction Facility to just north of Las Olas Blvd. Jose was responsible for the design calculations, development of the design, coordination with stakeholders (DDA, Broward County and Hotels).

City of Fort Lauderdale, East Las Olas 16-inch Force Main, Florida: City Project Manager for this project that consisted of the replacement of approximately 2,000 LF of 12-inch FM with a 16-inch HDPE FM along East Las Olas Blvd from SE17th Street to Lido Drive, via the pipe bursting method. This was a Consent Order Project completed ahead of schedule. Jose was responsible to manage the design, evaluate bid proposals, manage the construction phase of the project and coordinate with FDEP in providing the required information for project close-out.

Town of Bay Harbor Islands, Stormwater Master Plan, Town of Bay Harbor Islands, Florida: Town Engineer for this project that consisted of the development of a Town wide Stormwater Master Plan to address Sea Level Rise impacts in the Town. Among the proposed solutions provided were stormwater injection wells, raising the seawalls, installation of backflow prevention valves, among others. Jose was responsible to review the document and provide comments to the Consultant on behalf of the Town, coordinate meetings with residents to present the results of the Stormwater Master Plan.

Town of Bay Harbor Islands, Stormwater Backflow Prevention Valves (Tidal Valves), Town of Bay Harbor Islands, Florida: Town Engineer for this project that consisted of the installation of several tidal valves on areas of the Town that based on the Stormwater Master Plan were susceptible to Sea Level Rise and King Tides effects. Jose was responsible to prepare the design of the valves in the outfalls, coordinate with supplier, and Contractor and monitor the installation of these ahead of the King Tides season of 2022.

Jerry Ramsden, PhD, PE

Coastal Engineering

Firm Name

WSP

Years of Experience

34

Education

PHD, Civil Engineering, California Institute of Technology

MS, Ocean Engineering, Oregon State University

BS, Civil Engineering, Oregon State University

Professional Registrations

Professional Engineer: FL, OR, TX, WA, ID

Office Location

Portland, OR

Career Summary

Jerry is a supervising engineer 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 a wide variety of hydraulic analyses to support facility siting of deep draft terminals, including container, cruise and bulk terminals. He has completed hydraulic analysis and permitting for recreational marinas, shoreline redevelopment and enhancement and repair or maintenance of existing facilities. His clients include municipalities, regional, national and international governments, associations, port authorities, other engineering consultants, law firms and private industry.

Professional Experience

Pinellas County, Restore Act Vulnerability Assessment, Florida: Lead coastal engineer for the project involving development of future frequency-based tidal flooding and storm surge mapping considering sea level rise (SLR). Data used in a risk-based system-wide vulnerability analysis of County transportation infrastructure and utilities. Vulnerability analysis quantified costs of not adapting each piece of infrastructure and used that for prioritizing detailed adaptation analyses of individual facilities. Conducted five facility-level assessments to demonstrate analyses completion.

Monroe County, Sustainability Services, Florida: Coastal engineer responsible for analysis of tidal flooding at $15.2 million Big Pine Key and $14 million Key Largo projects for use in planning and ordinance modifications associated with road elevations and nuisance flooding issues. Project focus included identifying most cost effective design option for their ongoing county-wide roadway improvement project. Provided planning services to define existing tidal/stormwater inundation areas; define future tidal inundation areas; identify level of service and design response alternatives; and establish response policies for pilot communities.

Florida Department of Transportation (FDOT) District Three, Pensacola Bay Bridge Replacement Design-Build (DB), Pensacola, Florida: Lead coastal engineer responsible for $30.3 million DB replacement of the Pensacola Bay Bridge. Project included dynamic ADCIRC+SWAN modeling of coastal design storm conditions. Performed bridge foundation scour calculations following FDOT scour methods for complex and multiple piers. Performed wave impact calculations following AASHTO guidance for loadings on piers. Design included development of riprap and ACBM revetment designs for protection of approach roadway embankments. Embankments required protection from storm surge and wave impact erosive forces.

Werner Reinefeld, PE, ENV SP

Water/Wastewater

Firm Name
WSP

Years of Experience
40

Education
BS, Civil Engineering, Central University of Venezuela

Professional Registrations
Professional Engineer: FL

Professional Institute for Sustainable Infrastructure, Envision Sustainability Professional (ENV SP)

Office Location
Miami, FL

Career Summary

Werner has over four decades of experience in the fields of civil and infrastructure engineering, project management, design construction, CAD and land development. His experience includes work in the areas of earthworks, road systems, hydrological, hydraulic systems and modeling, water and wastewater facilities, sewer systems, storm water and drainage, utility coordination, oil-contaminated water, energy efficiency audits, permitting feasibility studies, proposal preparation and land development projects.

Professional Experience

Monroe County, Sea Level Rise (SLR) Roadway and Drainage Pilot Project, Key Largo and Big Pine Key, Florida: Engineer of record (EOR) responsible for the site plan and mechanical layout of two pump stations in Key Largo ($14 million) and Big Pine Key ($15.2 million) and drainage layout in AutoCAD Civil 3D. Development of ICPR Models for drainage system, pump station and injection wells. Drainage report included research of existing conditions, post-development conditions, pump selection and pump operational and system curves.

Miami-Dade Water and Sewer Department (MDWASD), Port of Miami 42-inch Water Main (WM), Miami, Florida: Project manager and EOR responsible for $18 million design of a proposed 36-inch Transmission Main that will interconnect with a future 36-inch stub-out MDWASD Downtown Loop Project located at the intersection between Biscayne Boulevard (SR 5/U.S.1) and NW 5th Street and the Port of Miami. Approximately 7,700± feet of transmission pipe. Proposed transmission main takes into consideration future system expansion and improvements identified in the Port of Miami's Master Plan.

MDWASD, Port of Miami – Design-Build (DB) 48-Inch WM at "The Loop" Downtown, Miami, Florida: EOR responsible for $7 million Installation of a 48-inch diameter WM Downtown Loop Closure. Primary purpose is to provide interconnection of the Hialeah/Preston (north service area) and Alexander Orr (south service area) water transmission systems to form a "loop" closure. WSP will be responsible for the planning, design, permitting and construction services associated with the construction of a new 30-, 36- and 48-inch WM. One of the critical challenges the team addressed was working in a highly-urbanized area and in public right-of-way. Construction in Downtown Miami will be affected by vehicular and pedestrian traffic and will contend with numerous congested utilities occupying the streets and right-of-way.

MDWASD North Miami 60-Inch Force Main, Miami-Dade County, Florida: EOR responsible for designing 30%, 60%, 90%, permit plan and profile drawings for three miles of 60-inch prestressed concrete pressure pipe project. Scope of work included preparation of alternative routes available for new $300,000 60-inch force main, construction materials and methods, construction cost and coordination with federal, state and county regulatory agencies, local governments, property owners and stakeholders having interest or potential interest in project.

Todd Mitchell, PE

Structural

Firm Name
WSP

Years of Experience
29

Education
BS, Civil Engineering, University of South Florida

Professional Registrations
Professional Engineer: FL

Office Location
Tampa, FL

Career Summary

Todd has diversified engineering experience from bridges to buildings. As a senior structural engineer with WSP, he has experience in bridge and building design, structural inspections and plan preparation for a variety of projects. Todd's work has involved preliminary and final design of a multitude of structure types, several of which were design/build projects. These include continuous steel girder bridges, precast I-beam/box-beam bridges, slab bridges, conventional reinforced concrete structures and structural steel frame structures.

Professional Experience

Florida Department of Transportation (FDOT) District Two, District-Wide Bridge Repair Design Consultant, Multiple Locations, Florida: Structures engineer responsible for providing bridge engineering services for this task work order based contract that includes various repair and rehabilitation projects. Tasks have included Myrtle Bridge deck replacement study, Main Street trunnion study, updating Dames Point, Main Street maintenance manuals and gusset plate load ratings.

FDOT District One, District-Wide Bridge Engineering, Multiple Locations, Florida: Deputy project manager responsible for $5 million task work order based contract that includes task, such as: life cycle costs analysis, sonovoid slab rehabilitation, scour projects, steel/concrete cleaning/coating, pile jacket and cathodic protection.

FDOT District Two, District-Wide Bridge Engineering, Multiple Locations, Florida: Deputy project manager responsible for the project. WSP selected for district-wide on-call bridge engineering services contract. Task order-based contract includes work program support; structural, geotechnical, survey, corrosion, electrical and mechanical engineering design; maintenance of traffic plans; bridge inspection; design studies; load ratings; and scour analysis. Projects include precast deck replacements, steel/concrete cleaning/coating, pile jacket/cathodic protection, spall/crack repairs, movable bridge steel repairs and mechanical/electrical upgrades.

FDOT, Statewide Structures Review, Multiple Locations, Florida: Deputy project manager responsible for leading a variety of assignments involving post-tensioned structures, movable bridges and complex steel bridges. Reviewed FDOT specifications, sections of the structures manual and detailing manual and developed precast bridge element details which were incorporated into the structures manual. Statewide task-based contract for the design and review of structures statewide includes signature bridges, rail bridges, segmental concrete bridges, movable bridges and arch bridges. Responsible in the development of the guidelines and training for Open Bridge Modeler software.

FDOT District Seven, Sunshine Skyway Bridge Corridor Asset Maintenance Design-Build (DB), Tampa, Florida: Deputy manager and emergency responder responsible for leading all technical support services to prime contractor. Services include routine structural, underwater, corrosion and electrical inspections; special surveys; related assessments; and emergency response support. Structure assets included the 4 structures comprising the Skyway fishing piers, 11 overhead sign structures and eight low to high level bridges and the Bob Graham Sunshine Skyway Bridge.

Christine Fanchi, PE

Transportation

Firm Name
WSP

Years of Experience
24

Education
BS, Civil Engineering, Auburn University

Professional Registrations
Professional Engineer, FL

Professional Transportation Planner

Office Location
Sunrise, FL

Career Summary

Christine Fanchi has over 24 years of delivering multimodal street designs with emphasis on engineering to protect vulnerable users. While serving as City Transportation Engineer for Fort Lauderdale, Christine led numerous projects working closely with Broward County and FDOT to gain consensus and deliver projects on time. Christine utilizes her technical experience alongside her excellent communication skills to leverage positive outcomes for public engagement and stakeholder processes.

Professional Experience

City of Fort Lauderdale, NE 13th Street and NE 4th Ave to Progresso Dr, Florida: First economic development CRA grant for complete streets project included reducing from 5 to 3 lanes, converting signal to roundabout, adding on-street parking, 6.5' on-street continuous green bike lanes, landscaped median with shade trees, landscape bulb-outs, LED roadway lighting upgrades, pedestrian lighting, artistic banners, and community artwork partnership for center of roundabout. Christine led all public outreach during planning, design, and construction at large public meetings and individual businesses.

FDOT D4, NE 4th Ave (SR811), Sunrise Blvd to NE 26th St, Fort Lauderdale, Florida: Christine led traffic analysis and FDOT coordination through this project. Broward MPO funds for bikes lanes prompted City to evaluate lane elimination with FDOT. Christine led traffic analysis and FDOT coordination to achieve approval of lane elimination for City of Fort Lauderdale and City of Wilton Manors. Led numerous public meetings and local meetings to achieve public consensus on repurposing outside lane to buffered bike lane with transit pull outs. She led City review of project through design and construction phases

Neighborhood Master Mobility Plans at Lake Ridge, Coral Ridge, County Club Estates, Palm Air Village, Shady Banks, Tarpon River, Twin Lakes North, Florida: City transportation engineer lead working alongside the City Transportation Planner to lead discussions with neighborhoods about transportation issues, concerns, and opportunities for improved mobility, safety, and connectivity to assets. Outcomes provided prioritized project list submitted for local MPO grant applications and supported neighborhood project programs.

FDOT D5, SR426 Aloma Avenue, Florida: Planning level study with high level of public engagement to improve safety, mobility, and accessibility. This project includes a collaborative partnership between FDOT and Project Visioning Team hosting multiple meetings to understand issues and opportunities. The project considered alternatives focused on traffic calming to support the posted 30 MPH speed limit while improving safety for all modes including: raised intersections, mini-medians, roadway chicanes, raised crosswalks with pedestrian hybrid beacons, internally illuminated RPMs, dynamic curve systems, in lane pavement decals, and a roundabout. Tasks consisted of traffic analysis, project visualization, and construction cost estimating informed project outcomes.

Alec Bogdanoff, PhD

Policy and Funding Support Lead

Firm Name

Brizaga

Years of Experience

13

Education

Ph.D., Physical Oceanography, Massachusetts Institute of Technology (MIT)/ Woods Hole Oceanographic Institution (WHOI)

M.S., Meteorology, Florida State University

B.S., Meteorology, Florida State University

Affiliations

Greater Fort Lauderdale Chamber of Commerce (Chair, Economic Resilience Council; Member, Board of Directors)

American Meteorological Soc.

American Geophysical Union

American Society of Adaptation Professionals

American Planning Association

Urban Land Institute (Chair, District Resilience Committee; Member, District Management Committee)

Office Location

Fort Lauderdale, FL

Career Summary

Alec Bogdanoff, Ph.D. is a policy-trained oceanographer and meteorologist with nearly two decades of policy and political experience, including managing campaigns and authoring legislation on a state and federal level. He is adept project manager, with experience leading complex multi-jurisdictional resilience assessments. He has an extensive background in simplifying and effectively communicating complex scientific processes for general audiences. For Brizaga, Alec is responsible for monitoring and identifying scientific research and advances in the areas of sea level rise and climate change, including datasets and models, to further develop internal technologies, as well as leading resilience and adaptation planning, strategic communications, and public outreach and engagement. Alec also serves as the Senior Scientist for the American Flood Coalition.

Professional Experience

North Bay Village Stormwater Master Plan, Florida: Directed outreach and education associated with the City of North Bay Village's Stormwater Master Plan, which included the development of a communication strategy, assistance with the creation of materials for print, social media, and newsletters, and planning and execution of the public outreach meetings. All materials developed were designed for consumption by the general public.

Village of Key Biscayne Resiliency Strategy, Florida: Developing a Resilience Strategy for the Village of Key Biscayne, including evaluating threats, developing goals, and ultimately working with the consultant team to build an implementation and integration plan that examines all projects across the Village. Leading outreach and engagement efforts, including building a brand for the resilience program and associated educational materials.

Town of Surfside Stormwater and Flood Hazard Mitigation Plan, Florida: Directing outreach and education associated with the Stormwater Master Plan. Serving as project manager for the communications and outreach team, which included the development of a communication strategy, assistance with the creation of materials for print, social media, and newsletters, and planning and execution of the public outreach meetings. The materials developed were designed for consumption by the general public.

Making the Economic Case for Resilience in Tampa Bay, Florida: Served as project manager for a regional business case for resilience across six Tampa Bay counties for the Tampa Bay Partnership, as well as the sea level rise and climate change expert for the project. Throughout the entirety of the project duration, led stakeholder and public outreach engagement through webinars and roundtables highlighting the progression of the project, to both obtain feedback and provide an alignment on research findings for an industry-wide audience.

Edward Ng, MPP, MPL, AICP

Policy/Ordinance

THE CORRADINO GROUP

Firm Name
Corradino Group

Years of Experience
10

Education
Master of Public Policy, University of Southern California

Master of Planning-(Concentration in Economic Development), University of Southern California

BA (Planning and Public Policy, Minor in Economics), Rutgers University

Office Location
Doral, FL

Career Summary

Edward Ng is the Technical Vice President for Corradino's Planning Department, with experience in transportation, economic development, transit-oriented development, and land use planning. His work involves demographic analyses, preparation of and updates to comprehensive plans, grant writing, land use code revisions, geospatial planning analyses, GIS mapping, public outreach, and analyses of traffic facilities and operational data. He specializes in interdisciplinary aspects of planning, including transit-oriented development and complete streets. His recent projects involve land use, transportation, and comprehensive planning services with the Miami-Dade Transportation Planning Organization and the municipalities of Doral, Cutler Bay, Key Biscayne, North Miami, North Miami Beach, Hallandale Beach, and many others. Eddie is currently the Immediate Chair of the American Planning Association, Gold Coast Section Executive Board, and teaches the AICP exam preparation course for planners in Miami-Dade, Broward, Monroe, and Collier Counties.

Professional Experience

City of Fort Lauderdale Comprehensive Plan Florida: Project Manager for this project that completely revised and replaced the existing comprehensive plan, and introduced new elements such as Climate Change, Urban Design, and Economic Development, and built upon public school facilities by expanding the scope of policies in an Education Element geared for all ages. Conducting analysis of economic conditions and development, transportation, land use, and urban design.

Town Cutler Bay Comprehensive Plan Amendments – Climate Change Element, Florida: Planner for this comprehensive Plan includes a climate change element to deal with future sea level rise projects. Analysis was used to create policies related to high- and low-priority sea level rises.

Town of Palm Beach Land Development Regulations Update, Florida: Senior Planner currently working with the Town to update its land development regulations in its first complete overhaul since the 1970s. Revised standards will include updates to address climate change considerations and urban design, including lot coverage, building heights and freeboard regulations, seawall regulations, and landscaping and drainage, among others.

Fort Myers Beach Comprehensive Plan and LDR Update, Town of Fort Myers Beach, Florida: Project Manager for this project that will update the comprehensive plan and land development regulations with new requirements Post Hurricane Ian. Conducted analysis of economic conditions and development, transportation, land use, and urban design.

City of Miami Beach NoBe Ocean Terrace Neighborhood Urban Design Plan, Florida: Prime Consultant/Project Manager for this study that builds upon the City's prior vision for the North Beach area of Miami Beach. Specifically, this plan focuses on an urban design plan for the Ocean Terrace neighborhood, which is located adjacent to the North Beach Town Center neighborhood as envisioned in the City's NoBe Master Plan.

David Stroud, CFM

FEMA CRS

Firm Name
WSP

Years of Experience
38

Education
MS, Urban and Regional Planning, Ball State University

BS, Urban and Regional Studies, Ball State University

AS, Architectural Drafting, Vincennes University

Professional Registrations
Certified Floodplain Manager: NC

Office Location
Durham, NC

Career Summary

David has almost four decades of experience as a floodplain manger and hazard mitigation planner. His expertise includes developing hazard mitigation plans and reviewing and scoring plans for FEMA. Worked for the Insurance Services Office (ISO) on behalf or FEMA's CRS Program as the lead hazard mitigation planner and Flood Training Coordinator for 18 years. He has worked directly with FEMA Headquarters staff in crafting the local multi-hazard mitigation planning guidance to align with the CRS 10-Step Planning criteria including the five-year update guidance (Blue Book). Has significant experience with the minimum regulations of the National Flood Insurance Program (NFIP), FEMA grant programs and FEMA's Repetitive Loss Program. He works with communities, states and FEMA Regional offices on all aspects of hazard mitigation planning and the CRS Program. With ISO, he was responsible for internal staff training on the CRS Program, Hazard Mitigation Planning and Repetitive Loss and taught week-long classes on the CRS at FEMA's Emergency Management Institute (EMI). David has provided numerous planning and CRS workshops by invitation from states, FEMA Regional Offices and various state floodplain associations.

Professional Experience

Monroe County, Local Mitigation Strategy, Florida: Project manager responsible for the development of Local Mitigation Strategy for Monroe County Emergency Management. This plan included six jurisdictions and included both natural hazards and technological hazards. Plan focused on the impacts to sea-level rise.

City of Doral, CRS Program Services, Florida: Responsible for program modification, including developing an Activity 330 Program for Public Information.

Cutler Bay, Watershed Master Plan (WMP), Regulations and Stormwater Manual, Florida: Project manager responsible for the development of $64,500 WMP for Cutler Bay's undeveloped parcels, including existing and future conditions modeling along with the development of stormwater regulations and a stormwater implementation manual with low impact development (LID) techniques included.

Orange County, CRS Services, Florida: Responsible for cycle verification services including developing a CRS Activity 510 Floodplain Management Plan and Repetitive Loss Area Analysis along with an Activity 330 Program for Public Information.

City of St. Cloud, CRS Program Services, Florida: Responsible for recertification assistance and program modification by developing Activity 510 Repetitive Loss Area Analysis and Activity 330 Program for Public Information.

Becky Prado

FDEP Grants

Firm Name
WSP

Years of Experience
23

Education
MS, Marine Sciences, University of South Alabama

BS, Marine Biology, Auburn University

Office Location
Tallahassee, FL

Career Summary

Becky is a dedicated and experienced program director with extensive knowledge of coastal management, interdisciplinary program development and office administration. She brings sound science and innovative coastal restoration and resilience experience to communities to enhance short and long-term resilience. With 19+ years of experience pertaining to Florida's coastal policy, Becky pioneered essential design criteria for green infrastructure, led Florida's beach and inlet management program, directed Florida's Office of Resilience and Coastal Protection and prior to joining WSP served as Executive Director to the Partnership for Gulf Coast Land Conservation directing regional land trust initiatives. She offers high-level expertise for coastal projects and pursuits, particularly in Florida, the Gulf of Mexico and the southeast U.S. Her extensive network of contacts in the field of coastal management and her specialized grant experience can be utilized to help clients fund and implement innovative coastal resilience projects and programs.

Professional Experience

Apalachee Regional Planning Council (ARPC), Franklin-98 Living Shoreline, Eastpoint to Carrabelle Beach, Franklin County, Florida: Project advisor responsible for contributing to all aspects of this large-scale coastal restoration/resilience project along Highway 98 in Franklin County. Contributes to and advises on the design, monitoring, permitting and construction.

ARPC, New River Middle School Living Shoreline Design, Florida: Project advisor on an innovative living shoreline project along 500 feet of New River shoreline at the New River Middle School in partnership with Florida Fish and Wildlife Conservation Commission. Options range from enhancement of the existing bulkhead to removal of some or all of 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.

Mosaic Oyster Habitat for Coastal Defense, Tyndall Airforce Base, Florida: Project manager and co-principal investigator on a collaborative research project to develop a novel reef material that enhances recruitment and survival of oysters, attenuates waves (up to 90%) and is suitable for rapid deployment in various environments. For this $1.6 million project (funded by the Defense and Advanced Research Projects Agency [DARPA]), collaborates with a team of international researchers to design the reef, manage various related experiments, prepare necessary state and federal permits for deployment and manage construction and monitoring of the reef in the field. Preparing technical reports for submission to DARPA, including data analyses and interpretation.

Pensacola East Bay Oyster Habitat Restoration, Pensacola, Florida: Project manager responsible for coordinating and monitoring efforts on this collaborative, large-scale oyster reef construction project. Manages quarterly environmental monitoring for the project including submerged aquatic vegetation, invertebrates and transient fishes. Provides analyses of data and prepares annual and quarterly technical reports.

Alfonso Hernandez

Resilience Grants

Firm Name
WSP

Years of Experience
20

Education
BS, Public Justice Administration, San Diego State University

Office Location
Orange, CA

Career Summary

Alfonso offers public sector grant experience, from pre-award to post-award, which includes grant writing, grants management and identify funding opportunities. Alfonso has worked for various government organizations at the local and regional levels. He is a subject matter expert (SME) in the field of government grant development, including federal, state and local grants and has a large portfolio of grant experience that addresses across each department for government organizations. Collectively throughout his career, Alfonso has secured 200+ competitive grant applications in excess of $800 million, while maintaining a high success rate. He ensures agency-wide compliance with funding requirements for each respective funded project. He has led audit and sub-recipient monitoring efforts on both sides of the audit as a reviewer and recipient, including United States Department of Transportation (USDOT)/Federal Transit Administration (FTA) triennial reviews and ongoing monitoring of sub-recipients. Grant Writing and Management Certification, California State University San Bernardino, Grants Management Certificate Program, Management Concepts.

Professional Experience

Pinellas County, Grant Writing and Administrative Services, Florida: Project manager responsible for overseeing development and submission of competitive grant applications, which includes Federal, state and local programs. Developing project narratives, benefits cost analysis (BCA), disadvantaged and low-income communities' analyses, greenhouse gas (GHG) emissions calculations, geographic information system (GIS) maps and graphics for the application packages.

USDOT, FY2021–FY2022 RAISE Grant Applications, Multiple Locations Nationwide, United States: Leads national advisory team solely dedicated to grants and funding strategies. Helps clients across the country secure millions of dollars in federal funding and financing for numerous freight rail, intercity passenger rail, transit, highway, bridge and multimodal projects. Supported numerous clients for fiscal years 2021 and 2022 USDOT RAISE grant program. WSP clients awarded over $142 million in FY2021 and $228 million in RAISE grants, combination of over $370 million in RAISE grant awards.

Riverside County Transportation Commission (RCTC), Grant Writing On-Call, Riverside, California (Discretionary): Project manager responsible for overseeing team development and submission of grant applications for programs funded under the Road Repair and Accountability Act of 2017 (Senate Bill 1, Chapter 5, Statutes of 2017 (SB1)), other state and local programs as well as Federal programs. Competitive programs include Transit and Intercity Rail Capital Program (TIRCP), Solutions for Congested Corridors (SCCP), Local Partnerships Program (LPP), Trade Corridor Enhancement Program (TCEP), Active Transportation Program (ATP), Building Infrastructure Leading to Diversity (BUILD) and Infrastructure for Rebuilding America (INFRA). Works closely with RCTC grants and project management staff to strategize funding approach and coordinate team staffing for the development, refinement and submission of competitive grant applications. Developing project narratives, benefit-cost analyses (BCA), disadvantaged and low-income communities' analyses, GHG emissions calculations, geographical information system (GIS) maps and graphics for application packages. Providing financial advisory and consultation to the client, in better positioning for funding opportunities.

Experience of the Firm

WSP's Climate, Resilience and Sustainability (CRS) National Business Practice

Climate change is a defining challenge of our time, from increasing temperatures and shifting precipitation patterns to rising sea levels, more frequent/severe weather events and natural disasters. Climate change exposes and exacerbates vulnerabilities and complicates the already-difficult task of steering an organization into the future. We strive to be the most influential CRS services consultant in the business. We seek to effectively collaborate with our clients on flood planning, mitigation and coastal protection projects while investing in new climate finance and investment capabilities. We partner with innovative, emerging CRS-related technology to provide our clients with the best viable solutions.

Our People

Our team is up-to-date on the latest trends and challenges related to the environment. They possess the expertise necessary to assist clients across the entire process of climate preparedness, including analyzing vulnerable assets and operational sustainability; reviewing and synthesizing climate science data; developing geodatabases of critical infrastructure and natural threats; and applying engineering expertise to retrofit and support physical structures, energy systems, water supply and natural environments. We have assembled a locally staffed and multidisciplinary team of highly qualified professionals that can deliver the Vulnerability Assessment efficiently and responsively without sacrificing quality. We are fully committed to the City's success.

Future Ready®

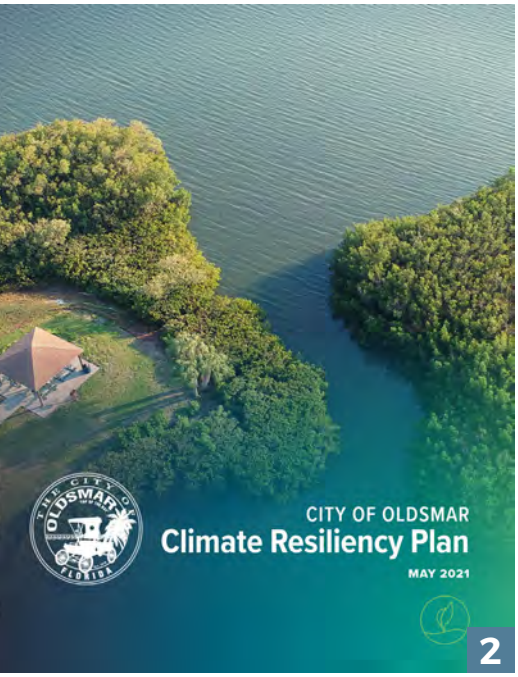
WSP works with organizations and communities to help them become Future Ready. We develop strategies to mitigate emissions and enhance sustainability, identify potential risks and opportunities to become more resilient. We implement equitable adaptation solutions that prioritize community and stakeholder engagement and environmental justice. We understand the connectivity in and among natural and manufactured ecosystems.

Past Projects of Similar Size and Scope

Our culture and business approach are rooted in a holistic, forward-looking perspective. We have a strong research and innovation program, publish thought leading papers and participate in leading industry events such as COP27. In all of this, we are passionate about using our scale to lead the transition to a prosperous, resilient, equitable and sustainable society. Below is a list of similar projects to the services described in the RFP.

1. Restore Act Vulnerability Assessment, Pinellas County, FL
2. Climate Resiliency Plan, City of Oldsmar, FL
3. Infrastructure Investment Assessment, Vulnerability Analysis and Capital Plan, Monroe County, FL
4. Sea Level Rise (SLR) Strategy, Miami-Dade County, FL
5. FDOT Training - Resilience in Project Development and Design, Florida Department of Transportation
6. Broward MPO, Climate Risk to Transportation System, Metropolitan Planning Organization, FL
7. Franklin-98 Living Shoreline Program Management, Apalachee Regional Planning Council
8. Comprehensive Plan Update, City of Fort Lauderdale
9. Community Rating System, Village of Palmetto Bay
10. Broward County & City of Fort Lauderdale Joint Government Center, Broward County, FL
11. Mola Ave. Conceptual Road Raising, City of Fort Lauderdale, FL
12. Fort Lauderdale Downtown Development Authority Huizenga Plaza Resiliency Analysis, Fort Lauderdale Downtown Development Authority
13. Southeast Palm Beach County Climate Change Vulnerability Assessment, Southeast Palm Beach County Coastal Resilience
14. City of Fort Lauderdale Cemetery Master Plan, City of Fort Lauderdale, FL
15. Southeast Florida Business Case for Resilience, Southeast Florida Regional Climate Change Compact via Broward County, FL
16. Dania Beach Southeast Drainage Retrofit Project, City of Dania Beach, FL
17. Infrastructure Assessments and Improvements, Monroe County, FL
18. National Transportation Engineering Approaches to Climate Resiliency Study, Federal Highway Administration
19. Resilience Planning and Implementation, City of St. Augustine, FL
20. I-95/I-40 Flood Resiliency Feasibility Study, North Carolina Department of Transportation
21. Transportation Research Board Report – Mainstreaming System Resilience Concepts into Transportation Agencies: A Guide, National Cooperative Highway Research Program
22. CDBG-DR, New York Governor's Office of Storm Recovery
23. CDBG-MIT, Texas General Land Office
24. CDBG-RBD/NDR, Connecticut Department of Housing
25. Statewide Climate Risk Assessment, California Department of Transportation
26. Statewide Flood Risk Model, Massachusetts Department of Transportation
27. Resilient New Jersey Hurricane Sandy – HUD CDBG – Rebuild by Design (RBD)/National Disaster Resilience (NDR) Program, New Jersey Department of Environmental Protection

Past Projects of Similar Size and Scope (cont.)



1 Restore Act Vulnerability Assessment

Pinellas County, Florida

Firm: WSP

WSP developed state-of-the-art quantitative ADAP methodology, which quantified both county-wide and facility-specific vulnerabilities to storm surge and tidal flooding. We worked with stakeholders to develop a county-wide asset database and utilized identified priority adaptation efforts via ADAP method.

2 Climate Resiliency Plan

City of Oldsmar, Florida

Firm: WSP

WSP conducted a risk-based vulnerability assessment of city assets and partnered with UF on probabilistic flood models. We assessed their Comprehensive Plan, National Flood Insurance Program (NFIP) Community Rating System (CRS) program and recommended policy changes.

3 Infrastructure Investment Assessment, Vulnerability Analysis and Capital Plan

Monroe County, Florida

Firm: WSP

WSP developed an adaptation plan, including mitigation concept plans, cost estimates and benefit-cost analyses for the most critical County-managed transportation infrastructure segments. The project combined climate change science and modeling with engineering and planning to develop a long-term roadway corridor adaptation plan based on design criteria, sea level rise (SLR) projections, adaptation methodology, policy/financing evaluation and public/stakeholder outreach.

4 Sea Level Rise (SLR) Strategy

Miami-Dade County, Florida

Firm: WSP

WSP conducted a risk-based vulnerability assessment for the County's Office of Resilience. The results are being utilized to raise

awareness, spur action and inform the community about long-term impacts and regional economic costs related to climate change.

5 FDOT Training - Resilience in Project Development and Design

Florida Department of Transportation

Firm: WSP

WSP is currently supporting FDOT in the development of an all-day training course outlining best practices for incorporating resilience practices across engineering disciplines. The training includes consideration of future conditions, extreme weather effects, data uncertainties and effects and consequences as key elements to support the ultimate selected design alternative. Course modules include material on risk-based approaches, inland flooding, coastal flooding, structural engineering, natural/green infrastructure, and pavements. Course materials include resource links to available tools that can facilitate further integration into practices into the future. The course will be conducted in the coming weeks in three regions of Florida – southeast, central, and the capital region where participants will be afforded the opportunity to engage in dialogue on applicable methods and ask questions of instructors. The expected outcomes of this effort will include enhanced processes toward resilience at the agency, and also in regions and communities where FDOT is an advisory stakeholder

6 Broward MPO, Climate Risk to Transportation System

Broward Metropolitan Planning Organization (MOPO), Florida

Firm: WSP

WSP led a regional vulnerability assessment in 2015, a Broward County transportation focused assessment in 2016 and prioritized top eight most vulnerable corridors. Currently, WSP is developing a conceptual engineering plan and estimate construction cost for resilient corridor.

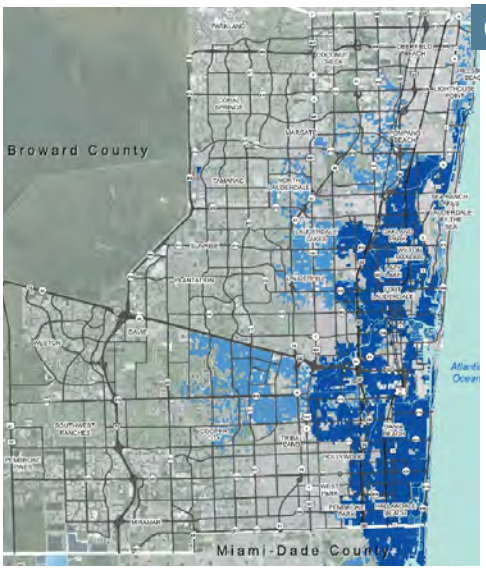
Regional Plan: South Florida Climate Change Vulnerability and Adaptation Pilot Project

Firm: WSP

WSP assisted BMPO with a pilot regional vulnerability assessment to determine the impact of extreme weather on the area's regional transportation network using the stressors- sea level rise, storm surge, precipitation-induced flooding. The focus of the pilot to develop a consistent methodology for integrating vulnerability into the BMPO transportation decision-making process. The Pilot Project covered the four counties and three MPOs in the South Florida area. The purpose of the Pilot Project was to determine the impact of extreme weather on the area's regional transportation network based on the following stressors:

- Sea level rise
- Storm surge
- Precipitation-induced flooding

The focus of the Pilot Project was to develop a consistent methodology for integrating vulnerability into the MPO transportation decision-making process. The Broward MPO Board endorsed the South Florida Climate Change Vulnerability and Adaptation Pilot Project on March 12, 2015 and the Federal Highway Administration approved it on September 29, 2015.



Countywide Plan: Broward County Climate Change Risk to the Transportation System

Firm: WSP

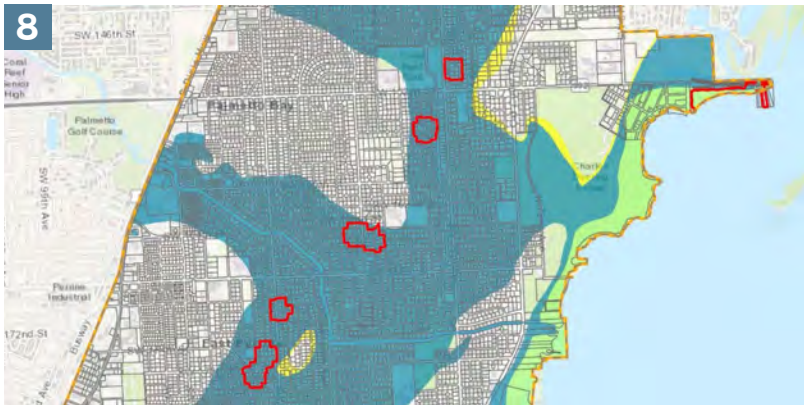
The Countywide assessment included the locations and elevations of significant roadways and bridges in Broward as compared to current and future flood levels. The analysis resulted in the identification of vulnerable facilities and adaptation strategies for the specific stressors on the roadways. The Study provided planning level cost estimates and recommended an investment prioritization methodology for decision-makers.

The Second Phase of the Pilot Project applied the climate change stressors to county and local roadways within the Broward region. On December 11, 2014, the Broward MPO authorized the funding of the Second Phase Study, building upon the work of the Pilot Project. This Second Phase Study applied the climate change stressors to county and local roadways classified as collectors and above within the Broward region. This effort included an assessment of the locations and elevations of significant roadways and bridges throughout Broward as compared to current and future flood levels. The analysis resulted in the identification of vulnerable facilities and methods for treatment of the impact of specific stressors on the roadways. The Second Phase Study provided planning level cost estimates for these treatments and recommended strategic approaches for decision-makers to determine where to focus on transportation investments. The MPO Board approved the Second Phase Study on October 13, 2016.

Hollywood Boulevard Pilot

Firm: WSP

In coordination with the BMPO, WSP is coordinating with the City of Hollywood and its CRA, Broward County and the Florida Department of Transportation (FDOT) to identify adaptation strategies. Design alternates will be developed through stakeholder engagement. The preferred alternate will be developed into conceptual engineering design with opinion of probable costs. Also, the project will pilot the BMPO's Resiliency Framework and provide recommendations.



7 Franklin-98 Living Shoreline Program Management

Apalachee Regional Planning Council

Firm: WSP

WSP served as the program manager on this DWH funded disaster recovery project to help restore Apalachicola Bay, the largest oyster fishery in the US. We are currently in the design phase after gathering field support data (ecological surveys, geotechnical data and elevation surveys). We are providing construction support and monitoring through 2024.

8 Comprehensive Plan Update

City of Fort Lauderdale, Florida

Firm: Corradino Group

The Corradino Group, Inc. was selected as the Prime Consultant to perform the update to the City of Fort Lauderdale Comprehensive Plan. This project will completely revise and replace the existing comprehensive plan, and introduce new elements such as Climate Change, Urban Design, Economic Development, and build upon public school facilities by expanding the scope of policies in an Education Element geared for all ages. The comprehensive plan revision includes the development of revised principles and goals based on an analysis of economic conditions and development, transportation, land use, and urban design, and includes extensive outreach to stakeholders, City appointed committees, and the general public through several media outlets.

To prepare for resiliency and peril of flood amendments, Corradino reviewed and utilized the city's data and analyses regarding storm.

9 Community Rating System

Village of Palmetto Bay, Florida

Firm: Corradino Group

The Village of Palmetto Bay selected The Corradino Group, Inc., working alongside Wood Environment & Infrastructure Solutions, Inc., now part of WSP, to assist with lowering the CRS classification over a three-year phased approach. The project team is currently in Year 3 of implementing various new CRS activities, such as adopting higher regulatory standards and creating a Program for Public Information (PPI) to accomplish the Village's goal of reducing its CRS classification to the lowest rating possible.

10 Broward County & City of Fort Lauderdale Joint Government Center

Broward County, Florida

Firm: Brizaga

Brizaga served as a subconsultant to ZYSCOVICH, Inc to provide resiliency services in the development of the design criteria package for the Broward County and Fort Lauderdale Joint Government Center Campus. Brizaga identified the top environmental hazards expected to affect the Joint Government Center and provided key recommendations for long-term resilience solutions. These science-backed recommendations spanned wind loading considerations, stormwater management performance requirements, green infrastructure, storm surge exposure and finished floor elevations, and adaptive design. Brizaga ultimately provided critical insights towards proactive protection of this critical asset in conjunction with future planning and development efforts of the surrounding properties.

During the project, Brizaga produced resilience considerations that may be implemented throughout the government center regarding topics such as stormwater management, heavy rainfall, and tidal flooding. Identified site-specific hazards as well as led stakeholder engagements that solicited feedback applicable to the resilience design criteria. Provided, analyzed, and implemented external resources regarding future climatic conditions and how to utilize these considerations for the long-term resilience of the government center.

11 Mola Ave. Conceptual Road Raising

City of Fort Lauderdale, Florida

Firm: Brizaga

The Brizaga team performed flood risk assessments for various properties based on finished floor elevations, site grades, and flood projections. The team evaluated the predicted future conditions of baseline water levels and storm surge elevations utilizing NOAA sea level projections. This evaluation was consistent with the Southeast Florida Regional Climate Change Compact recommendations. We also worked to communicate flood risk, mitigation options and costs, and potential mitigated damages and insurance savings to owners as well as coordinate with the local government to accelerate public right-of-way improvements. The project was started by a private resident of the street, and then the City engaged Brizaga to support the development of conceptual road raising plans that included and harmonization with private property.

12 Fort Lauderdale Downtown Development Authority Huizenga Plaza Resiliency Analysis

Fort Lauderdale Downtown Development Authority

Firm: Brizaga

In coordination with the Fort Lauderdale Downtown Development Authority (DDA) and the Urban Land Institute (ULI) Brizaga performed a resiliency analysis and a benefit-cost analysis of the conceptual design of Huizenga Park, located in the heart of downtown Fort

Lauderdale along the New River. The project consisted of the initial resiliency recommendations pertaining to flooding, extreme heat, and extreme wind, as well as an economic analysis of various resiliency measures. Brizaga facilitated an expert roundtable with various stakeholders and industry experts to review the preliminary findings and garner feedback. A return-on-investment analysis was conducted to understand the value of specific flood protection measures, namely freeboard and dry floodproofing, and to what extent they should be implemented. Brizaga's findings were summarized in a public facing, graphically designed white paper.

During the project, the Brizaga team provided initial recommendations based on specific design criteria informed by flooding, wind, and heat threats. Assessed expansion and partnership opportunities for the park in conjunction with stormwater improvements. Developed fragility curves and performed a return-on-investment analysis of freeboard and dry floodproofing based on annual expected losses with sea level rise. Facilitated an expert roundtable with resilience experts, landscape architects, stormwater engineers, coastal engineers, and key stakeholders. Detailed findings in a graphically designed white paper.

13 Southeast Palm Beach County Climate Change Vulnerability Assessment

Southeast Palm Beach County Coastal Resilience

Firm: Brizaga

The Coastal Resilience Partnership of Southeast Palm Beach County is a micro-regional collaborative that includes seven municipalities and Palm Beach County. Together, they performed a climate change vulnerability assessment. As a multi-jurisdictional assessment, the project had diverse stakeholder groups working together on a common project. Because of the nature of the project, the project included significant community outreach including workshops that were held virtually because of COVID, a survey, and an executive summary designed for the general public.

During the project, Brizaga created a logo and brand for the Coastal Resilience Partnership of Southeast Palm Beach County. They evaluated future conditions of baseline water levels utilizing NOAA sea level projections consistent with the Southeast Florida Regional Climate Change Compact recommendations. Brizaga coordinated all communications, outreach, and engagement for the project, held Public workshops and developed and executed a comprehensive survey. Finally, they created an executive summary version of the assessment that was graphically pleasing and geared for public consumption.

14 City of Fort Lauderdale Cemetery Master Plan

City of Fort Lauderdale, Florida

Firm: Brizaga

Brizaga has intimate knowledge of the City of Fort Lauderdale and worked closely with the KEITH team to assist in the master planning and engineering process as it relates to sea level rise for the City of Fort Lauderdale's Cemetery Master Plan. Specifically, Brizaga provided fundamental guidance in the methodology of assessing gravesites in relation to persistent flooding, developing a geo-spatial database, and evaluating asset conditions and how they can be improved. In 2019, the Fort Lauderdale Cemetery Master Plan was successfully completed.

During the project, the Brizaga team led sea level rise vulnerability component of master planning process. Developed an Adaptation Action Elevation metric that was applied to Broward County. They assessed conditions of persistent flooding and the relative impacts on cemetery assets, and provided strategic communications for implementations of best management practices. They also produced a site analysis plan and provided specifications for the four cemeteries in relation to long-term sea level rise scenarios.

15 Southeast Florida Business Case for Resilience

Southeast Florida Regional Climate Change Compact via Broward County

Firm: Brizaga

The Brizaga team served as the local project manager on behalf of the Urban Land Institute under the Southeast Florida Regional Climate Change Compact. Brizaga has a strong understanding of the economics pertinent to sea level rise and applied its expertise towards project development. As the local project manager, Brizaga was responsible for coordinating the day-to-day activities across all team members and providing methodology behind the strategic development of the project scope. In October 2020, the Business Case for Resilience Report launched showcasing the regional economic benefits of climate adaptation.

During the project, the Brizaga team provided guidance and strategy on the development of scope, project timeline, and final deliverables. Gave critical input on the topic of sea level rise and how future economic stressors pertinent to climate change may impact the real estate market and local economy. Assisted in synthesizing key research findings from economic modeling consultant. Serve as the main point of contact and primary coordinator for project tasks. Reviewed ULI report and contribute valuable edits and feedback.

16 Dania Beach Southeast Drainage Retrofit Project

City of Dania Beach, Florida

Firm: WSP

The proposed project site is approximately 190 acres in Dania Beach, Florida. This neighborhood bounded by SE 3rd Street to the North, SE 2 Ave to the West, SE 7 Street to the South and SE 5th Avenue to the East constantly experiences flooding that has had a negative impact on property values. The purpose of this retrofit project is to reduce duration and severity of flooding during regular rain events and improve resident quality of life. The proposed improvements include exfiltration trenches, pump stations, and injection wells prior to connecting to the existing outfalls to West Lake Park.

The objective of this retrofit project is to improve the water quantity and quality of the existing conditions. Water quantity improvements shall be achieved by reducing the staging in the sub-basins during the design storm event, reducing volumetric discharges and reducing flow rates through the existing outfalls. Water quality shall be provided, to the extent possible, by existing swales, exfiltration trenches, and baffles. A hydrodynamic separator has been included to reduce the influent total suspended solids concentration prior to discharge to the pump station as well as satisfy water quality requirements.

17 Monroe County Infrastructure Assessments and Improvements

Monroe County, Florida

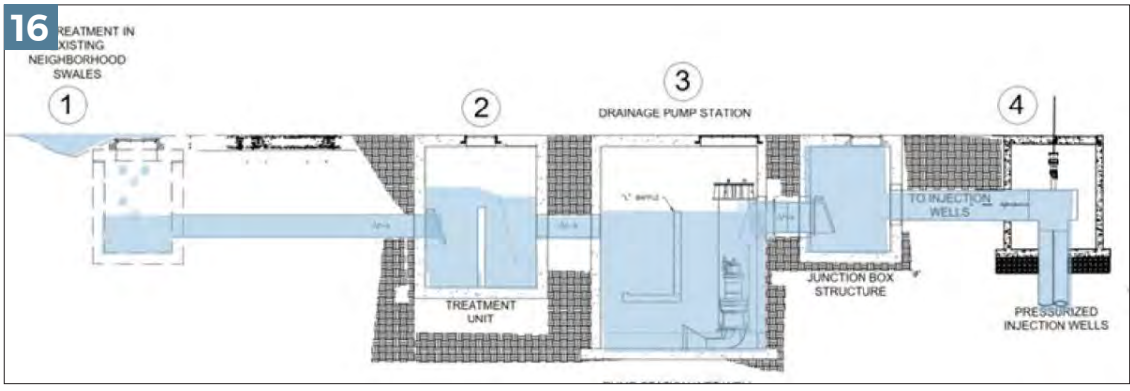
Firm: WSP

WSP provided climate change adaptation services to Monroe County on multiple phases of this project development process - in an area already feeling the effects of climate change and subject to significant national news coverage. Communities in the coastal areas of the County currently experience increased flooding and loss of access on neighborhood roads for extended periods of time. WSP supported the County on the development of design options in two pilot communities to ensure that infrastructure investments made today on roadway improvement plans incorporate sea level rise and associated tidal effects.

The three phases included:

- Conducting an analysis of sea level rise / tidal effects and the impact of access disruptions which resulted in the stated policy of the county
- designing roads for a 40-year service life, with a

16



maximum disruption of one week per year at the end of that period when considering sea level rise

- Completing conceptual design (during the initial study) and final design for the roadway improvements to sea level rise target elevations and incorporating progressive stormwater management practices (gravity and pressurized systems) and working with state advocates by providing technical information to serve as the basis for funding requests
- Bidding process support (current) and oversight of the state funded construction program that is being initiated to implement the envisioned design.

The effort has included the development of multiple visual products highlighting anticipated future conditions from sea level rise.

Planning Phase: An Analysis of Sea Level Rise / Tidal Effects and the Impact of Access Disruptions on Community

Firm: WSP

WSP and Monroe County conducted this pilot study and engineering technical analysis based on a data-driven method to identify the appropriate design response to potential sea level rise effects on roadways for two communities: The Sands and Twin Lakes Communities on Big Pine Key and Key Largo, respectively. The assessment involved studying past events to determine flooding recurrence, evaluating future sea level rise estimates for the county, developing engineering response strategies and estimated costs, and identifying design alternatives for both communities. WSP estimated cost to raise all roadways in each community to various design scenarios (6", 12", 18", and 28"). Estimated costs for elevating the roadways in the two communities were developed based on information provided by Monroe County and a review of construction costs for other similar local projects. WSP also evaluated other options including stormwater management design alternatives to mitigate flooding now and into the future. This pilot project is a resource for the county used to estimate costs and identify responses to sea level rise and flooding for road improvement projects across the county.

Engineering Design Phase: Monroe County Sea Level Rise Roadway and Drainage Improvements Pilot

Firm: WSP

The team designed the roadway and stormwater improvements using the conceptual design developed in the planning phase with community input. Additional public engagement to review impacts were held before finalizing engineering design at the end of March 2020. Also, the roadway and drainage design required close coordination with the Florida Keys Aqueduct Authority's water mains and vacuum sewer lines.

Proposed improvements consider the climate risk for year 2050. The proposed system uses design storms 10-year SCS Type II storms with durations of 24 and 72 hours correspondingly. The project is split into two areas: Twin Lakes at Key Largo 2 consisting of 4,700 LF of roadway reconstruction, 5,000 LF of drainage collection system, and a stormwater pump station with 20,000 GPM pumps and Sands Community in Big Pine Key, consisting of 1,700 LF of roadway reconstruction, 2,000 LF of drainage collection system, and a stormwater pump station with 50,000 GPM.

This final stormwater system design includes a gravity collection system with a pump station discharging to multiple injection wells and routing all runoff to the pump station using trunk lines along the main roads. The design of drainage includes numerous inlets and manholes, above ground electrical control and distribution panels, generator, underground valve box, wet well, treatment unit structures, and a solids storage pump.

18 National Transportation Engineering Approaches to Climate Resiliency Study

Federal Highway Administration

Firm: WSP

The U.S. Department of Housing and Urban Design (HUD) launched the Community Development Block Grant (CDBG)-Rebuild by Design (RBD) and-National Disaster Resilience (NDR) programs to restore/enhance resilient infrastructure and promote mitigation approach innovations for regions affected by Hurricane Sandy. NJDEP was awarded $480 million in HUD CDBG-RBD funds for the Meadowlands and Hoboken Regional Resilient Infrastructure Projects

that integrated nature-based solutions into major flood control and resilient infrastructure. WSP was selected to develop a regional resilience action plan (RRAP) for the Atlantic City region. We worked with municipalities within the coastal zone to understand/plan for vulnerabilities to sea level rise (SLR) and future coastal hazards. These projects piloted methods to communicate risk and evaluate potential strategies to reduce vulnerabilities and exposure.

19 Resilience Planning and Implementation

City of Saint Augustine, Florida

Firm: WSP

WSP supported for the facilitation of a resilience workshop that provided bottom-up input required to drive stakeholder engagement. We developed a resilience plan that helps the City prioritize, allocate funding and implement critical infrastructure protection projects.

20 I-95/I-40 Flood Resiliency Feasibility Study

North Carolina Department of Transportation

Firm: WSP

Hurricane Matthew and Hurricane Florence catastrophically impacted North Carolina in 2016 and 2018. Extensive riverine flooding inundated I-95 and I-40 for up to a week or more following both storms, greatly affecting mobility along the east coast of the U.S. The City of Wilmington was water-locked with no accessible roads in or out. The destruction and disruption caused by these storms brought renewed attention to the State's vulnerability to extreme flooding events.

WSP was commissioned to address the vulnerability of the State's infrastructure to natural flooding disasters and to initiate mitigation strategies as part of the I-95/I-40 Flood Resilience Feasibility Study Project. This project identified improvement options and estimated costs to increase flood resilience on the 95/40 corridors.

We identified improvement options intended to decrease flooding potential and minimize transportation disruptions during extreme weather events. The methods in this study may be used to support flood resilient design for future transportation improvement projects.

21 Transportation Research Board Report – Mainstreaming System Resilience Concepts into Transportation Agencies: A Guide

National Cooperative Highway Research Program

Firm: WSP

WSP is at the forefront of cross-discipline collaborative research and development on resilient infrastructure practices. We prepared and published critical NCHRP guidance in 2021—TRB Report 970: Mainstreaming System Resilience Concepts into Transportation Agencies. This guide presents risk-based approaches that apply to any agency or project type.

22 CDBG-DR

New York Governor's Office of Storm Recovery

Firm: WSP

WSP developed a comprehensive plan of projects that bolster the resiliency of several New York communities against future storm events.

These $810 million total projects will achieve a breadth of economic, social and environmental goals for revitalization. We performed a living breakwaters proposal for the RBD competition, which resulted in an award of $60 million for implementation. WSP performed subsurface investigation, conceptual design and engineering support.

23 CDBG-MIT

Texas General Land Office

Firm: WSP

WSP is conducting engineering oversight and HUD CDBG-MIT compliance for this $4.3 billion design and construction grant for resilient infrastructure along the Texas coastline, tidal riverine and back bays impacted by Hurricane Harvey.

24 CDBG-RBD/NDR

Connecticut Department of Housing

Firm: WSP

WSP is working with the newly formed Connecticut State Agencies Fostering Resilience Committee to lead the development of comprehensive resilience plans and pilot project interventions in the cities of New Haven and Bridgeport worth $54 million.

We are creating a road map for long-term resilience planning in coastal and riverine communities damaged during Hurricane Sandy. We are crafting policies that equitably promote resilience.

25 Statewide Climate Risk Assessment

California Department of Transportation

Firm: WSP

WSP built a statewide climate risk assessment that included the assembly of downscaled climate data from a range of sources. We analyzed changing precipitation patterns, rising temperatures, wildfire effects, groundwater levels, SLR, storm surge and coastal erosion to provide a holistic definition of changing climate affects. This work informed potential institutional changes and enabled the determination of increasing costs needed to be reflected in the capital program.

26 Statewide Flood Risk Model

Massachusetts Department of Transportation

Firm: WSP

WSP is currently developing a statewide flood risk model to inform capital investments and programs. We are developing downscaled precipitation from climate models. We will generate probabilistic inland floodplains and determine assets at risk from overtopping/erosion.

We will estimate repair periods and system/user delays. These values will be incorporated into a, first of its kind in the U.S., financial risk model to serve as an investment guide and help the agency estimate increasing changing climate costs.

27 Resilient New Jersey Hurricane Sandy – HUD CDBG – Rebuild by Design (RBD)/National Disaster Resilience (NDR) Program

Trenton, New Jersey

Firm: WSP

WSP identified and addressed gaps in regional resilience planning post-Hurricane Sandy. We worked with NJDEP to develop response scenarios, targeted strategies, action plans and other program elements through a structured and dynamic process.

We created a state-of-the art resilience toolkit consisting of four “best practice” modules:

1. Green infrastructure management
2. Stormwater/green infrastructure (GI)
3. Decision support system (DSS)
4. Development funding strategies

SECTION 4
Approach to Scope of Work

Approach to Scope of Work

Understanding of the Scope of Work

The purpose of this project is to develop a Vulnerability Assessment (VA) for the City that meets State criteria and satisfies criteria for Federal and State climate change/system resilience project funding. The VA will include roadway assessments and will produce elevation certificates for prioritized critical governmental facilities. The resulting adaptation plan will include a prioritized list of adaptation investments focusing on minimizing the risks associated with future flooding. Several characteristics of the proposed technical approach merit some discussion at the outset:

- The VA must satisfy State requirements as specified in FS 380.093 and implemented by the Florida Department of Environmental Protection (FDEP). This includes satisfying FDEP's Standardized Vulnerability Assessment process.
- The VA will provide the basis for satisfying funding requirements for Federal and State climate resilience funding programs. For example, the analysis will provide the analysis foundation for projects being proposed by the City for consideration as part of the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) formula program of the recent Federal transportation legislation, as well as funding from the Federal Emergency Management Agency (FEMA). The analysis will also establish the technical basis for grant funding from the State such as the Resilient Florida program.
- The VA is intended to enhance the City's ability to prepare for, and respond to, extreme weather/flooding hazards. This includes understanding the building codes and other regulatory standards adopted to reinforce the impacts of resilience improvements.
- The plan shall be based on a long-term planning horizon and inform both immediate and long-range investment decisions. This means that the planning horizon will be based on climate scenarios as required.

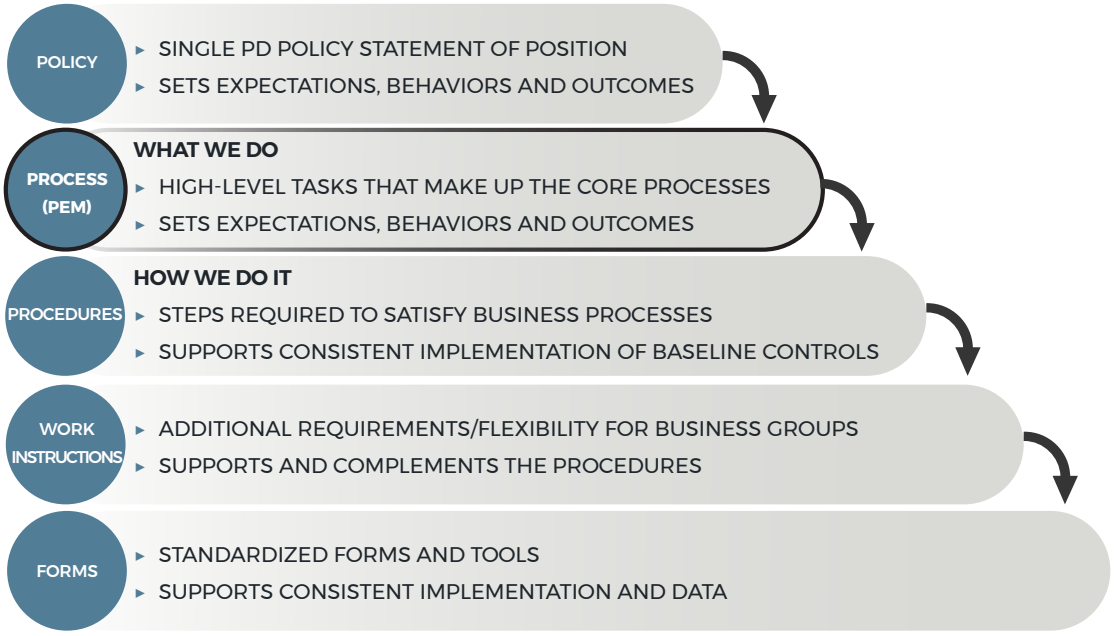
- The VA will demonstrate a systemic approach to examining climate resilience and be consistent with and complementary of the State and local mitigation hazard mitigation plans.
- The benefits of resilience-related investments are usually viewed as the reduced costs to the agency, users, and (often) to society in general of making the investment as compared to the do-nothing option.
- The VA development process will be based on the best science and data, and use the many different disciplines needed to assess the impacts and consequences of potential disruptions. The tools and methods to be used by WSP are founded on the latest climate science and utilize the most up-to-date databases (which will be referenced in the VA). We should note that WSP has been developing innovative and state-of-art tools as part of many municipal, state, and metropolitan planning organization (MPO) studies. We view our technical approach as at the leading edge of resilience practice in the nation. In addition, WSP has successfully used multidisciplinary teams for conducting resilience studies.
- The VA leads to both physical and nature-based strategies for enhancing resilience and consider as part of the strategy assessment a range of consequences to different population groups (e.g., disadvantaged populations) and sectors (e.g., emergency response and freight movement). In addition, and importantly from the perspective of building public support for plan implementation, the evaluation of such strategies should include not only the benefits and costs to the City but also to system users (passenger and freight), as well as costs to society in general. This latter group includes an assessment of the benefits and costs of resilience projects and strategies on underserved and underrepresented.
- The VA will reflect the City's decision-making and planning processes and link to other planning efforts. The purpose of any plan is to inform decision-making, in this case identifying opportunities for enhancing the resilience of the City's critical facilities. As part of this link to decision-making, this project will develop a methodology for scoring projects that are eligible for resilience program funding thus feeding directly into the funding allocation decision-making process for relevant programs. As part of this project, WSP will analyze the linkage between the VA and other City planning and programming processes.
- Finally, the project will build upon the City's important resilience work already undertaken. Unlike many other cities, Ft. Lauderdale is in a position to take advantage of experience with the types of assessment approaches that feed into resilience funding programs. The WSP team has undertaken over 20 VAs in Florida, and can thus apply the lessons learned on applying risk-based assessment tools and methods in a VA.
- The following tasks reflect the required work as described in the Solicitation. For each we have described how the task will be accomplished and the products of the task.

Project Approach Overview

Task 1: Project Management and Acquire Background Data

WSP uses state-of-the-practice project management tools and processes to manage projects and to meet and most often exceed client expectations. Team members have decades of experience organizing and conducting project meetings, as well as satisfying project deliverable schedules and requirements. WSP has created our Project Excellence and Delivery (PD&E) Program to ensure WSP project managers are comprehensively trained to deliver consistent, high-quality performance from WSP management teams across the firm. For WSP, project excellence means consistently delivering high performing, technically excellent, and well-managed projects for our clients across all end markets. It is about keeping a level of engagement and support to ensure our vision remains focused on delivering the desired products. By demonstrating the value and efficiency that can be achieved, we build a collaborative and innovative environment for our teams to thrive. Our Project Execution Manual outlines policies, processes and procedures that are implemented in a consistent manner to ensure our projects meet budget and schedule while maintaining a high quality of product deliverables.

Project Execution Manual (PEM)



Quality Management Plan (QMP)

Project Manager, Michael Flood, and Deputy Project Manager, Catherine Prince, routinely manage resilient infrastructure programs. They will be supported by Jeff Baker, WSP's Quality Assurance Lead, to develop a comprehensive QMP that will specify:

- Communication protocols for all team members and subconsultants.
- Deliverable formats and standards for reliability, accuracy and reasonableness.
- Procedures for coordinating and synthesizing task requirements into a cohesive work plan and PMP.
- Guidance and protocols for safety and security compliance.
- Quality control activities and responsibilities for work plan execution.
- Procedures for measuring effectiveness of QMP directives, including continuous improvement activities.

Our QMP will be based on WSP's ISO 9001-2008 certified quality management system (QMS), which provides guidelines, standards and procedures for carrying out QA/QC activities through every project phase.

Project Management Plan (PMP)

The QMP serves as our "road map" for meeting or exceeding client expectations. The PMP that will address project specifics, such as:

- Project team organization, responsibilities and authorities.
- Work plan, schedule and budget goals, including expenditures and milestones.
- Project control requirements and procedures for verification, security and document control.
- Risk management plans to address anticipated outcomes requiring mitigation.

The team will prepare a project management plan (PMP) that will establish the manner and formats that will be used to interact with the City and other participants in the study. The PMP will satisfy the Solicitation requirement for an implementation plan and the creation of a project timeline with completion dates for each task, deliverable, and other milestones.

Task 1 also includes a compilation of the data needed to perform the VA reflecting the requirements defined in FS 380.093. Task 1 will focus on examining and detailing, 1) topographic data and 2) flood scenario-related data. It is expected that the Broward County Vulnerability Assessment Data will be utilized for physical characteristics of critical and significant assets.[1] Although here too the WSP team will examine the database to identify any gaps in needed data and information.

WSP will utilize as much of the recently developed Broward County data including the new Broward County groundwater elevation model and soon to be updated vulnerability assessments and resilience plans.

Acquire Background Data

Topographic data

Survey data – WSP will evaluate and analyze existing survey data including FDEM FEMA Florida Elevation Certificates, City-sourced Finished First Floor Elevations (FFEs) and survey data for selected critical assets available from the City, FDOT, County or SFWMD.

LiDAR, Digital Elevation Model (DEM) data – LiDAR data are critical inputs into the VA. The approach will use the results from the currently underway LiDAR mapping of Roadway infrastructure inventory (pending completion 2023), and the Lidar mapping and stormwater modeling for the 2017 stormwater master plan.

Flood scenario-related data

As much as possible, currently available flood scenario-related data will be utilized, especially that produced as part of the Broward County adaptation update. This includes data and information from NOAA's National Storm Surge Risk Maps, whose underlying data will need to be verified. In addition, Broward County updated its future flood risk model in 2020 that included reviewing gauge data for urban areas of the county for stations with reliable and consistent data sets, compiled LiDAR from the then available sources, refined model topography, and updated the land use forecasts. A calibrated model network was developed to forecast flood levels for the 10, 25, 50, 100, and 500-year floods with three-day rainfall events. NOAA Atlas 14 was used for rainfall depths with a SFWMD 3-day distribution. The City will provide other relevant data for this task, which will be reviewed to identify gaps that need to be filled to undertake the VA.

Target scenario years will be 2040 and 2070 (the same target scenario years used by Broward County).

According to the FDEP VA guidance, the following data is desired when conducting a VA.

Precipitation data – As noted above, Broward County updated its rainfall projection model three years ago, which leveraged NOAA Atlas 14 data. Projected three-day precipitation depths for different return period storms were estimated by applying multipliers based on the analysis. Also, as noted in the Solicitation, the United States Geological Survey (USGS) is developing a change factor that would be applied to NOAA Atlas 14 rainfall distribution curves to account for future climate variability in the study area. The USGS Geo Data Portal and National Hydrologic Model (NHM) Infrastructure can be used to compare different precipitation forecasts to establish precipitation ranges for future target years. Precipitation projection

1 This dataset includes airports, bridges, county bus terminals, ports, major roadways, marinas, rail facilities, wastewater treatment facilities and lift stations, stormwater treatment facilities and pump stations, freshwater facilities, water conveyance systems, electric facilities, hazardous and solid waste facilities, military installations, disaster debris management sites, schools, community centers, correctional facilities, disaster recovery centers, emergency medical service facilities, EOCs, fire stations, hospitals, police stations, Broward county government facilities, logistical staging areas, affordable housing, risk shelters, conservation lands, shorelines, parks, surface waters, wetlands, and historical and cultural assets.

data will include the 100- and 500-year, 24-hour rainfall event at a minimum.

Groundwater level data – WSP will coordinate with Broward County on obtaining the latest groundwater data and future forecasts that were part of its updated model for forecasting future flood risks. If necessary, groundwater level will be obtained from the Generalized Well Information System (GWIS), the South Florida Water Management District, and/or potentiometric surface maps developed by the USGS.

Sea level rise (SLR) projections – Sea level rise projection data will include the 2017 National Oceanic and Atmospheric Administration (NOAA) intermediate-high and intermediate-low projections for 2040 and 2070, at a minimum. WSP will discuss with the City the desire and need to use additional projections. Again, Broward County scenario data will be used for sea level projections. If necessary or desired, other projections would come from NOAA's Digital Coast website, Florida Flood Hub.

Tidal datums and tidal flooding – Broward County's model update used the latest data on tidal datums and tidal flooding for the target scenario years. This data will be used for this study as well.

Storm surge – Storm surge data for 2040 and 2070 are included in the Broward County model update and will be used here. We are aware that several sources of such projections are available, including the National Hurricane Center's Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model, and the USACE Coastal Hazards System South Atlantic Coastal Study (SACS). The WSP team has used the FEMA and FEMA+ approaches in recent studies for projecting storm surge levels. Storm surge data will be equal to or exceed the 100-year return period flood event.

Hydro stratigraphic information – Geology exerts significant control over the hydrologic response of a study area because of its control over the water table location. Across most of Florida, the Intermediate Aquifer System provides varying degrees of confinement to the underlying Floridan Aquifer System and controls the depth to the water table in the topmost aquifer. Each Water Management District maintains data related to the hydro stratigraphic units within its jurisdiction. The Broward County model update examined groundwater elevations and thus included hydro stratigraphic information as part of their study. This information will already be incorporated into their groundwater flooding results, which we will use.

River channel cross-section – Accurate data on river or stream cross sections, top of bank elevation, overbanks, and seasonal high-water stages are important in areas with major rivers and streams. This data will be part of the County's flood analysis, which will be used in this study.

Land use data – Future land use will contribute to the expected impacts and consequences of climate change-related disruptions. In addition, such data can be useful in providing more fidelity in the types of data analyses that can be conducted. For example, such data could be used to determine impacts to residential units versus commercial/ retail establishments. Or the data could be used to identify impacts to different levels of housing stock (e.g., low-income vs high-income). WSP will use the latest future land use map and the projected extent of impervious surface and directly connected impervious area as determined from the City's land use plan. In addition, the University of Florida's GeoPlan Center and the South Florida Water Management District have developed a future land cover database that will be useful.

Evapotranspiration data – Evapotranspiration (ET) losses constitute the second largest term in the water budget equation of any watershed in Florida. Such losses have been considered in the County's model update, and this include in the projections what this study will use.

In examining the data available, the WSP team will identify where that are data gaps. These gaps might be filled with surrogate data, or at a minimum the gaps would need to be identified as limiting factors in the VA analysis. WSP will recommend strategies to the City for dealing with these data gaps.

The F.S. 380.093, F.S/FDEP define four asset types as part of a VA, 1) transportation assets and evacuation routes, 2) critical infrastructure, 3) critical community and emergency facilities, and 4) natural/cultural/ historic assets. Geographic Information System (GIS) metadata will include a layer for each of these four asset types (note: metadata will adhere to the Resilient Florida Program's GIS Data Standards and raw data sources will be defined within the associated metadata).

Deliverables:

- Written PMP, including a project implementation plan and timeline (to be approved by the City);
- Technical report to outline the data compiled and

findings of the gap analysis in MS Word and PDF electronic formats;

- Summary report to include recommendations to address the identified data gaps and actions taken to rectify them, if applicable; and GIS files with appropriate metadata of the data compiled,
- All project meetings' agendas, meeting minutes, project documents (in original electronic format and PDFs), and invoices in appropriate form complying to City's consulting agreement and State's grant requirements

Task 2: Critical Asset Inventory

The WSP team will use the flooding projections (inland as well as coastal) to identify the critical and regionally significant assets that are potentially impacted by flooding and sea level rise. The initial screening assessment will be conducted using the flood scenarios to indicate different flooding risk levels. The GIS-based analysis will allow the analysis to superimpose the location and characteristics of critical and regionally significant assets on locations of projected future flooding. Where such data intersect, there is a potential for flood damage (the degree of damage will be estimated in Task 3). GIS layers by flood scenario will indicate potentially vulnerable areas that will require more detailed assessment. The GIS files and associated metadata will adhere to the Resilient Florida Program's GIS Data Standards.

Given that the Task 4 exposure analysis will rely partially on elevation data (both for critical assets and water levels), it will be important to know asset elevations and thus have access to elevation certificates. Part of the data collection process will be to make sure such elevation data is incorporated into the GIS layers.

The WSP team will discuss with the City the desirability and ability (budget-wise) to examine assets such as roads and historical properties that are not classified as critical as per State statute. For example, WSP vulnerability assessments in other communities have often identified local roads that provide important secondary access to important community facilities (such as hospitals), which could serve an important role in an emergency.

Deliverables:

- List or spreadsheet of critical and regionally significant assets that may be impacted by flooding and sea level rise (and which flood scenario(s) impacts each asset), prioritized by area or immediate need, containing the critical assets attributes required by Section 380.093, F.S
- GIS files and associated metadata complying to State requirements; and
- List of regionally and critically significant assets which lack elevation certificates for asset types where elevation certificates are appropriate.

Task 3: Surveying for Elevation Certificates

WSP surveyors will measure the required elevations for the critical facilities/assets identified by the project team. The survey team will capture the site data for each facility and complete the required Federal Emergency Management Agency (FEMA) Elevation Certificate form. This data will include items such as building type, building floor elevations, adjacent ground elevations and survey benchmarks utilized, including vertical datum.

Each form will be completed prepared under the responsible charge of a licensed Florida Surveyor and Mapper. Approximately 16 elevation certificates can be accomplished for the $25,000.00 allowance; anything above that would be $1,600.00 per elevation certificate (see Cost Proposal (page 68)).

Deliverables (all meeting state and grant requirements):

- Written list of critical and regionally significant assets with completed elevation certificates (including the address, asset type, and asset class information);
- Documentation of transmittal of the copies of the Elevation Certificates submitted to the Florida Department of Emergency Management, as required by Section 472.0366(2), F.S. The completed elevation certificate documents must be signed and sealed by a Florida-registered Professional Surveyor and Mapper

Task 4: Exposure Analysis

In order to develop a vulnerability assessment, and in particular the Task 5 sensitivity analysis, one must know the projected depth of water for different assumed scenarios. Task 4 uses the information from Tasks 1 to 3 to determine the depth of water throughout the city for each scenario (sea level rise, storm surge, and/or flood scenario). The Broward County model update will have the latest 2040 and 2070 projections for different tidal conditions, precipitation levels, groundwater, and sea level rise. These projections can be used within a GIS foundation to identify the exposure of critical assets to different hazards.

As per 380.093, F.S., the following data will be included in the assessment:

Tidal flooding: The Broward County analysis used thresholds for future high tide flooding established by FDEP and shows geographically the number of tidal flood days expected for each scenario and planning horizon.

Current and future storm surge flooding: The County model update whose results will be used here considered an initial storm surge event that exceeded the current 100-year flood event. Higher frequency storm events will be analyzed to understand the exposure of all critical assets.

Rainfall-induced flooding: The County model used spatiotemporal analysis or existing hydrologic and hydraulic modeling results. Future boundary conditions were be modified to consider sea-level rise and high tide conditions (as applicable/practicable).

Compound flooding: This hazard represents a combination of tidal, storm surge, and rainfall-induced flooding (determined by overlapping GIS layers for each). The scenarios used in the County model update provided the data to assess the exposure to compound flooding. This data will be used in this study.

Characteristics of the exposure analysis, which satisfy FDEP requirements, include the following:

- All City critical assets will be included.
- The most recent publicly available DEM will be used.
- All analyses will use the North American Vertical Datum of 1988 (NAVD88).
- Two local sea-level rise scenarios, the 2017 NOAA Intermediate-Low and Intermediate-High sea-level rise projections, will be used.
- Two planning horizons, 2040 and 2070, will be used.
- Sea level data for the City will be interpolated between the two closest NOAA tide gauges, which are Trident Pier and Key West sea gauges.
- For this initial exposure screening, a modified bathtub model will be used, including the approach of modifying those areas shown as flooded (due to elevation) but that have no hydrologic connection to a water source.

The WSP team will develop a draft VA report that documents the technical approach, the models and scenarios used, and the flood depth for each scenario by horizon year. As before, the GIS files and metadata will adhere to the Resilient Florida Program's GIS Data Standards.

Deliverables:

- Written draft VA report providing details on the modeling process, type of models used, and resulting tables and maps illustrating flood depths for each flood scenario; and
- GIS files showing results of the exposure analysis for each flood scenario as well as the appropriate metadata that identifies the methods used to create the flood layers.

Task 5: Sensitivity Analysis

The purpose of the Task 5 sensitivity analysis is to determine the degree to which flood inundation levels will result in some level of damage to an asset. The WSP approach to this analysis is to develop depth-damage functions that characterize the level of damage associated with different levels of inundation. This analysis can be conducted at different levels of detail. For example, asset types could be aggregated into one asset class and damage indicators used to reflect the level of damage that will occur given flood elevations. Thus, for example, one could designate damage thresholds such as anything over 1 foot inundation as being considered major damage. One could also provide more detailed analysis on the most critical structures or facilities given damage cost-related characteristics. For example, for multi-story buildings, one could distinguish between structures that have HVAC and power sources on lower elevations. For bridges, one could distinguish bridges by age. The WSP team will recommend for each critical and regionally significant asset type found to be exposed to possible flooding how the depth-damage functions will be defined (this will depend largely on how much detailed data are available to the City). Figure 1 shows a similar approach to that suggested as applied by WSP in Pinellas County.

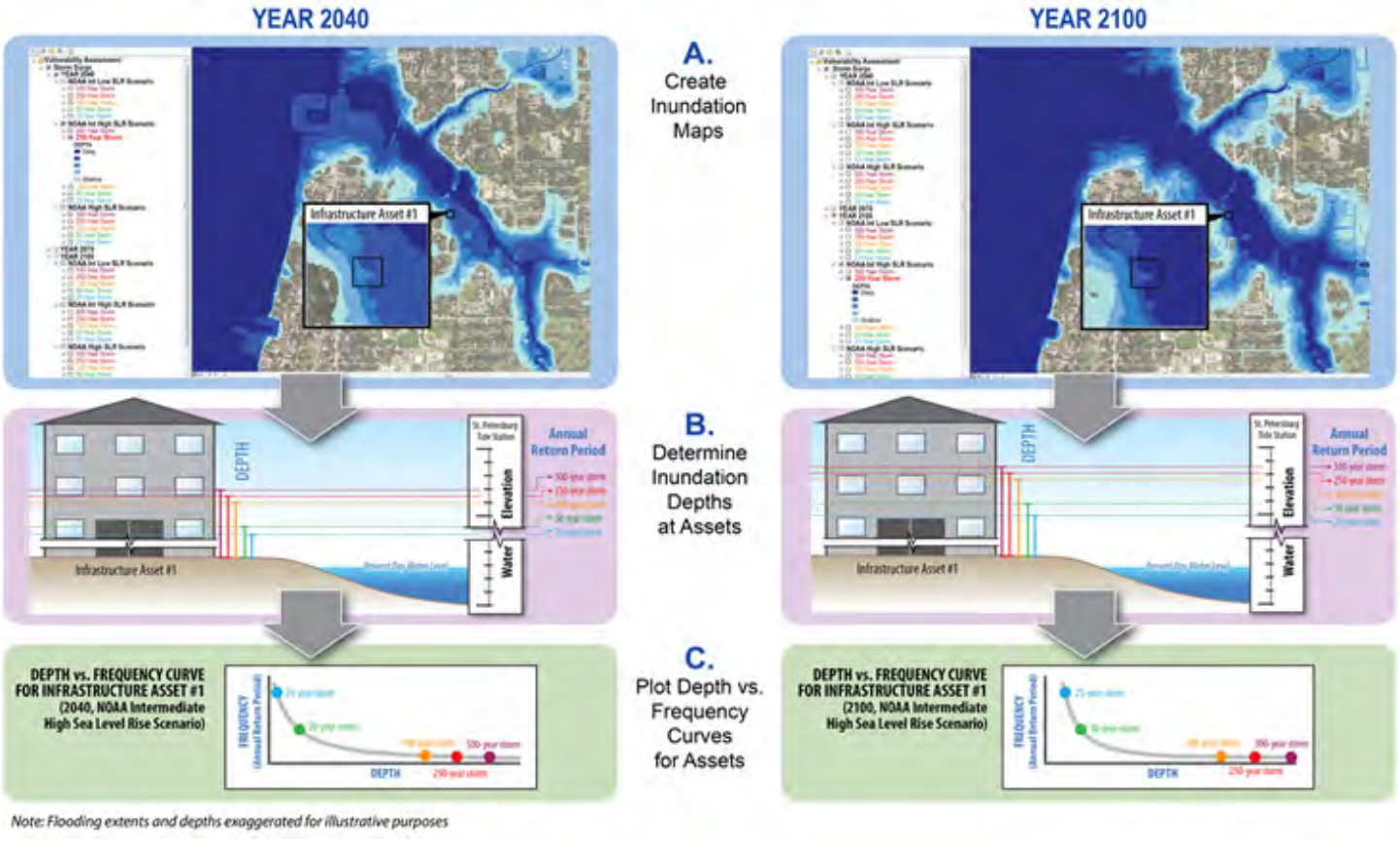


Figure 1: Example Depth-Damage Functions for Sensitivity Analysis, Pinellas County, 2040, 2100

The results of the sensitivity analysis will be an indication of the impact of flood severity on each asset class at the aggregate level (and possibly including more refined categorizations) for each flood scenario. As per FDEP guidance, a risk level will be assigned to areas of the city based on percentages of land area inundated and number of critical assets affected. These areas could be geographic in terms of neighborhood and commercial/ retail districts or identified more generally as investment categories or focus areas as found in the Community Investment Plans. WSP has aggregated such risk indicators in other studies by Census tract, planning subareas, and neighborhoods. Team members will discuss the spatial units to be used in presenting the risk indicators.

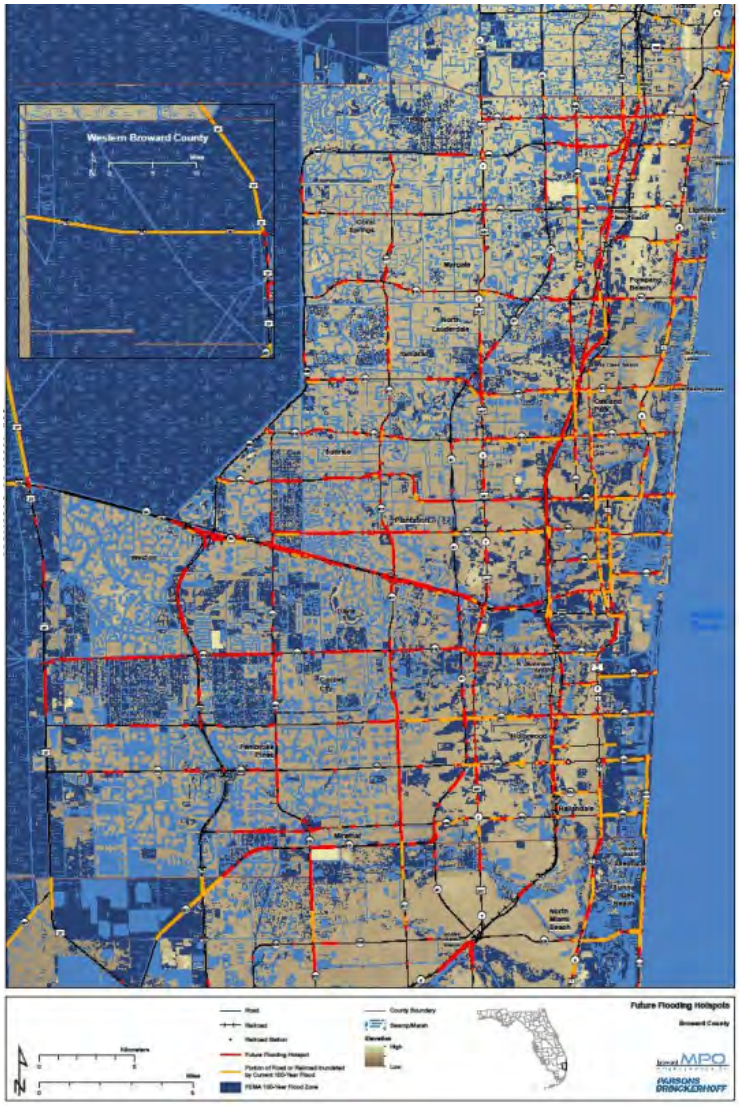


Figure 2: Future Flooding Hotspots, Broward County

Typically, VAs utilize "heat" maps or tables to indicate levels of risk. That is, the level of risk is indicated by color—red is high risk and green is low risk, with different shades indicating intermediate levels of risk. The WSP team has used such approaches before (see Figure 2). This approach will be used in this VA as well.

The WSP team will discuss with the City the desirability and ability (budget-wise) to include in the sensitivity analysis assets such as roads and historical properties that are not classified as critical as per State statute. For roadways, the analysis will identify locations and square feet of pavement surface susceptible to flooding for different scenarios.

Deliverables:

- Written draft VA report with details on exposure and sensitivity analysis findings along with visual presentation of the data via maps and tables, based on the statutorily required scenarios and standards; and
- Initial list of critical and regionally significant assets impacted by flooding (and which flood scenario(s) impacts each asset), prioritized by area or immediate need and must identify.

Task 6: Final Vulnerability Assessment (VA) Report, Maps, and Tables

Task 6 will produce a final VA along with associated maps and tables. The final VA will include the results of Tasks 4 and 5 and will summarize the risks by asset category and by parcel inundation (and other indicators identified during the process) found by the assessment process. The final report will identify the critical and regionally significant assets that may be impacted by flooding and sea-level rise. For each, the flood scenario(s) impacting the asset will be noted.

WSP's experience with VA reports is that the more useful and understandable reports are those that heavily use visual graphic aids in conveying information and key messages. As noted above, "heat" maps are one way of illustrating potential vulnerabilities of key facilities or assets. Another way is to organize the vulnerability assessment by geographic areas that can be easily related to by community residents. Our experience is that a neighborhood designation usually generates a lot of interest in the results of the assessment. The VA will be written and structured in such a way that the important threats to Ft. Lauderdale and it neighborhoods are clearly conveyed.

A VA Compliance Checklist Certification will be prepared and signed. GIS files and associated metadata will meet the Resilient Florida Program's GIS Data Standards, and raw data sources will be defined within the associated metadata.

In addition to the deliverables requested in the Solicitation, the WSP team will prepare a memorandum to the City identifying which critical assets or regionally significant projects would be eligible for Federal or State grant funding.

Deliverables:

- Written draft and Final VA Report (details on results and conclusions, including illustrations via maps and tables, based on the statutory-required scenarios and standards in s. 380.093, F.S.), and a one-hour presentation to City staff;
- Final list of critical and regionally significant assets impacted by flooding (including which flood scenario(s) impacts each asset), prioritized by area or immediate need;
- Electronic mapping data used to illustrate flooding and sea level rise impacts identified in the VA, and geospatial data in electronic file format and GIS metadata; and
- Signed VA Compliance Checklist Certification
- Technical memorandum on eligible projects for grant funding.

Task 7: Partial Adaptation Plan

The project will lead to the development of a partial Adaptation Plan (AP). The AP will be consistent with the requirements of the Florida Adaptation Planning Guidebook. The results of Tasks 1 to 6 provide much of the material that will go into the AP, including identifying the needs for making critical and regionally significant assets more resilient. The final steps in developing an AP include: assessment of adaptive capacities, prioritization of adaptation needs, identification of adaptation strategies for the City's most vulnerable assets, and integration into existing community plans.

The WSP team has found in other studies that one of the most important steps a community can take to implement the results of a vulnerability assessment is to tie the results to other community planning and decision-making processes. Thus, for the City this would include examining the linkage to the Comprehensive Plan, the City's Vision (Fast Forward), the Sustainability Action Plan, master plans, and the Community Investment Plans. Team members will recommend how the projects listed in the Adaptation Plan can link to and fit into master plans and Community Investment Plans. This process would include identifying those projects already proposed with resilience strategies and those that should consider including such strategies as part of project development. Team members will also look at City priorities for adaptive investments that could be undertaken as part of the regional transportation planning process.

The City might also consider linking the VA to the Local Mitigation Strategy (LMS) such that future updates of the LMS will have the VA results to draw upon.

Task 7 will assess relevant adaptive capacities for implementing an AP, including administrative, regulatory, and planning capabilities; fiscal capacity; and the degree to which infrastructure systems and facilities can adapt to changing environmental conditions. Except for the infrastructure category, team members will identify the City's adaptive capacities by examining records documenting past investment decisions, fiscal data, and through interviews with key City officials.

The Adaptation Planning Guidebook also recommends extensive public engagement in developing a final Plan. The WSP team will recommend an engagement strategy for taking the partial Adaptation into a Final Plan.

Deliverables:

- Written partial Adaptation Plan for the most vulnerable critical assets, including addressing capacity and needs for those assets

Value Add Scope

The WSP team will complete the above listed tasks for $150K. We will work with you to identify the value-add scope aligned with the City's goals and to help access implementation funding from state (FDEP), and federal (grant funding from IIJA, post-disaster funding from FEMA, HUD). Options that the City may consider are 1) Develop prioritization criteria for City-owned roadways and other asset types, 2) Preliminary design strategies to integrate resilience into a pilot 1-mile roadway (with stormwater infrastructure), or a city-owned building facility, 3) Summary of appropriate federal grants to design and construct the identified vulnerable assets.

Scheduling Methodology

The WSP Team understands how important meeting and exceeding schedules is to projects that are funded by state and federal resilience grant programs. **FDEP is accepting Resilient Florida implementation grant application between July and September 2023. Our compressed schedule reflects the need to update the City's Vulnerability Assessment to access the design and construction funding.** Thus, compiling as much data as possible prior to 2023 project applications is critical to assist with 2023 FDEP applications.

Other funding from FEMA and HUD for resilient infrastructure funding for Hurricane Ian will be issued in 2023 through at least 2026 and beyond. Thus, the more robust the City's vulnerability assessment and adaptation plans are, the better positions the City will be in to optimize the resilient infrastructure funding that will be awarded to the state of Florida. WSP's extensive knowledge of schedule development and how to expedite tasks on the critical path will greatly enhance the ability to leverage resilient infrastructure funding.

There are two Project Management Professional (PMP) certified key staff on the organization chart (Catherine Prince, PMP and Maria Watt, PMP). Certified PMP's know how to compress the schedule using fast-tracking techniques to achieve high quality results on an expedited basis. By conducting activities in a parallel fashion without compromising quality accelerates the project schedule and can achieve better outcomes. Certified PMPs also know how to work a critical path schedule to ensure optimum project performance. WSP also has over 1,400 employees in Florida alone and close to 16,000 nationwide. Thus, WSP is also capable of crashing the schedule and applying more resources to a given critical task to accomplish project deliverables on an expedited basis. With the varied techniques, WSP has a deep bench strength of resources to ensure we will exceed your expectations.

With three former City employees who worked at Public Works and Transportation and Mobility departments, we have a strong understanding of 1) data availability and gaps, 2) city departments priorities and required coordination, 3) coordination with Broward County on its ongoing climate vulnerability assessment, and its climate modeling methodology.

Lastly, the WSP team completed over 20 Vulnerability Assessments compliant with Florida Statutes and have a zero-learning curve. Therefore, we can deliver expeditiously within 120 days of NTP.

Fort Lauderdale Vulnerability Assessment Schedule

Task Initiation | Key Milestone | Implementation

Months from NTP	1		2		3		4	
Calendar Days from NTP	15	30	45	60	75	90	105	120
Project Management								
Task 1: Acquire Background Data								
Task 2: Critical and Regionally Significant Asset Inventory								
Task 3: Survey Elevation Certificates								
Task 4: Exposure Analysis								
Task 5: Sensitivity Analysis								
Task 6: Final Vulnerability Assessment Report								
Task 7: Partial Adaptation Plan								

Current Workload

WSP leads the way in planning and delivering resilient infrastructure for current and future coastal sea level rise, storm events and inland flooding. We help clients proactively address environmental changes by strengthening what is currently in place and weaving resilience into new plans and designs.

Our proposed team is well-prepared to advise on floods, droughts, hurricanes/tropical storms and other changing climate threats. Our unique blend of expertise and experience incorporates lessons learned and best practices from high-profile, national resiliency projects, including flood control, changing climate adaptation, climate resiliency planning and design for coastal communities. We will collaborate with the County to develop cost-effective solutions that will protect citizens and infrastructure.

Our vast risk/vulnerability assessment and resilient infrastructure design/implementation experience has helped hundreds of clients tackle climate-related challenges over the past two decades. We will advise the City on capital planning and protecting valuable assets while guiding you through careful consideration of interdependent systems and asset threats toward stronger, more adaptable functions that will allow life and business in the City to carry on with less interruption and increased reliability.

Staffing and resource requirements for numerous WSP contracts typically surge and decline rapidly. The City needs a consultant nimble enough to rapidly ramp up staff to meet expedited deliverables; to ramp back down during client or funding application reviews; and then to surge to implement projects, all while maintaining consistent, reliable quality control. WSP's depth of professional resources across Florida having over 1,400 staff in the state, our 3rd-party audited quality processes, and a workforce approach proven scalable to match the need are all critical factors in delivering professional capacity. These advantages ensure we are positioned to manage the concurrent, expedited and complex resilient infrastructure projects. WSP works constantly under contracts like this, where project needs range from dormant to urgent. In response, our staffing systems are designed to efficiently dedicate resources where needed at peak times, and shift them back to other programs when needs decrease. The chart below highlights WSP's key staff dedicated to this project with a proven ability to implement the scope of services required under this project.

Michael Flood | Project Manager
- leads the national resilience practice for WSP
- managed over 10 vulnerability studies in Florida
- managed over 50 vulnerability studies nation-wide

WSP
Availability: 70%
Years of Experience: 28
Date Available: NTP

Catherine Prince, PMP, LEED AP STP + | Deputy Project Manager
- former Fort Lauderdale staff and understands the City's processes and procedures
- focused on transportation prioritization and adaptation strategies

WSP
Availability: 90%
Years of Experience: 18
Date Available: NTP

Chris Dorney, PhD, AICP | Vulnerability and Risk Assessment
- engaged in extreme weather and climate change adaptation planning for 10+ years
- developed and implemented procedures for incorporating climate change adaptation into the project development process

WSP
Availability: 80%
Years of Experience: 18
Date Available: NTP

Maria Watt, PE, PMP | Mitigation and Adaption Strategies, Engineering Support
- experience developing adaptation and restoration strategies for impacted infrastructure
- developed green and sustainable infrastructure features on major coastal restoration projects

WSP
Availability: 90%
Years of Experience: 37
Date Available: NTP

Alec Bogdanoff, PhD | Policy and Funding Support
- developed policy and strategy supporting Resilient Florida Program
- developed funding strategies for numerous Florida clients

Brigaza
Availability: 70%
Years of Experience: 13
Date Available: NTP

SECTION 5
References

Similar References

Our strong commitment to client service is reflected by our great references and our repeat clients, as well as our ability to be reselected for on-call contracts and individual projects. Below is a table with client contact information for local projects with a similar scope as listed in this RFQ.

Government References

Client/Project Name	Contact Information	Firm Contact	Year Completed	Construction Cost (Estimated/Actual)	Description of Work
Monroe County, Sea-Level Rise Shoreline Stabilization	Rhonda Haag 305-395-9928 haag-rhonda@monroecounty-fl.gov 102050 Overseas Highway Key Largo, FL 33037	Greg Corning, WSP	2022	$20 million, as estimated and within contingency	Sea Level Rise, shoreline resilience, stormwater engineering
Broward County, MPO	James Cromar 954-876-0038 cromarj@browardmpo.org 100 West Cypress Creek Rd, 6th Floor, Suite 650 Fort Lauderdale, FL 33309	Michael Flood, WSP	2016	N/A	Regional vulnerability assessment, transportation assets prioritization
Pinellas County, County Vulnerability Assessment	Hank Hoddee 727-464-3486 hhodde@pinellascounty.org 315 Court Street, Suite 601, Clearwater, FL 33756	Michael Flood, WSP	2022	$550K/$550K	Vulnerability Assessment, Adaptation Strategies, Sea Level Rise, Storm Surge, Tidal Impacts

"(WSP) has demonstrated a high level of professional knowledge, integrity, and client service, which has met or exceeded our expectations. The firm has played an integral part in the success of hitting all milestones established by the FDEP. (WSP) has been able to provide all services in accordance with our schedule."

Todd McGee, Former Construction Project Manager
FDEP, Bureau of Design & Construction

SECTION 6
Minority/Women (M/WBE) Participation

M/WBE Efforts

WSP's commitment to diversity and inclusion is a major part of our culture. We take pride in our ability to develop partnerships with a wide range of professional service firms from across the country and throughout Florida.

Our commitment to M/WBE owned business enterprises extends beyond project requirements of meeting utilization goals. We strive for meaningful partnerships and relationships and creating opportunities on an ongoing basis to ensure small/minority/women/disadvantaged businesses get a fair share and grow their business.

Our local team of subconsultants were selected based on their strong local knowledge, previous work with local municipalities and working relationships with WSP on similar assignments. They are all part of the local South Florida community and will provide valuable knowledge and experience for the delivery of this project.

Our commitment to providing opportunities to these businesses' stems, not only from our desire to meet or exceed our clients' goals, but from a belief that the use of such businesses helps us to fulfill our guiding principles of being locally dedicated with an international scale and fostering collaboration in everything we do. In sum, commitment to diversity furthers our mission of providing services to transform the built environment and restore the natural environment.

Our Commitment

Committed to Small/Minority Firms and the Community

We provide meaningful opportunities and enable maximum participation when subconsultants are needed by:

- Providing supportive services for emerging small/minority business firms
- Supporting achievement of the City's small/minority participation goals
- Establishing coaching components that help meet their development goals
- Assisting small/minority firms with each project step to set and satisfy goals throughout the course of a contract

SECTION 7
Subcontractors

Identification of Subcontractors

Our strategy is to build the best possible team to fully satisfy the needs of our clients. Our subconsultants are highly qualified, local firms that have extensive knowledge and past experience with similar projects throughout South Florida.

By combining our subconsultants' collective talents with WSP's specialized personnel, we will deliver all the services required in the RFQ and meet the City's expectations for on time, on budget performance. Below we highlight our partners to be utilized during the term of this contract.

BRIZAGA

Brizaga is a certified CBE/SBE and strategic consulting firm based in Fort Lauderdale. Specializing in climate and resilience education and outreach, civil and coastal engineering, and community resilience planning, Brizaga is uniquely equipped with two premier resilience experts in the State of Florida. They take a highly sensitive approach to each project, not only to examine the benefits that must be achieved as part of implementation, but to truly understand the various climate and flooding scenarios, the likelihood of their occurrences, and their impact on the triple bottom line. Built to solve complex problems by leveraging science, communications, engineering, and policy, Brizaga's vast experience in grant writing can assist with funding to develop programs, support equity, and align with the National Flood Insurance Program to benefit the community. They are able to present information in an equitable and dynamic way with a variety of tools to engage the audience, leading to greater participation and exchange of ideas.

THE CORRADINO GROUP

The Corradino Group has provided engineering design, planning, environmental and construction management services to the government and the private sector for over 50 years. The Corradino Group maintains a staff of 200+ employees with extensive experience in successfully completing both small- and large-scale projects, many of which are complex.

- **Comprehensive Planning**. The planning team provides expertise and experience at preparing comprehensive land use and zoning studies and recommendations as may be needed by the City Planning and Zoning Department.
- **Compliance and Regulatory Review for the City.** The Corradino Group frequently serve as planning directors and staff in many municipalities; we are aware of any regulatory requirements that the City needs to comply. Also, they have created checklists for development review processes and other procedures.
- **Long Range Planning and Policy.** The Corradino Group has written entire brand-new comprehensive plans and zoning codes, reviewed and revised older comprehensive plans and zoning codes, and made periodic amendments to these as needed. The firm has also worked extensively in developing Evaluation and Appraisal Reports (EARs) as well as EAR-based amendments.

SECTION 8
Required Forms

Proposal Certification

CITY OF FORT LAUDERDALE BID/PROPOSAL CERTIFICATION

Please Note: It is the sole responsibility of the bidder/proposer to ensure that their response is submitted electronically through the City's on-line strategic sourcing platform prior to the bid opening date and time listed. Paper bid submittals will not be accepted. All fields below must be completed. If the field does not apply to you, please note N/A in that field.

If you are a foreign corporation, you may be required to obtain a certificate of authority from the department of state, in accordance with Florida Statute §607.1501 (visit http://www.dos.state.fl.us/).

Company: (Legal Registration) WSP USA Inc. EIN (Optional): 11-1531569

Address: One Penn Plaza, 4th Floor

City: New York State: NY Zip: 10119

Telephone No.: 410-246-0528 FAX No.: N/A Email: michael.flood@wsp.com

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Delivery: Calendar days after receipt of Purchase Order **(section 1.02 of General Conditions)**: _____

Total Bid Discount **(section 1.05 of General Conditions)**: _____

Check box if your firm qualifies for DBE **(section 1.09 of General Conditions)**: ❑

ADDENDUM ACKNOWLEDGEMENT - Proposer acknowledges that the following addenda have been received and are included in the proposal:

Addendum No.	Date Issued	Addendum No.	Date Issued	Addendum No.	Date Issued	Addendum No.	Date Issued
1	4/5/2023						

VARIANCES: If you take exception or have variances to any term, condition, specification, scope of service, or requirement in this competitive solicitation you must specify such exception or variance in the space provided below or reference in the space provided below all variances contained on other pages within your response. Additional pages may be attached if necessary. No exceptions or variances will be deemed to be part of the response submitted unless such is listed and contained in the space provided below. The City does not, by virtue of submitting a variance, necessarily accept any variances. If no statement is contained in the below space, it is hereby implied that your response is in full compliance with this competitive solicitation. If you do not have variances, simply mark N/A.

WSP requests the opportunity to discuss, negotiate and agree to mutually agreeable terms that reflect reasonable, customary, and industry standards.

The below signatory hereby agrees to furnish the following article(s) or services at the price(s) and terms stated subject to all instructions, conditions, specifications addenda, legal advertisement, and conditions contained in the bid/proposal. I have read all attachments including the specifications and fully understand what is required. By submitting this signed proposal, I will accept a contract if approved by the City and such acceptance covers all terms, conditions, and specifications of this bid/proposal. The below signatory also hereby agrees, by virtue of submitting or attempting to submit a response, that in no event shall the City's liability for respondent's direct, indirect, incidental, consequential, special or exemplary damages, expenses, or lost profits arising out of this competitive solicitation process, including but not limited to public advertisement, bid conferences, site visits, evaluations, oral presentations, or award proceedings exceed the amount of Five Hundred Dollars ($500.00). This limitation shall not apply to claims arising under any provision of indemnification or the City's protest ordinance contained in this competitive solicitation.

Submitted by:

Michael Flood
Name (printed)


Signature

04/20/2023
Date

National Resiliency Lead
Title

Cost Proposal

SECTION VI - COST PROPOSAL PAGE

Proposer Name: WSP USA Inc.

Proposer agrees to supply the products and services at the prices bid/proposed below in accordance with the terms, conditions and specifications contained in this RFP.

Cost to the City: Contractor shall quote firm, fixed, costs for all services/products identified in this request for proposal. These firm fixed costs for the project include any costs for travel and miscellaneous expenses. No other costs will be accepted.

Notes:

Attach a breakdown of costs including but not limited to labor, equipment, materials, and parts.

1. Vulnerability Assessment for City of Fort Lauderdale		$125,000.00
2. Number of Elevation Certificates being provided for the $25,000 allocation.	16	
3. Additional Elevation Certificates (Cost per Certificate)* *(assuming a minimum of 4 additional certificates)		$1,600.00
Total Project Cost		**$**150,000.00

Notes:

The additional $10,000 in the grant budget can be potentially be utilized for the following optional items if desired:

- **Develop prioritization criteria for City-owned roadways and other asset types,**
- **Preliminary design strategies to integrate resilience into a pilot 1-mile roadway (with stormwater infrastructure), or a city-owned building facility,**
- **Summary of appropriate federal grants to design and construct the identified vulnerable assets**

Submitted by:

Michael Flood
Name (printed)


Signature

04/20/2023
Date

National Resiliency Lead
Title

Non-Collusion Statement

NON-COLLUSION STATEMENT

By signing this offer, the vendor/contractor certifies that this offer is made independently and *free* from collusion. Vendor shall disclose below any City of Fort Lauderdale, FL officer or employee, or any relative of any such officer or employee who is an officer or director of, or has a material interest in, the vendor's business, who is in a position to influence this procurement.

Any City of Fort Lauderdale, FL officer or employee who has any input into the writing of specifications or requirements, solicitation of offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement.

For purposes hereof, a person has a material interest if they directly or indirectly own more than 5 percent of the total assets or capital stock of any business entity, or if they otherwise stand to personally gain if the contract is awarded to this vendor.

In accordance with City of Fort Lauderdale, FL Policy and Standards Manual, 6.10.8.3,

> 3.3. City employees may not contract with the City through any corporation or business entity in which they or their immediate family members hold a controlling financial interest (e.g., ownership of five (5) percent or more).
>
> 3.4. Immediate family members (spouse, parents, and children) are also prohibited from contracting with the City subject to the same general rules.

Failure of a vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the City Procurement Code.

NAME	RELATIONSHIPS
N/A	N/A

In the event the vendor does not indicate any names, the City shall interpret this to mean that the vendor has indicated that no such relationships exist.

Authorized Signature	National Resiliency Lead Title
Michael Flood Name (Printed)	04/20/2023 Date

Rev 09-2022

Non-Discrimination Certification Form

CONTRACTOR'S CERTIFICATE OF COMPLIANCE WITH NON-DISCRIMINATION PROVISIONS OF THE CONTRACT

The completed and signed form should be returned with the Contractor's submittal. If not provided with submittal, the Contractor must submit within three business days of City's request. Contractor may be deemed non-responsive for failure to fully comply within stated timeframes.

Pursuant to City Ordinance Sec. 2-17(a)(i)(ii), bidders must certify compliance with the Non-Discrimination provision of the ordinance.

A. Contractors doing business with the City shall not discriminate against their employees based on the employee's race, color, religion, gender (including identity or expression), marital status, sexual orientation, national origin, age, disability, or any other protected classification as defined by applicable law.

Contracts. Every Contract exceeding $100,000, or otherwise exempt from this section shall contain language that obligates the Contractor to comply with the applicable provisions of this section.

The Contract shall include provisions for the following:

(i) The Contractor certifies and represents that it will comply with this section during the entire term of the contract.

(ii) The failure of the Contractor to comply with this section shall be deemed to be a material breach of the contract, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.

Authorized Signature

Michael Flood, National Resiliency Lead

Print Name and Title

4/20/2023

Date

Local Business Preference (LBP)

LOCAL BUSINESS PREFERENCE

Section 2-199.2, Code of Ordinances of the City of Fort Lauderdale, (Ordinance No. C-12-04), provides for a local business preference.

In order to be considered for a local business preference, a bidder must include the Local Business Preference Certification Statement of this ITB, as applicable to the local business preference class claimed **at the time of bid submittal.**

> Upon formal request of the City, based on the application of a Local Business Preference the Bidder shall, within ten (10) calendar days, submit the following documentation to the Local Business Preference Class claimed:

A) Copy of City of Fort Lauderdale current year business tax receipt, **or** Broward County current year business tax receipt, **and**

B) List of the names of all employees of the bidder and evidence of employees' residence within the geographic bounds of the City of Fort Lauderdale or Broward County, as the case may be, such as current Florida driver license, residential utility bill (water, electric, telephone, cable television), or other type of similar documentation acceptable to the City.

Failure to comply at time of bid submittal shall result in the bidder being found ineligible for the local business preference.

THE COMPLETE LOCAL BUSINESS PREFERENCE ORDINANCE MAY BE FOUND ON THE CITY'S WEB SITE AT THE FOLLOWING LINK:
https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2AD_ARTVFI_DIV2PR_S2-186LOBUPR

Definitions: The term "Business" shall mean a person, firm, corporation or other business entity which is duly licensed and authorized to engage in a particular work in the State of Florida. Business shall be broken down into four (4) types of classes:

1. Class A Business – shall mean any Business that has established and agrees to maintain a permanent place of business located in a non-residential zone and staffed with full-time employees within the limits of the City **and** shall maintain a staffing level of the prime contractor for the proposed work of at least fifty percent (50%) who are residents of the City.

2. Class B Business - shall mean any Business that has established and agrees to maintain a permanent place of business located in a non-residential zone and staffed with full-time employees within the limits of the City **or** shall maintain a staffing level of the prime contractor for the proposed work of at least fifty percent (50%) who are residents of the City.

3. Class C Business - shall mean any Business that has established and agrees to maintain a permanent place of business located in a non-residential zone **and** staffed with full-time employees within the limits of Broward County.

4. Class D Business – shall mean any Business that does not qualify as either a Class A, Class B, or Class C business.

Local Business Preference (LBP)

LOCAL BUSINESS PREFERENCE CERTIFICATION STATEMENT

The Business identified below certifies that it qualifies for the local business price preference classification as indicated herein, and further certifies and agrees that it will re-affirm its local preference classification annually no later than thirty (30) calendar days prior to the anniversary of the date of a contract awarded pursuant to this ITB. Violation of the foregoing provision may result in contract termination.

(1) _____ is a **Class A** Business as defined in City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. A copy of the City of Fort Lauderdale current year Business Tax Receipt **and** a complete list of full-time employees and evidence of their addresses shall be provided within 10 calendar days of a formal request by the City.
Business Name

(2) _____ is a **Class B** Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. A copy of the Business Tax Receipt **or** a complete list of full-time employees and evidence of their addresses shall be provided within 10 calendar days of a formal request by the City.
Business Name

(3) WSP USA Inc. is a **Class C** Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. A copy of the Broward County Business Tax Receipt shall be provided within 10 calendar days of a formal request by the City.
Business Name

(4) _____ requests a **Conditional Class A** classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent shall be provided within 10 calendar days of a formal request by the City.
Business Name

(5) _____ requests a **Conditional Class B** classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent shall be provided within 10 calendar days of a formal request by the City.
Business Name

(6) _____ is considered a **Class D** Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186 and does not qualify for Local Preference consideration.
Business Name

BIDDER'S COMPANY: WSP USA Inc.

AUTHORIZED COMPANY PERSON: Michael Flood  4/20/2023
PRINT NAME SIGNATURE DATE

Disadvantaged Business Enterprise Preference (DBEP)

DISADVANTAGED BUSINESS ENTERPRISE (DBE) PREFERENCE

Section 2-185, Code of Ordinances of the City of Fort Lauderdale, provides for a disadvantaged business preference.

In order to be considered for a DBE Preference, a bidder must include a certification from a government agency, as applicable to the DBE Preference class claimed **at the time of bid submittal**.

Upon formal request of the City, based on the application of a DBE Preference the Bidder shall, within ten (10) calendar days, submit the following documentation to the DBE Class claimed:

A) Copy of City of Fort Lauderdale current year business tax receipt, **or** Broward County current year business tax receipt, **or** State of Florida active registration **and/or**

B) List of the names of all employees of the bidder and evidence of employees' residence within the geographic bounds of the City of Fort Lauderdale or Broward County, as the case may be, such as current Florida driver license, residential utility bill (water, electric, telephone, cable television), or other type of similar documentation acceptable to the City.

Failure to comply at time of bid submittal shall result in the bidder being found ineligible for the disadvantaged business preference.

THE COMPLETE DBE PREFERENCE ORDINANCE MAY BE FOUND ON THE CITY'S WEB SITE AT THE FOLLOWING LINK: https://www.fortlauderdale.gov/home/showpublisheddocument?id=56883

Definitions

a. The term "disadvantaged class 1 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the city, and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

b. The term "disadvantaged class 2 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business within the limits of the city with a full-time employees and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

c. The term "disadvantaged class 3 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the Tri-County area and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

d. The term "disadvantaged class 4 enterprise" shall mean any disadvantaged business enterprise that does not qualify as a Class A, Class B, or Class C business, but is located in the State of Florida and provides supporting documentation of its disadvantaged certification as established in the City's Procurement Manual.

Disadvantaged Business Enterprise Preference (DBEP)

DISADVANTAGED BUSINESS ENTERPRISE CERTIFICATION STATEMENT

The Business identified below certifies that it qualifies for the disadvantaged business enterprise price preference classification as indicated herein, and further certifies and agrees that it will re-affirm its preference classification annually no later than thirty (30) calendar days prior to the anniversary of the date of a contract awarded pursuant to this solicitation. Violation of the foregoing provision may result in contract termination.

(1) _____ is a disadvantaged class 1 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the city, and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

Business Name

(2) _____ is a disadvantaged class 2 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business within the limits of the city with a full-time employee(s) and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

Business Name

(3) _____ is a disadvantaged class 3 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the Tri-County area and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

Business Name

(4) _____ is a disadvantaged class 4 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that does not qualify as a Class A, Class B, or Class C business, but is located in the State of Florida and provides supporting documentation of its disadvantaged certification as established in the City's Procurement Manual.

Business Name

(5) WSP USA Inc. is not considered a Disadvantaged Enterprise Business as defined in the City of Fort Lauderdale Ordinance Sec.2-185 and does not qualify for DBE Preference consideration.

Business Name

BIDDER'S COMPANY: WSP USA Inc.

AUTHORIZED COMPANY PERSON: Michael Flood _____ 4/20/2023

PRINT NAME SIGNATURE DATE

Contract Payment Method

The City of Fort Lauderdale has implemented a Procurement Card (P-Card) changes how payments are remitted to its vendors. The City has transitioned from t checks to credit card payments via MasterCard or Visa as part of this program.

This allows you as a vendor of the City of Fort Lauderdale to receive your payments No more waiting for checks to be printed and mailed.

In accordance with the contract, payments on this contract will be made utilizing th (MasterCard or Visa). Accordingly, bidders must presently have the ability to acc cards or take whatever steps necessary to implement acceptance of a card before contract term, or contract award by the City.

All costs associated with the Contractor's participation in this purchasing program sh the Contractor. The City reserves the right to revise this program as necessary.

By signing below you agree with these terms.

Please indicate which credit card payment you prefer:

☐ MasterCard

☒ Visa

WSP USA Inc.
Company Name

Michael Flood
Name (Printed)

Michael Flood
Signature

4/20/23
Date

National Resiliency Lead
Title

E-Verify Affirmation Statement

E-VERIFY AFFIRMATION STATEMENT

Solicitation/Bid /Contract No: Solicitation Event 69

Project Description: Vulnerability Assessment for the City of Fort Lauderdale

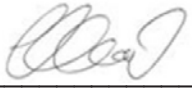
Contractor/Proposer/Bidder acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of,

A. all persons employed by Contractor/Proposer/Bidder to perform employment duties within Florida during the term of the Contract, and,

B. all persons (including subcontractors/vendors) assigned by Contractor/Proposer/Bidder to perform work pursuant to the Contract.

The Contractor/Proposer/Bidder acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the Contract is a condition of the Contract.

Contractor/Proposer/ Bidder Company Name: WSP USA Inc.

Authorized Company Person's Signature: 

Authorized Company Person's Title: National Resiliency Lead

Date: 4/20/2023

Sample Insurance Certificate

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 4/29/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Arthur J. Gallagher Risk Management Services, Inc. 250 Park Avenue, 5th Floor New York NY 10177	**CONTACT NAME:** AJG Service Team **PHONE (A/C, No, Ext):** 212-994-7100 **FAX (A/C, No):** 212-994-7047 **E-MAIL ADDRESS:** GGB.WSPUS.CERTREQUESTS@AJG.COM
INSURED WSPGLOB-01 WSP USA Inc. One Penn Plaza New York, NY 10119	**INSURER(S) AFFORDING COVERAGE** — **NAIC #** **INSURER A :** Liberty Insurance Corporation — 42404 **INSURER B :** Zurich American Insurance Company — 16535 **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** 267002313 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
B	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC OTHER:			GLO 9835819-09	5/1/2022	5/1/2023	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG 	$ 3,500,000 $ 100,000 $ 10,000 $ 3,500,000 $ 7,500,000 $ 3,500,000 $
A	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			AS7-621-094060-032	5/1/2022	5/1/2023	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) 	$ 5,000,000 $ $ $ $
	UMBRELLA LIAB OCCUR **EXCESS LIAB** CLAIMS-MADE DED RETENTION $						EACH OCCURRENCE AGGREGATE 	$ $ $
A A A A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WA7-62D-094060-012 WA7-62D-094060-982 WA7-62D-095609-072 WC7-621-094060-912	5/1/2022 5/1/2022 5/1/2022 5/1/2022	5/1/2023 5/1/2023 5/1/2023 5/1/2023	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 2,000,000 $ 2,000,000 $ 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
THIRTY (30) DAYS NOTICE OF CANCELLATION.

CERTIFICATE HOLDER

As A Matter of Record

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

W-9 for Proposing Firm

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give Form to the requester. Do not send to the IRS.

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.
WSP USA INC.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☒ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) 5

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.
One Penn Plaza, 4th Floor

Requester's name and address (optional)

6 City, state, and ZIP code
New York, NY 10119

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number
___ - ___ - ____

or

Employer identification number
11 - 1531569

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here Signature of U.S. person ▶ Daniel W Frederick Date ▶ 01/01/2023

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

Cat. No. 10231X Form **W-9** (Rev. 10-2018)

Active Status Page from Division of Corporations - Sunbiz.org

Department of State / Division of Corporations / Search Records / Search by Entity Name /

Previous On List Next On List Return to List WSP USA Search

Events Name History

Detail by Entity Name

Foreign Profit Corporation
WSP USA INC.

Filing Information

Document Number	829626
FEI/EIN Number	11-1531569
Date Filed	03/05/1973
State	NY
Status	ACTIVE
Last Event	NAME CHANGE AMENDMENT
Event Date Filed	05/02/2017
Event Effective Date	NONE

Principal Address

One Penn Plaza
4th Floor
New York, NY 10119

Changed: 03/07/2023

Mailing Address

One Penn Plaza
4th Floor
New York, NY 10119

Changed: 03/07/2023

Registered Agent Name & Address

CT CORPORATION SYSTEM
1200 S. PINE ISLAND ROAD
PLANTATION, FL 33324

Name Changed: 07/02/1992

Address Changed: 07/02/1992

Officer/Director Detail

Name & Address

Title Secretary

Jassey, Hillary F.
One Penn Plaza
4th Floor
New York, NY 10119

Title President/CEO

McNeilly, Bernard P.
One Penn Plaza
4th Floor
New York, NY 10119

Title Director

Benz, Gregory P.
One Penn Plaza
4th Floor
New York, NY 10119

Title Director

McNeilly, Bernard P.
One Penn Plaza
4th Floor
New York, NY 10119

Title Director

Warren, Mark
One Penn Plaza
4th Floor
New York, NY 10119

Title Treasurer

Esposito, Andrew C.
One Penn Plaza
4th Floor
New York, NY 10119

Title VP

Lynn, Andrew J
One Penn Plaza
4th Floor
New York, NY 10119

Title VP

Reed, Kevin B.
One Penn Plaza
4th Floor
New York, NY 10119

Title Director

Odeh, David J.
One Penn Plaza
4th Floor
New York, NY 10119

Title Director

Esposito, Andrew C.
One Penn Plaza
4th Floor
New York, NY 10119

Annual Reports

Report Year	Filed Date
2021	04/18/2021
2022	04/29/2022
2023	03/07/2023

Document Images

03/07/2023 -- ANNUAL REPORT	View image in PDF format
04/29/2022 -- ANNUAL REPORT	View image in PDF format
04/18/2021 -- ANNUAL REPORT	View image in PDF format
02/24/2020 -- ANNUAL REPORT	View image in PDF format
02/20/2019 -- ANNUAL REPORT	View image in PDF format
11/05/2018 -- AMENDED ANNUAL REPORT	View image in PDF format
04/06/2018 -- ANNUAL REPORT	View image in PDF format
08/14/2017 -- AMENDED ANNUAL REPORT	View image in PDF format
07/07/2017 -- AMENDED ANNUAL REPORT	View image in PDF format
05/02/2017 -- Name Change	View image in PDF format
04/12/2017 -- ANNUAL REPORT	View image in PDF format
06/20/2016 -- AMENDED ANNUAL REPORT	View image in PDF format
03/22/2016 -- ANNUAL REPORT	View image in PDF format
04/23/2015 -- ANNUAL REPORT	View image in PDF format
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02/24/2012 -- ANNUAL REPORT	View image in PDF format
12/08/2011 -- ANNUAL REPORT	View image in PDF format
11/03/2011 -- Name Change	View image in PDF format
04/13/2011 -- ANNUAL REPORT	View image in PDF format
02/17/2010 -- ANNUAL REPORT	View image in PDF format
03/13/2009 -- ANNUAL REPORT	View image in PDF format
02/06/2009 -- ANNUAL REPORT	View image in PDF format
04/24/2008 -- ANNUAL REPORT	View image in PDF format
02/13/2007 -- ANNUAL REPORT	View image in PDF format
11/20/2006 -- Name Change	View image in PDF format
02/17/2006 -- ANNUAL REPORT	View image in PDF format
02/09/2005 -- ANNUAL REPORT	View image in PDF format
02/25/2004 -- ANNUAL REPORT	View image in PDF format
03/20/2003 -- ANNUAL REPORT	View image in PDF format
03/15/2002 -- ANNUAL REPORT	View image in PDF format
05/07/2001 -- ANNUAL REPORT	View image in PDF format
03/20/2001 -- ANNUAL REPORT	View image in PDF format
02/10/2000 -- ANNUAL REPORT	View image in PDF format
04/14/1999 -- ANNUAL REPORT	View image in PDF format
04/02/1998 -- ANNUAL REPORT	View image in PDF format
05/19/1997 -- ANNUAL REPORT	View image in PDF format
05/15/1996 -- ANNUAL REPORT	View image in PDF format
02/14/1995 -- ANNUAL REPORT	View image in PDF format

Evidence of Binding Authority

WSP USA INC.
ASSISTANT SECRETARY'S CERTIFICATE

I, Laura S. Unger, Assistant Secretary of WSP USA Inc. (the "Corporation"), do hereby certify on behalf of the Corporation and not in my individual capacity that on August 4, 2020 the Board of Directors of the Corporation adopted the following resolution:

> "**RESOLVED**, that parties authorized by the Delegation of Authority may sign RFPs, RFQs and any resulting project contracts or amendments in accordance with the Delegation of Authority."

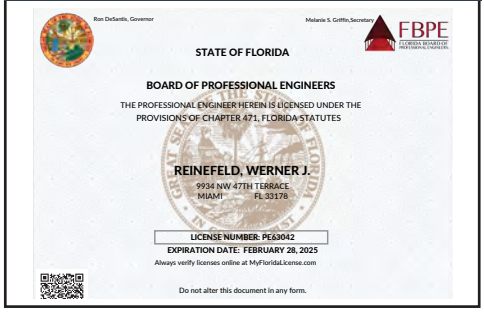
I further certify that the resolution has not been revoked and that, as the National Resiliency Lead, Michael Flood is authorized by the Delegation of Authority to sign proposals, contracts and other legal instruments between The City of Fort Lauderdale, Florida and the Corporation regarding Request for Proposals/Solicitation Event 69: Vulnerability Assessment for the City of Fort Lauderdale.

Laura S. Unger
Assistant Secretary

April 18, 2023
Date

Licenses and Other Pertinent Information

Werner Reinefeld, PE



STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

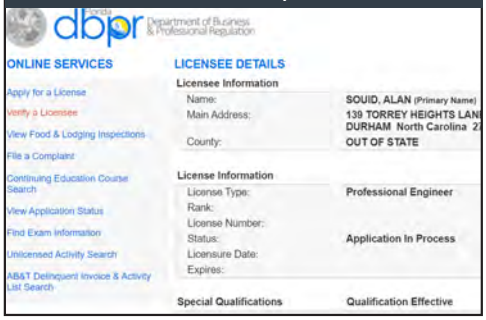
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

REINEFELD, WERNER J.
9934 NW 47TH TERRACE
MIAMI FL 33178

LICENSE NUMBER: PE63042
EXPIRATION DATE: FEBRUARY 28, 2025
Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

Al Souid, PE



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LICENSEE DETAILS

Licensee Information

Name:	SOUID, ALAN (Primary Name)
Main Address:	139 TORREY HEIGHTS LAN DURHAM North Carolina 2
County:	OUT OF STATE

License Information

License Type:	Professional Engineer
Rank:	
License Number:	
Status:	Application In Process
Licensure Date:	
Expires:	

Special Qualifications	Qualification Effective

Jose Custodio, PE

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

CUSTODIO HERNANDEZ, JOSE VICTOR
1962 NW 100TH AVE
PEMBROKE PINES FL 33024-1460

LICENSE NUMBER: PE81080
EXPIRATION DATE: FEBRUARY 28, 2025
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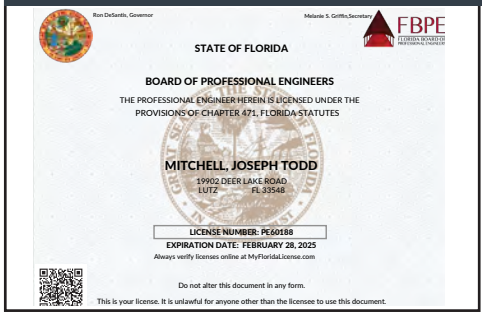
Todd Mitchell, PE



STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

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MITCHELL, JOSEPH TODD
19902 DEER LAKE ROAD
LUTZ FL 33548

LICENSE NUMBER: PE60188
EXPIRATION DATE: FEBRUARY 28, 2025
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David Stroud, CFM

NCAFPM

CERTIFIED FLOODPLAIN MANAGER (CFM®) PROGRAM

Accredited by the Association of State Floodplain Managers

IN RECOGNITION OF HAVING MET THE NATIONAL CERTIFICATION REQUIREMENTS, THE BOARD OF DIRECTORS OF THE NORTH CAROLINA ASSOCIATION OF FLOODPLAIN MANAGERS HAS AWARDED THE TITLE OF CERTIFIED FLOODPLAIN MANAGER TO

David A. Stroud, CFM

IN RECOGNITION THEREOF, THIS CERTIFICATE IS ISSUED THIS DAY 5/22/2000.
This Certificate Shall Expire on 1/1/2024
Certification number NC-02-0044

William R. Tingle, CFM
NCAFPM Executive Director

Amit Sachan, P.E., CFM
NCAFPM Chair

Christine Fanchi, PE

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LICENSEE DETAILS

Licensee Information

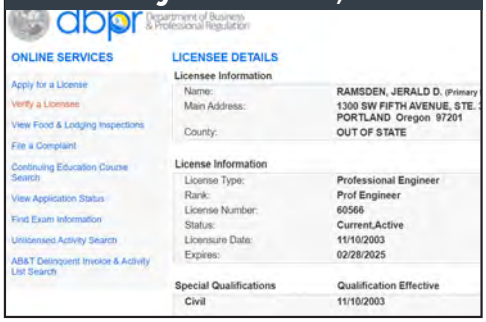
Name:	FANCHI, CHRISTINE WATSON (Primary
Main Address:	914 NE 17TH WAY FORT LAUDERDALE Florida 33304
County:	BROWARD

License Information

License Type:	Professional Engineer
Rank:	Prof Engineer
License Number:	80088
Status:	Current,Active
Licensure Date:	11/06/2015
Expires:	02/28/2025

Special Qualifications	Qualification Effective
Civil	11/06/2015

Jerry Ramsden, PE



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LICENSEE DETAILS

Licensee Information

Name:	RAMSDEN, JERALD D. (Primary
Main Address:	1300 SW FIFTH AVENUE, STE. PORTLAND Oregon 97201
County:	OUT OF STATE

License Information

License Type:	Professional Engineer
Rank:	Prof Engineer
License Number:	60566
Status:	Current,Active
Licensure Date:	11/10/2003
Expires:	02/28/2025

Special Qualifications	Qualification Effective
Civil	11/10/2003

Justin Lennon, PE

ONLINE SERVICES

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View Application Status
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Unlicensed Activity Search
AB&T Delinquent Invoice & Activity List Search

LICENSEE DETAILS

Licensee Information

Name:	LENNON, JUSTIN MICHAEL (Prim
Main Address:	205 ABBACY DR WEXFORD Pennsylvania 15090
County:	OUT OF STATE

License Information

License Type:	Professional Engineer
Rank:	Prof Engineer
License Number:	79940
Status:	Current,Active
Licensure Date:	10/01/2015
Expires:	02/28/2025

Special Qualifications	Qualification Effective
Civil	10/01/2015

Maria Watt, PE

NEW JERSEY DIVISION OF CONSUMER AFFAIRS

Cari Fais
Acting Director
Read Bio

Search Results

For a more detailed view of a licensee's background, select the licensee name from the alphabetical list below. Click the numbers below the grid to see additional pages of licensees. To return to the Search page, use Search Again button below. (Do not use the browser Back key.)

Full Name	License Number	Profession	License Type	License Status	City
MARIA D WATT	24GE03884700	Engineers & Land Surveyors	Professional Engineer	Active	The Villages

Addendum 1

ADDENDUM NO. 1

RFP No. **Event 69**
TITLE: **Vulnerability Assessment for the City of Fort Lauderdale**

ISSUED: 04/05/2023

This addendum is being issued to make the following change(s):

1. In Section 4.2.4 Approach to Scope of Work the following language shall be stricken:
   - ~~NOTE: The project must be completed and accepted within 120 days from the City Notice to Proceed.~~

All other terms, conditions, and specifications remain unchanged.

Laurie Platkin
Senior Procurement Specialist

Company Name: WSP USA Inc.
(please print)

Bidder's Signature: _____

Date: 4/20/2023

1000 Sawgrass Corporate
Parkway, Suite 578
Sunrise, FL 33323
(954) 908-8700

wsp.com

As one of the world's leading professional service firms, WSP brings clarity and vision to complex challenges by working with and advising governments and private-sector clients on key aspects of earth sciences and environmental sustainability. With the recent acquisitions of the Environment & Infrastructure business (E&I) of John Wood plc. and Golder, we have built the largest environmental practice in the world. Our over 23,000 environmental professionals provide specialized services to clients in some of the most highly regulated industries, including mining, oil and gas, energy, industrial, property and buildings, water and transportation. They advise on matters ranging from clean air, water and land, to biodiversity, green energy solutions, climate change and Environmental, Social and Governance (ESG) issues. From design, permitting, planning and operations, to decommissioning and asset remediation, our environmental professionals are ready to support you through the entire lifecycle of your projects.

Proposal Certification

CITY OF FORT LAUDERDALE BID/PROPOSAL CERTIFICATION

Please Note: It is the sole responsibility of the bidder/proposer to ensure that their response is submitted electronically through the City's on-line strategic sourcing platform prior to the bid opening date and time listed. Paper bid submittals will not be accepted. All fields below must be completed. If the field does not apply to you, please note N/A in that field.

If you are a foreign corporation, you may be required to obtain a certificate of authority from the department of state, in accordance with Florida Statute §607.1501 (visit http://www.dos.state.fl.us/).

Company: (Legal Registration) WSP USA Inc. EIN (Optional): 11-1531569

Address: One Penn Plaza, 4th Floor

City: New York State: NY Zip: 10119

Telephone No.: 410-246-0528 FAX No.: N/A Email: michael.flood@wsp.com

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Delivery: Calendar days after receipt of Purchase Order **(section 1.02 of General Conditions)**: _____

Total Bid Discount **(section 1.05 of General Conditions)**: _____

Check box if your firm qualifies for DBE **(section 1.09 of General Conditions)**: ❑

ADDENDUM ACKNOWLEDGEMENT - Proposer acknowledges that the following addenda have been received and are included in the proposal:

Addendum No.	Date Issued	Addendum No.	Date Issued	Addendum No.	Date Issued	Addendum No.	Date Issued
1	4/5/2023						

VARIANCES: If you take exception or have variances to any term, condition, specification, scope of service, or requirement in this competitive solicitation you must specify such exception or variance in the space provided below or reference in the space provided below all variances contained on other pages within your response. Additional pages may be attached if necessary. No exceptions or variances will be deemed to be part of the response submitted unless such is listed and contained in the space provided below. The City does not, by virtue of submitting a variance, necessarily accept any variances. If no statement is contained in the below space, it is hereby implied that your response is in full compliance with this competitive solicitation. If you do not have variances, simply mark N/A.

WSP requests the opportunity to discuss, negotiate and agree to mutually agreeable terms that reflect reasonable, customary, and industry standards.

The below signatory hereby agrees to furnish the following article(s) or services at the price(s) and terms stated subject to all instructions, conditions, specifications addenda, legal advertisement, and conditions contained in the bid/proposal. I have read all attachments including the specifications and fully understand what is required. By submitting this signed proposal, I will accept a contract if approved by the City and such acceptance covers all terms, conditions, and specifications of this bid/proposal. The below signatory also hereby agrees, by virtue of submitting or attempting to submit a response, that in no event shall the City's liability for respondent's direct, indirect, incidental, consequential, special or exemplary damages, expenses, or lost profits arising out of this competitive solicitation process, including but not limited to public advertisement, bid conferences, site visits, evaluations, oral presentations, or award proceedings exceed the amount of Five Hundred Dollars ($500.00). This limitation shall not apply to claims arising under any provision of indemnification or the City's protest ordinance contained in this competitive solicitation.

Submitted by:

Michael Flood
Name (printed)


Signature

04/20/2023
Date

National Resiliency Lead
Title

Cost Proposal

SECTION VI - COST PROPOSAL PAGE

Proposer Name: WSP USA Inc.

Proposer agrees to supply the products and services at the prices bid/proposed below in accordance with the terms, conditions and specifications contained in this RFP.

Cost to the City: Contractor shall quote firm, fixed, costs for all services/products identified in this request for proposal. These firm fixed costs for the project include any costs for travel and miscellaneous expenses. No other costs will be accepted.

Notes:

Attach a breakdown of costs including but not limited to labor, equipment, materials, and parts.

1. Vulnerability Assessment for City of Fort Lauderdale		$125,000.00
2. Number of Elevation Certificates being provided for the $25,000 allocation.	16	
3. Additional Elevation Certificates (Cost per Certificate)* *(assuming a minimum of 4 additional certificates)		$1,600.00
Total Project Cost		**$**150,000.00

Notes:

The additional $10,000 in the grant budget can be potentially be utilized for the following optional items if desired:

- Develop prioritization criteria for City-owned roadways and other asset types,
- Preliminary design strategies to integrate resilience into a pilot 1-mile roadway (with stormwater infrastructure), or a city-owned building facility,
- Summary of appropriate federal grants to design and construct the identified vulnerable assets

Submitted by:

Michael Flood
Name (printed)


Signature

04/20/2023
Date

National Resiliency Lead
Title

Non-Collusion Statement

NON-COLLUSION STATEMENT

By signing this offer, the vendor/contractor certifies that this offer is made independently and *free* from collusion. Vendor shall disclose below any City of Fort Lauderdale, FL officer or employee, or any relative of any such officer or employee who is an officer or director of, or has a material interest in, the vendor's business, who is in a position to influence this procurement.

Any City of Fort Lauderdale, FL officer or employee who has any input into the writing of specifications or requirements, solicitation of offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement.

For purposes hereof, a person has a material interest if they directly or indirectly own more than 5 percent of the total assets or capital stock of any business entity, or if they otherwise stand to personally gain if the contract is awarded to this vendor.

In accordance with City of Fort Lauderdale, FL Policy and Standards Manual, 6.10.8.3,

> 3.3. City employees may not contract with the City through any corporation or business entity in which they or their immediate family members hold a controlling financial interest (e.g., ownership of five (5) percent or more).
>
> 3.4. Immediate family members (spouse, parents, and children) are also prohibited from contracting with the City subject to the same general rules.

Failure of a vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the City Procurement Code.

NAME	RELATIONSHIPS
N/A	N/A

In the event the vendor does not indicate any names, the City shall interpret this to mean that the vendor has indicated that no such relationships exist.

Authorized Signature

National Resiliency Lead
Title

Michael Flood
Name (Printed)

04/20/2023
Date

Rev 09-2022

Non-Discrimination Certification Form

CONTRACTOR'S CERTIFICATE OF COMPLIANCE WITH NON-DISCRIMINATION PROVISIONS OF THE CONTRACT

The completed and signed form should be returned with the Contractor's submittal. If not provided with submittal, the Contractor must submit within three business days of City's request. Contractor may be deemed non-responsive for failure to fully comply within stated timeframes.

Pursuant to City Ordinance Sec. 2-17(a)(i)(ii), bidders must certify compliance with the Non-Discrimination provision of the ordinance.

A. Contractors doing business with the City shall not discriminate against their employees based on the employee's race, color, religion, gender (including identity or expression), marital status, sexual orientation, national origin, age, disability, or any other protected classification as defined by applicable law.

Contracts. Every Contract exceeding $100,000, or otherwise exempt from this section shall contain language that obligates the Contractor to comply with the applicable provisions of this section.

The Contract shall include provisions for the following:

(i) The Contractor certifies and represents that it will comply with this section during the entire term of the contract.

(ii) The failure of the Contractor to comply with this section shall be deemed to be a material breach of the contract, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.

Authorized Signature

Michael Flood, National Resiliency Lead

Print Name and Title

4/20/2023

Date

Local Business Preference (LBP)

LOCAL BUSINESS PREFERENCE

Section 2-199.2, Code of Ordinances of the City of Fort Lauderdale, (Ordinance No. C-12-04), provides for a local business preference.

In order to be considered for a local business preference, a bidder must include the Local Business Preference Certification Statement of this ITB, as applicable to the local business preference class claimed **at the time of bid submittal.**

> Upon formal request of the City, based on the application of a Local Business Preference the Bidder shall, within ten (10) calendar days, submit the following documentation to the Local Business Preference Class claimed:

A) Copy of City of Fort Lauderdale current year business tax receipt, **or** Broward County current year business tax receipt, **and**

B) List of the names of all employees of the bidder and evidence of employees' residence within the geographic bounds of the City of Fort Lauderdale or Broward County, as the case may be, such as current Florida driver license, residential utility bill (water, electric, telephone, cable television), or other type of similar documentation acceptable to the City.

Failure to comply at time of bid submittal shall result in the bidder being found ineligible for the local business preference.

THE COMPLETE LOCAL BUSINESS PREFERENCE ORDINANCE MAY BE FOUND ON THE CITY'S WEB SITE AT THE FOLLOWING LINK:
https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2AD_ARTVFI_DIV2PR_S2-186LOBUPR

Definitions: The term "Business" shall mean a person, firm, corporation or other business entity which is duly licensed and authorized to engage in a particular work in the State of Florida. Business shall be broken down into four (4) types of classes:

1. Class A Business – shall mean any Business that has established and agrees to maintain a permanent place of business located in a non-residential zone and staffed with full-time employees within the limits of the City **and** shall maintain a staffing level of the prime contractor for the proposed work of at least fifty percent (50%) who are residents of the City.

2. Class B Business - shall mean any Business that has established and agrees to maintain a permanent place of business located in a non-residential zone and staffed with full-time employees within the limits of the City **or** shall maintain a staffing level of the prime contractor for the proposed work of at least fifty percent (50%) who are residents of the City.

3. Class C Business - shall mean any Business that has established and agrees to maintain a permanent place of business located in a non-residential zone **and** staffed with full-time employees within the limits of Broward County.

4. Class D Business – shall mean any Business that does not qualify as either a Class A, Class B, or Class C business.

Local Business Preference (LBP)

LOCAL BUSINESS PREFERENCE CERTIFICATION STATEMENT

The Business identified below certifies that it qualifies for the local business price preference classification as indicated herein, and further certifies and agrees that it will re-affirm its local preference classification annually no later than thirty (30) calendar days prior to the anniversary of the date of a contract awarded pursuant to this ITB. Violation of the foregoing provision may result in contract termination.

(1) _____ is a **Class A** Business as defined in City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. A copy of the City of Fort Lauderdale current year Business Tax Receipt **and** a complete list of full-time employees and evidence of their addresses shall be provided within 10 calendar days of a formal request by the City.
Business Name

(2) _____ is a **Class B** Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. A copy of the Business Tax Receipt **or** a complete list of full-time employees and evidence of their addresses shall be provided within 10 calendar days of a formal request by the City.
Business Name

(3) WSP USA Inc. is a **Class C** Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. A copy of the Broward County Business Tax Receipt shall be provided within 10 calendar days of a formal request by the City.
Business Name

(4) _____ requests a **Conditional Class A** classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent shall be provided within 10 calendar days of a formal request by the City.
Business Name

(5) _____ requests a **Conditional Class B** classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent shall be provided within 10 calendar days of a formal request by the City.
Business Name

(6) _____ is considered a **Class D** Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186 and does not qualify for Local Preference consideration.
Business Name

BIDDER'S COMPANY: WSP USA Inc.

AUTHORIZED COMPANY PERSON: Michael Flood _____ 4/20/2023
PRINT NAME SIGNATURE DATE

Disadvantaged Business Enterprise Preference (DBEP)

DISADVANTAGED BUSINESS ENTERPRISE (DBE) PREFERENCE

Section 2-185, Code of Ordinances of the City of Fort Lauderdale, provides for a disadvantaged business preference.

In order to be considered for a DBE Preference, a bidder must include a certification from a government agency, as applicable to the DBE Preference class claimed **at the time of bid submittal**.

Upon formal request of the City, based on the application of a DBE Preference the Bidder shall, within ten (10) calendar days, submit the following documentation to the DBE Class claimed:

A) Copy of City of Fort Lauderdale current year business tax receipt, **or** Broward County current year business tax receipt, **or** State of Florida active registration **and/or**

B) List of the names of all employees of the bidder and evidence of employees' residence within the geographic bounds of the City of Fort Lauderdale or Broward County, as the case may be, such as current Florida driver license, residential utility bill (water, electric, telephone, cable television), or other type of similar documentation acceptable to the City.

Failure to comply at time of bid submittal shall result in the bidder being found ineligible for the disadvantaged business preference.

THE COMPLETE DBE PREFERENCE ORDINANCE MAY BE FOUND ON THE CITY'S WEB SITE AT THE FOLLOWING LINK: https://www.fortlauderdale.gov/home/showpublisheddocument?id=56883

Definitions

a. The term "disadvantaged class 1 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the city, and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

b. The term "disadvantaged class 2 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business within the limits of the city with a full-time employees and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

c. The term "disadvantaged class 3 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the Tri-County area and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

d. The term "disadvantaged class 4 enterprise" shall mean any disadvantaged business enterprise that does not qualify as a Class A, Class B, or Class C business, but is located in the State of Florida and provides supporting documentation of its disadvantaged certification as established in the City's Procurement Manual.

Disadvantaged Business Enterprise Preference (DBEP)

DISADVANTAGED BUSINESS ENTERPRISE CERTIFICATION STATEMENT

The Business identified below certifies that it qualifies for the disadvantaged business enterprise price preference classification as indicated herein, and further certifies and agrees that it will re-affirm its preference classification annually no later than thirty (30) calendar days prior to the anniversary of the date of a contract awarded pursuant to this solicitation. Violation of the foregoing provision may result in contract termination.

(1) _____ is a disadvantaged class 1 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the city, and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

Business Name

(2) _____ is a disadvantaged class 2 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business within the limits of the city with a full-time employee(s) and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

Business Name

(3) _____ is a disadvantaged class 3 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the Tri-County area and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

Business Name

(4) _____ is a disadvantaged class 4 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that does not qualify as a Class A, Class B, or Class C business, but is located in the State of Florida and provides supporting documentation of its disadvantaged certification as established in the City's Procurement Manual.

Business Name

(5) WSP USA Inc. is not considered a Disadvantaged Enterprise Business as defined in the City of Fort Lauderdale Ordinance Sec.2-185 and does not qualify for DBE Preference consideration.

Business Name

BIDDER'S COMPANY: WSP USA Inc.

AUTHORIZED COMPANY PERSON: Michael Flood _____ 4/20/2023

PRINT NAME SIGNATURE DATE

Contract Payment Method

The City of Fort Lauderdale has implemented a Procurement Card (P-Card) changes how payments are remitted to its vendors. The City has transitioned from t checks to credit card payments via MasterCard or Visa as part of this program.

This allows you as a vendor of the City of Fort Lauderdale to receive your payments No more waiting for checks to be printed and mailed.

In accordance with the contract, payments on this contract will be made utilizing th (MasterCard or Visa). Accordingly, bidders must presently have the ability to acc cards or take whatever steps necessary to implement acceptance of a card before contract term, or contract award by the City.

All costs associated with the Contractor's participation in this purchasing program sh the Contractor. The City reserves the right to revise this program as necessary.

By signing below you agree with these terms.

Please indicate which credit card payment you prefer:

☐ MasterCard

☒ Visa

WSP USA Inc.
Company Name

Michael Flood
Name (Printed)

Michael Flood
Signature

4/20/23
Date

National Resiliency Lead
Title

E-Verify Affirmation Statement

E-VERIFY AFFIRMATION STATEMENT

Solicitation/Bid /Contract No: Solicitation Event 69

Project Description: Vulnerability Assessment for the City of Fort Lauderdale

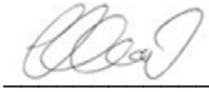
Contractor/Proposer/Bidder acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of,

A. all persons employed by Contractor/Proposer/Bidder to perform employment duties within Florida during the term of the Contract, and,

B. all persons (including subcontractors/vendors) assigned by Contractor/Proposer/Bidder to perform work pursuant to the Contract.

The Contractor/Proposer/Bidder acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the Contract is a condition of the Contract.

Contractor/Proposer/ Bidder Company Name: WSP USA Inc.

Authorized Company Person's Signature: 

Authorized Company Person's Title: National Resiliency Lead

Date: 4/20/2023

Sample Insurance Certificate

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 4/29/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Arthur J. Gallagher Risk Management Services, Inc. 250 Park Avenue, 5th Floor New York NY 10177	**CONTACT NAME:** AJG Service Team **PHONE (A/C, No, Ext):** 212-994-7100 **FAX (A/C, No):** 212-994-7047 **E-MAIL ADDRESS:** GGB.WSPUS.CERTREQUESTS@AJG.COM
INSURED WSPGLOB-01 WSP USA Inc. One Penn Plaza New York, NY 10119	**INSURER(S) AFFORDING COVERAGE** — **NAIC #** **INSURER A :** Liberty Insurance Corporation — 42404 **INSURER B :** Zurich American Insurance Company — 16535 **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** 267002313 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
B	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC OTHER:			GLO 9835819-09	5/1/2022	5/1/2023	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG 	$ 3,500,000 $ 100,000 $ 10,000 $ 3,500,000 $ 7,500,000 $ 3,500,000 $
A	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			AS7-621-094060-032	5/1/2022	5/1/2023	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) 	$ 5,000,000 $ $ $ $
	UMBRELLA LIAB OCCUR **EXCESS LIAB** CLAIMS-MADE DED RETENTION $						EACH OCCURRENCE AGGREGATE 	$ $ $
A A A A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WA7-62D-094060-012 WA7-62D-094060-982 WA7-62D-095609-072 WC7-621-094060-912	5/1/2022 5/1/2022 5/1/2022 5/1/2022	5/1/2023 5/1/2023 5/1/2023 5/1/2023	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 2,000,000 $ 2,000,000 $ 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
THIRTY (30) DAYS NOTICE OF CANCELLATION.

CERTIFICATE HOLDER

As A Matter of Record

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

W-9 for Proposing Firm

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give Form to the requester. Do not send to the IRS.

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.
WSP USA INC.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☒ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) 5

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.
One Penn Plaza, 4th Floor

Requester's name and address (optional)

6 City, state, and ZIP code
New York, NY 10119

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number
___ - ___ - ____

or

Employer identification number
11 - 1531569

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here | **Signature of U.S. person** ▶ Daniel W Frederick | **Date** ▶ 01/01/2023

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

Cat. No. 10231X — Form **W-9** (Rev. 10-2018)

Active Status Page from Division of Corporations - Sunbiz.org

Department of State / Division of Corporations / Search Records / Search by Entity Name /

Previous On List Next On List Return to List WSP USA Search

Events Name History

Detail by Entity Name

Foreign Profit Corporation
WSP USA INC.

Filing Information

Document Number	829626
FEI/EIN Number	11-1531569
Date Filed	03/05/1973
State	NY
Status	ACTIVE
Last Event	NAME CHANGE AMENDMENT
Event Date Filed	05/02/2017
Event Effective Date	NONE

Principal Address

One Penn Plaza
4th Floor
New York, NY 10119

Changed: 03/07/2023

Mailing Address

One Penn Plaza
4th Floor
New York, NY 10119

Changed: 03/07/2023

Registered Agent Name & Address

CT CORPORATION SYSTEM
1200 S. PINE ISLAND ROAD
PLANTATION, FL 33324

Name Changed: 07/02/1992

Address Changed: 07/02/1992

Officer/Director Detail

Name & Address

Title Secretary

Jassey, Hillary F.
One Penn Plaza
4th Floor
New York, NY 10119

Title President/CEO

McNeilly, Bernard P.
One Penn Plaza
4th Floor
New York, NY 10119

Title Director

Benz, Gregory P.
One Penn Plaza
4th Floor
New York, NY 10119

Title Director

McNeilly, Bernard P.
One Penn Plaza
4th Floor
New York, NY 10119

Title Director

Warren, Mark
One Penn Plaza
4th Floor
New York, NY 10119

Title Treasurer

Esposito, Andrew C.
One Penn Plaza
4th Floor
New York, NY 10119

Title VP

Lynn, Andrew J
One Penn Plaza
4th Floor
New York, NY 10119

Title VP

Reed, Kevin B.
One Penn Plaza
4th Floor
New York, NY 10119

Title Director

Odeh, David J.
One Penn Plaza
4th Floor
New York, NY 10119

Title Director

Esposito, Andrew C.
One Penn Plaza
4th Floor
New York, NY 10119

Annual Reports

Report Year	Filed Date
2021	04/18/2021
2022	04/29/2022
2023	03/07/2023

Document Images

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05/02/2017 -- Name Change	View image in PDF format
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02/14/1995 -- ANNUAL REPORT	View image in PDF format

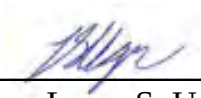
Evidence of Binding Authority

WSP USA INC.
ASSISTANT SECRETARY'S CERTIFICATE

I, Laura S. Unger, Assistant Secretary of WSP USA Inc. (the "Corporation"), do hereby certify on behalf of the Corporation and not in my individual capacity that on August 4, 2020 the Board of Directors of the Corporation adopted the following resolution:

> "**RESOLVED**, that parties authorized by the Delegation of Authority may sign RFPs, RFQs and any resulting project contracts or amendments in accordance with the Delegation of Authority."

I further certify that the resolution has not been revoked and that, as the National Resiliency Lead, Michael Flood is authorized by the Delegation of Authority to sign proposals, contracts and other legal instruments between The City of Fort Lauderdale, Florida and the Corporation regarding Request for Proposals/Solicitation Event 69: Vulnerability Assessment for the City of Fort Lauderdale.

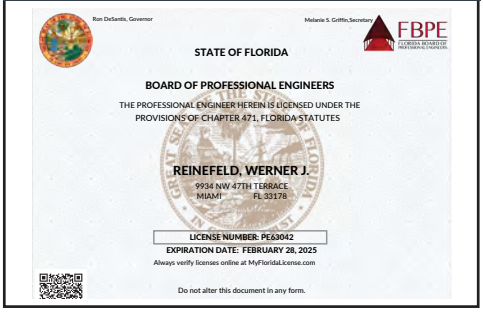


Laura S. Unger
Assistant Secretary

April 18, 2023
Date

Licenses and Other Pertinent Information

Werner Reinefeld, PE



STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

REINEFELD, WERNER J.
9934 NW 47TH TERRACE
MIAMI FL 33178

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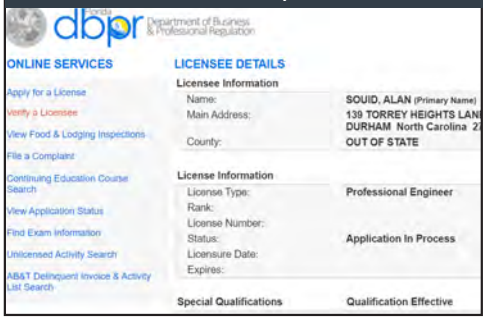
Al Souid, PE



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LICENSEE DETAILS

Licensee Information

Name:	SOUID, ALAN (Primary Name)
Main Address:	139 TORREY HEIGHTS LAN DURHAM North Carolina 2
County:	OUT OF STATE

License Information

License Type:	Professional Engineer
Rank:	
License Number:	
Status:	Application In Process
Licensure Date:	
Expires:	

Special Qualifications	Qualification Effective

Jose Custodio, PE

STATE OF FLORIDA

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CUSTODIO HERNANDEZ, JOSE VICTOR
1962 NW 100TH AVE
PEMBROKE PINES FL 33024-1460

LICENSE NUMBER: PE81080
EXPIRATION DATE: FEBRUARY 28, 2025
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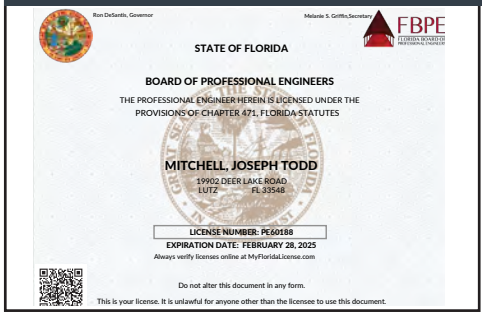
Todd Mitchell, PE



STATE OF FLORIDA

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MITCHELL, JOSEPH TODD
19902 DEER LAKE ROAD
LUTZ FL 33548

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David Stroud, CFM

NCAFPM

CERTIFIED FLOODPLAIN MANAGER (CFM®) PROGRAM

Accredited by the Association of State Floodplain Managers

IN RECOGNITION OF HAVING MET THE NATIONAL CERTIFICATION REQUIREMENTS, THE BOARD OF DIRECTORS OF THE NORTH CAROLINA ASSOCIATION OF FLOODPLAIN MANAGERS HAS AWARDED THE TITLE OF CERTIFIED FLOODPLAIN MANAGER TO

David A. Stroud, CFM

IN RECOGNITION THEREOF, THIS CERTIFICATE IS ISSUED THIS DAY 5/22/2000.
This Certificate Shall Expire on 1/1/2024
Certification number NC-02-0044

William R. Tingle, CFM
NCAFPM Executive Director

Amit Sachan, P.E., CFM
NCAFPM Chair

Christine Fanchi, PE

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LICENSEE DETAILS

Licensee Information

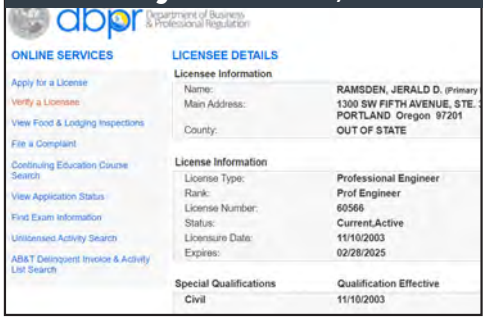
Name:	FANCHI, CHRISTINE WATSON (Primary
Main Address:	914 NE 17TH WAY FORT LAUDERDALE Florida 33304
County:	BROWARD

License Information

License Type:	Professional Engineer
Rank:	Prof Engineer
License Number:	80088
Status:	Current,Active
Licensure Date:	11/06/2015
Expires:	02/28/2025

Special Qualifications	Qualification Effective
Civil	11/06/2015

Jerry Ramsden, PE



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LICENSEE DETAILS

Licensee Information

Name:	RAMSDEN, JERALD D. (Primary
Main Address:	1300 SW FIFTH AVENUE, STE. PORTLAND Oregon 97201
County:	OUT OF STATE

License Information

License Type:	Professional Engineer
Rank:	Prof Engineer
License Number:	60566
Status:	Current,Active
Licensure Date:	11/10/2003
Expires:	02/28/2025

Special Qualifications	Qualification Effective
Civil	11/10/2003

Justin Lennon, PE

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LICENSEE DETAILS

Licensee Information

Name:	LENNON, JUSTIN MICHAEL (Prim
Main Address:	205 ABBACY DR WEXFORD Pennsylvania 15090
County:	OUT OF STATE

License Information

License Type:	Professional Engineer
Rank:	Prof Engineer
License Number:	79940
Status:	Current,Active
Licensure Date:	10/01/2015
Expires:	02/28/2025

Special Qualifications	Qualification Effective
Civil	10/01/2015

Maria Watt, PE

NEW JERSEY DIVISION OF CONSUMER AFFAIRS

Cari Fais
Acting Director
Read Bio

Search Results

For a more detailed view of a licensee's background, select the licensee name from the alphabetical list below. Click the numbers below the grid to see additional pages of licensees. To return to the Search page, use Search Again button below. (Do not use the browser Back key.)

Full Name	License Number	Profession	License Type	License Status	City
MARIA D WATT	24GE03884700	Engineers & Land Surveyors	Professional Engineer	Active	The Villages

Addendum 1

ADDENDUM NO. 1

RFP No. **Event 69**
TITLE: **Vulnerability Assessment for the City of Fort Lauderdale**

ISSUED: 04/05/2023

This addendum is being issued to make the following change(s):

1. In Section 4.2.4 Approach to Scope of Work the following language shall be stricken:
   - ~~NOTE: The project must be completed and accepted within 120 days from the City Notice to Proceed.~~

All other terms, conditions, and specifications remain unchanged.

Laurie Platkin
Senior Procurement Specialist

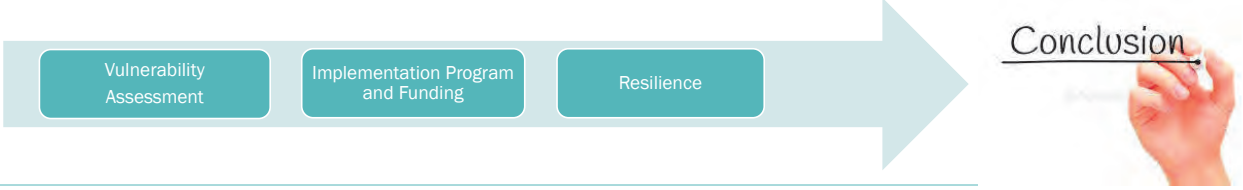
Company Name: WSP USA Inc.
(please print)

Bidder's Signature: _____

Date: 4/20/2023

UNDERSTANDING OF CITY'S NEEDS, PROJECT SCOPE

- Develop a Compliant Inventory of Vulnerabilities to Changing Conditions
  - » For Critical Infrastructure and Facilities
  - » Assess Population Groups and Property Impacts
- Move Toward Implementation
  - » Identify Opportunities for Prioritized Resilience Actions
  - » Determine Applicable Funding Options



INTERVIEW QUESTIONS

1. Elaborate how you're planning to manage this project's subtasks among your subconsultants to adhere to a final project schedule and submittal deadlines.
2. Please elaborate how existing City and County data, including ArcGIS Pro and the 2023 LIDAR done by City, will be used for this project and could reduce project costs.
3. Please identify any potential tasks required by F.S. 380.093 that may not be covered by the project budget or scope.
4. List all vulnerability assessments completed and in progress that are fully compliant with FS 380.093 and identify the role of team members on each one.
5. What percentage of City roadways are included in your proposed vulnerability assessment? What percentage of historical properties are included in your proposed vulnerability assessment?
6. You have proposed 16 elevation certificates in your proposal. How many certificates do you anticipate needing for the City of Fort Lauderdale?
7. Clearly identify the staff that will perform the tasks in the current scope of work and specify the tasks they will perform.
8. Provide examples of key deliverables including tables and maps that would be produced as part of this scope of work.
9. How will you ensure compliance with the terms and conditions of the FDEP grant?
10. Will you incorporate a flooding scenario like the April flash flood in this vulnerability assessment, and if so, how?
11. How will you address inputs for your compound flooding models for future scenarios? For example, if you are changing the sea level input for future projections are you also changing groundwater table elevations and tidal heights?
12. Describe the value-added services that will be included without additional cost.

INTERVIEW QUESTION # *Question being answered.*

1. Elaborate how you're planning to manage this project's subtasks among your subconsultants to adhere to a final project schedule and submittal deadlines.
7. Clearly identify the staff that will perform the tasks in the current scope of work and specify the tasks they will perform.
4. List all vulnerability assessments completed and in progress that are fully compliant with FS 380.093 and identify the role of team members on each one.
2. Elaborate how existing City and County data, including ArcGIS Pro and the 2023 LIDAR done by City, will be used for this project and could reduce project costs.
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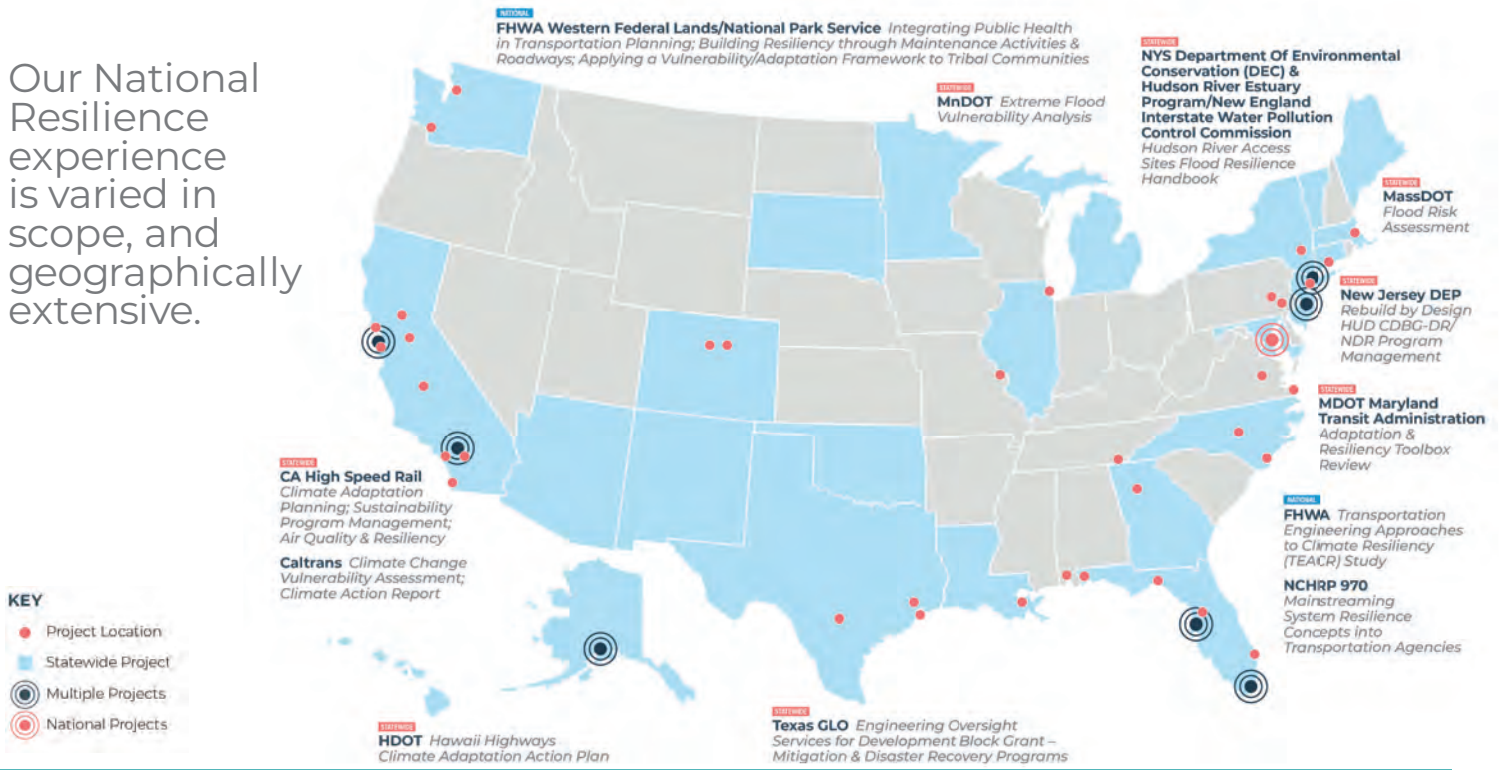
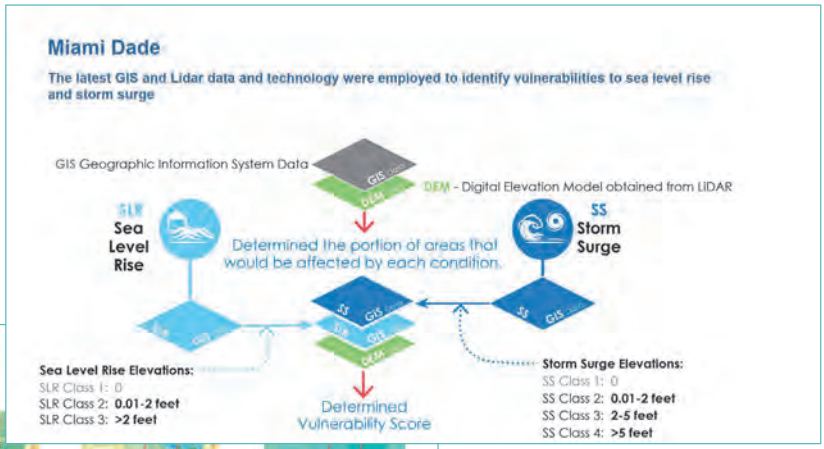
9. How will you ensure compliance with the terms and conditions of the FDEP grant?
3. Identify any potential tasks required by F.S. 380.093 that may not be covered by the project budget or scope.
12. Describe the value-added services that will be included without additional cost.

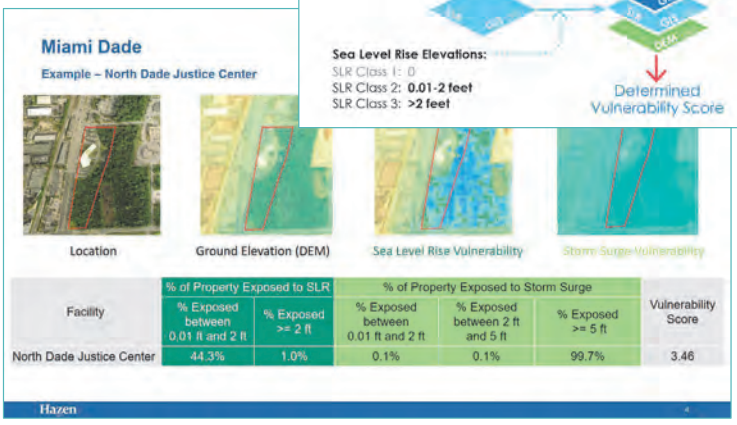
Our National Resilience experience is varied in scope, and geographically extensive.



What Does Not Work

- Does not follow cause-effect logic
- Impossible to communicate





What Works – Engaged Sensitivity Analysis

- Involves City Asset Staff
- Enables Buy-In and Advances Understanding
- Results in More Robust and Specific Analysis

~~Sensitivity~~ GBT

1 Identify Impact Elevation
Elevation of asset elements (i.e. – electrical service, finished floor, etc.) that would impact operation if needed

2 Identify Flooding Elevations and Probabilities
Associated with flooding (25-year, 50-years, 100-year) for coastal/precipitation events

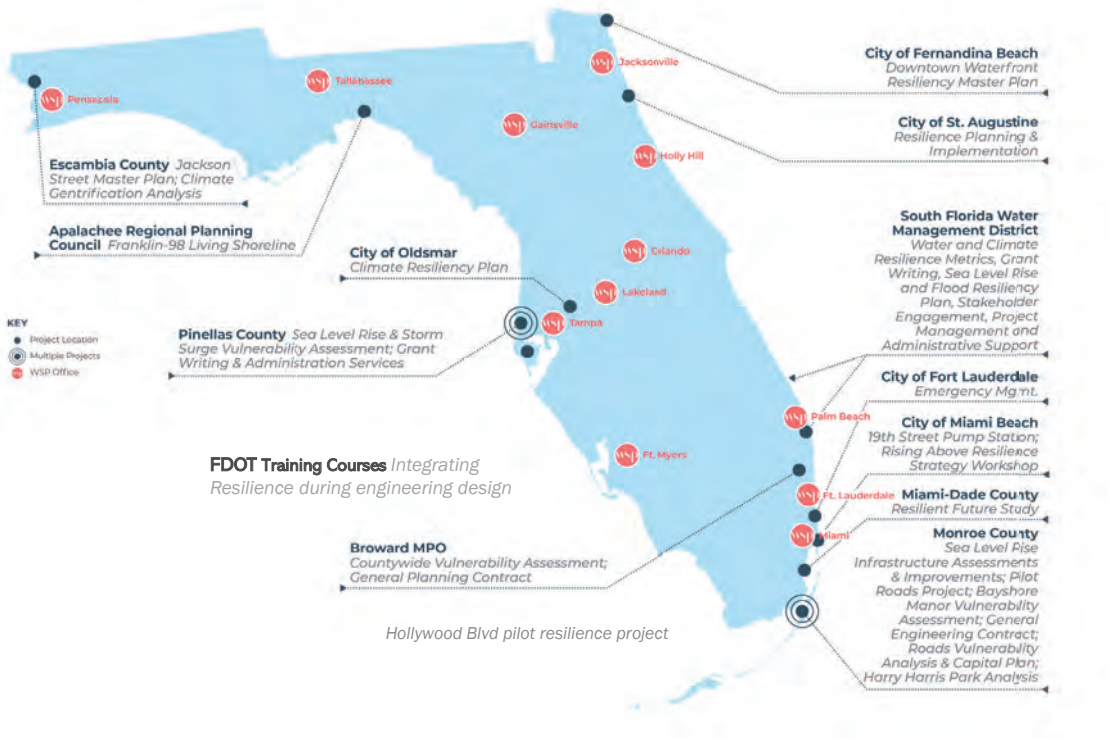
3 Categorize Risk to Assets Based on Likelihood and Timing
Identified as a concern today, or in 2040, 2070 or 2100

Part 1: Background Information					
Facility	What is the function of the facility?	Who does it serve?	Have any past rainfall or flooding events impacted the facility?	If yes, please describe the event in 3-4 sentences.	Do you have any records of the damages and repair costs for the event(s)?
Water treatment facility					

Key Definitions
Facility: City-owned or managed facility (e.g., building, park, etc.)
Asset: A sub-component of a facility (e.g., pavement, HVAC system, etc.)
Impact: The direct damages of flooding to a facility or asset (e.g., flooring/wall damage)
Consequence: The cascading effects of the direct damages or impacts (e.g., service not available for 100 people)

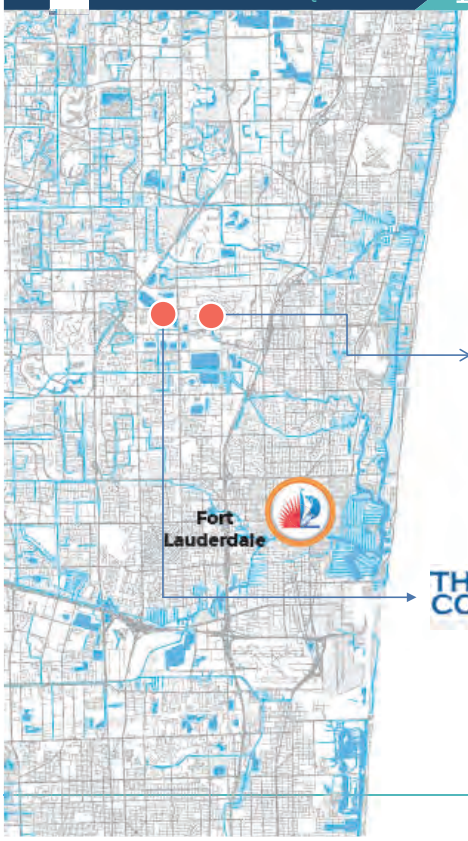
INTERVIEW QUESTION 1 *How you're planning to manage this project's subtasks among your subconsultants to adhere to a final project schedule and submittal deadlines.*

Our Resilience Experience in Florida extends from Planning to Engineering Design



Vulnerability Assessments Compliant with FS.380.093

	Name of Entity/ VA for..	Complete	Ongoing	FS 380.093 (Y/N)	Staff
WSP	Pinellas County	Y		Y	WSP – Mike Flood (PM), Chris Dorney (Risk Assessment), Allie Reilly (Researcher), Maria Watt (SME), Juan Carlos Lam (Technical Lead), Jerry Ramsden (Lead Coastal Engineer), Todd Mitchell
WSP	City of Oldsmar	Y		Y	WSP – Mike Flood (PM), Chris Dorney (Technical Advisor), Allie Reilly (Deputy PM), Todd Mitchell
WSP	Monroe County	Y		Y	WSP – Mike Flood (Technical Advisor), Chris Dorney (Technical Advisor)
WSP	City of Saint Augustine	Y		Y	WSP – David Stroud (FEMA CRS), Al Souid (H&H)
WSP	Miami-Dade County	Y		Y	WSP – Mike Flood (Technical Lead), Chris Dorney (Technical Advisor), Allie Reilly (Deputy PM),
WSP	Broward County MPO	Y		Y	WSP – Mike Flood (PM), Chris Dorney (Technical Advisor)
WSP	City of Ferdinand Beach	Y		Y	WSP – David Stroud (FEMA CRS), Al Souid (H&H)
WSP	City of Tarpon Springs		+	Y	WSP – Mike Flood (PM), Chris Dorney (Technical Advisor), Todd Mitchell
WSP	Village of Islamorada		+	Y	WSP - David Stroud (FEMA CRS), Al Souid (H&H)
WSP	Pigeon Key		+	Y	WSP – David Stroud (FEMA CRS), Al Souid (H&H)
WSP	City of Marathon		+	Y	WSP – David Stroud (FEMA CRS), Al Souid (H&H)
Brizaga	Southeast Palm Beach County Coastal Resilience	Y		Y	Brizaga – Alec Bogdanoff
Brizaga	Coastal Resilience Partnership of Southeast Palm Beach County		+	N	Brizaga – Alec Bogdanoff
Brizaga	North Miami		+	N	Brizaga – Alec Bogdanoff
Brizaga	Alachua County		+	Y	Brizaga – Alec Bogdanoff
Brizaga	Coral Springs		+	Y	Brizaga – Alec Bogdanoff
Brizaga	Briny Breezes Adaptation Plan		+	Y	Brizaga – Alec Bogdanoff
Brizaga	North Bay Village		+	Y	Brizaga – Alec Bogdanoff
Brizaga	Broward County Resilience Assessment & Adaptation Plan		+	Foundation Data - VA is separate	Brizaga – Alec Bogdanoff
Brizaga	City of Hollywood		+	Y	Brizaga – Alec Bogdanoff
Corradino Group	City of Hialeah		+	Y	Corradino Group - Ed Ng | WSP – Catherine Prince
Corradino Group	City of North Miami Beach		+	Y	Corradino Group - Ed Ng | WSP – Catherine Prince



LOCAL TEAMS WITH EXTENSIVE EXPERIENCE IN THE CITY OF FORT LAUDERDALE

3 Former City of Fort Lauderdale staff on our Project Team

BRIZAGA

Brizaga is a certified CBE/SBE and strategic consulting firm.

- Cemetery Master Plan
- Joint Government Center (WSP & Brizaga)
- Mola Avenue Conceptual Road Raising

THE CORRADINO GROUP

The Corradino Group is a land-use planning and engineering consulting firm.

- City's Comprehensive Plan updates

EFFECTIVE PROJECT DELIVERY

>Team Members who know the city

>Professional Partners who work well together

>Delivery Practices embedded in policies, tools, technology and training

TEAM LEADERSHIP HANDS-ON EXPERIENCE WITH FLORIDA VULNERABILITY ASSESSMENTS

CATHERINE PRINCE
Deputy Project Manager

Assist with project delivery, City's secondary point of contact

CHRIS DORNEY
GIS, Risk Assessment

Oversee Hazard & Assets data analysis, vulnerability assessment

BECKY PRADO
Resilient Florida Compliance

Oversee all deliverables for FL Statute compliance

ALEC BOGDANOFF
Policy and Funding

Oversee need for supporting policies

WSP has assembled an experienced team who has worked together previously and has been serving South Florida clients for decades.

JOSE CUSTODIO
Stormwater

Integrate stormwater model & support adaptation strategies

CHRISTINE FANCHI
Transportation

Integrate city's transportation priorities & support adaptation strategies

ED NG
Policy / Ordinance

Assist with ordinance

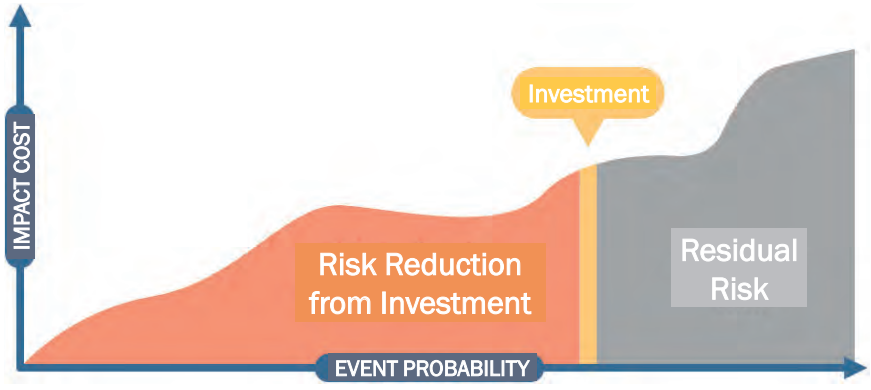
PROJECT DELIVERED IN TIME FOR THE 2023 RESILIENT FLORIDA GRANTS CYCLE

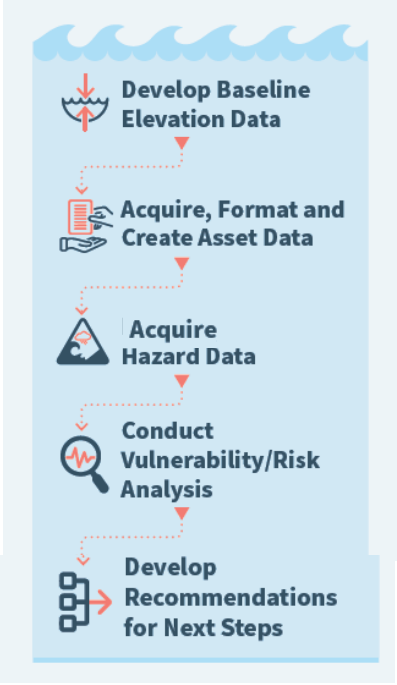
		Implementation						Key Milestone			
		Task initiation									
Months from NTP		1		2		3		4			
Days from NTP	15	30	45	60	75	90	105	120			
Program Management											
Task 1: Acquire Background Data											
Task 2: Regionally Critical Asset Inventory											
Task 3: Survey Elevation Certificates											
Task 4: Exposure Analysis											
Task 5: Sensitivity Analysis											
Task 6: Final Vulnerability Assessment Report											
Task 7: Partial Adaptation Plan											

- Overlap activities for compressed schedule
- Quality control of deliverables ensuring grant compliance
- Delivered within the RF Grant cycle deadline 09/01

OUR TECHNICAL APPROACH FOLLOWS A LOGICAL PROCESS

CAUSE > EFFECT > CONSEQUENCE





TEAM'S CITY OF FORT LAUDERDALE EXPERIENCE WILL HELP LEVERAGE PREVIOUS STUDIES, INFORMATION

- **Stormwater Master Plan Update 2018**

Improvements were intended to reduce flood stage and time of inundation above road crowns for a 10 year-24-hour design storm event (8.5-inches) and to protect against structural flooding in a 100-year 72-hour storm event (17-inches) wherever feasible

- **Watershed Asset Management Plan 2019**
  - » Year 5 of the Implementation (Risk Based Decision Making)
  - » SFNR (River Oaks and Edgewood)
- **Integration**
  - » LiDAR Data
  - » Stormwater Model
  - » Infrastructure Proposed

Integrate Existing Community Feedback

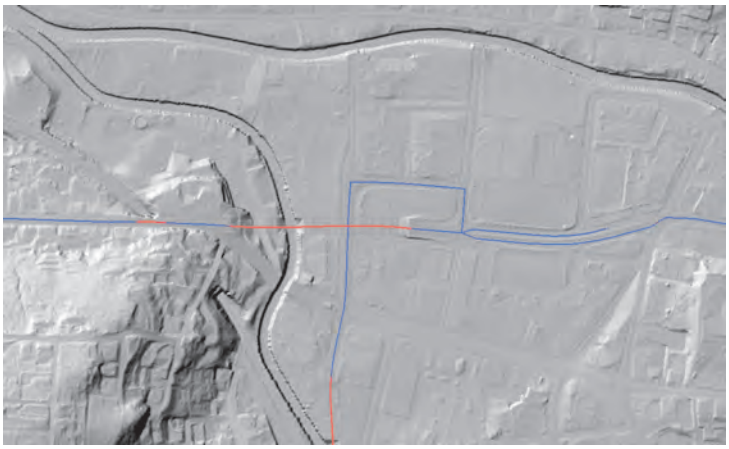
- Yearly FTL Surveys (Flooding and Climate questions)
- Self-report flooding on Broward County' dashboard

Broward County 'Document the Flood Dashboard' has an inventory of community report on flooding – tidal, rainfall/hurricane, tidal + rainfall

INTERVIEW QUESTION 2 *Elaborate how existing City and County data, including ArcGIS Pro and the 2023 LIDAR done by City, will be used for this project and could reduce project costs.*

LEVERAGE EXISTING DATA TO REDUCE COST

- Asset data
  - » Leverage critical facility asset data from Broward County's Vulnerability Assessment
    - ☑ Add any city-specific critical assets
  - » Enhance georeferencing as needed
  - » If not done already, assign FDEP required attribute data (elevation, owner, etc.)



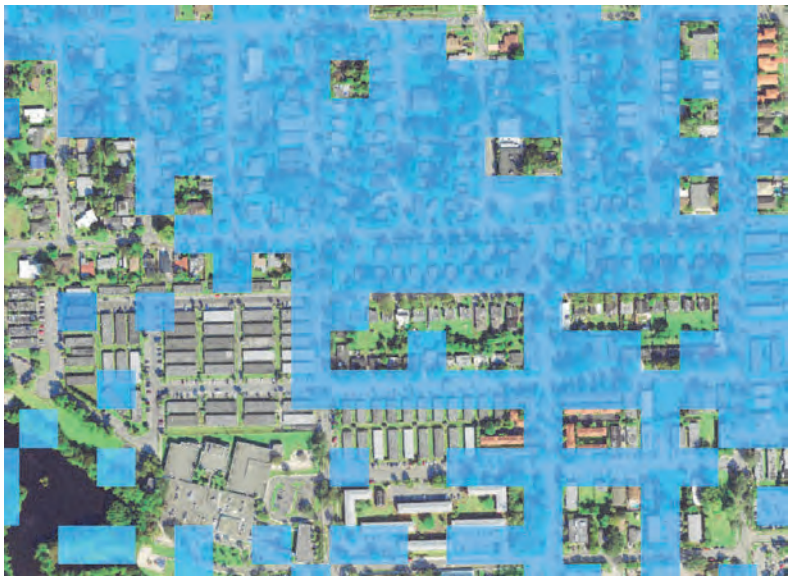
LEVERAGE EXISTING DATA TO REDUCE COST

- Hazard data
  - » Leverage hazard data mapping from Broward County
  - » 54 total scenarios considering different precipitation events, SLR projections, tidal conditions/surge, groundwater conditions
  - » Several of the scenarios are FDEP compliant

Scenario No.	Rainfall	Sea Level Rise Projection	Planning Horizon	Tidal Condition
VA-1	10-yr	N/A	2021 - Current	Normal High Tide
VA-2	25-yr			
VA-3	100-yr			
VA-4	10-yr	2017 NOAA Intermediate Low	2040	
VA-5	25-yr			
VA-6	100-yr			
VA-7	10-yr	2017 NOAA Intermediate High		
VA-8	25-yr			
VA-9	100-yr			
VA-10	10-yr	2017 NOAA Intermediate Low	2070	
VA-11	25-yr			
VA-12	100-yr			
VA-13	10-yr	2017 NOAA Intermediate High		
VA-14	25-yr			
VA-15	100-yr			
VA-16	10-yr	N/A	2021 - Current	Storm Surge (100-year)
VA-17	25-yr			
VA-18	100-yr			
VA-19	10-yr	2017 NOAA Intermediate Low	2040	
VA-20	25-yr			
VA-21	100-yr			
VA-22	10-yr	2017 NOAA Intermediate High		
VA-23	25-yr			
VA-24	100-yr			
VA-25	10-yr	2017 NOAA Intermediate Low	2070	
VA-26	25-yr			
VA-27	100-yr			
VA-28	10-yr	2017 NOAA Intermediate High		
VA-29	25-yr			
VA-30	100-yr			

LEVERAGE EXISTING DATA TO REDUCE COST

- Hazard data enhancements
  - » Enhance hazard data resolution through use of city's LiDAR data
    - ☑ 2023 mobile LiDAR (for roads)
    - ☑ 2018 Stormwater Master Plan aerial LiDAR (for other assets)
  - » Refined flood depth/extent = county water elev. - city LiDAR elev.
  - » Processing will utilize ArcGIS Pro & its advanced imagery processing capabilities
  - » Use enhanced hazard data to support critical asset exposure analysis (Tasks 2 and 4)



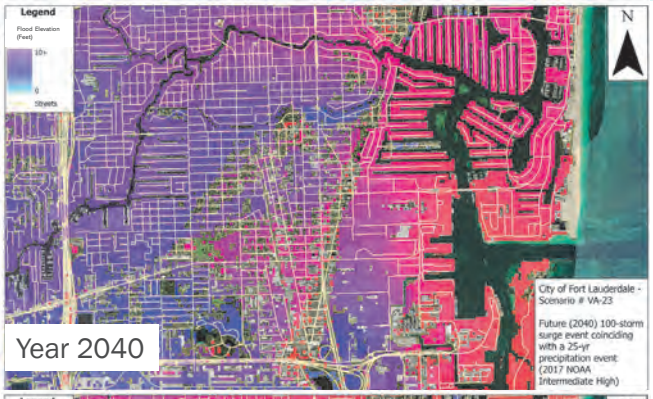
LEVERAGE APRIL FLOOD DATA TO INCORPORATE THIS FLOODING SCENARIO IN THE VULNERABILITY ASSESSMENT

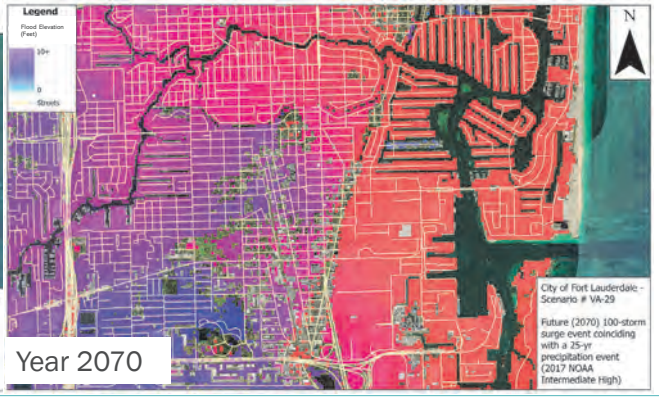
- **Preferred approach:** Identify any immediate post-event remote sensing data that captures the extent and depth of flooding
  - » Overlay this data with the assets to assess their vulnerability
- **Fallback approach:** Compare April storm's flood elevations to the county hazard mapping
  - » Identify which of the county's 54 flood scenarios most closely matches the event that happened
  - » Overlay this simulation with the assets to assess their vulnerability
- Include discussion of event and its impacts in the Vulnerability Assessment and Adaptation Plan

WE PROPOSE LEVERAGING THE COUNTY'S FL STATUTE COMPLIANT CLIMATE MODEL SCENARIOS

Scenario No.	Description	FL Section 380.093 Criteria					
		Compound Flooding	Rainfall-induced flooding	Storm surge greater or equal to 100-year event	High Tide Flooding	Two planning horizons (2040, 2070).	NOAA Intermediate-Low and Intermediate-High
RP-3	Future King Tide flooding from a 100-yr precipitation event with saturated groundwater system and 2 feet of sea-level rise	Y	Y	N/A	Y	Y	Y
VA-17	Current 100-storm surge event coinciding with a 25-yr precipitation event	Y	Y	Y	N/A	N/A	N/A
VA-20	Future (2040) 100-storm surge event coinciding with a 25-yr precipitation event (2017 NOAA Intermediate Low)	Y	Y	Y	N/A	Y	Y
VA-23	Future (2040) 100-storm surge event coinciding with a 25-yr precipitation event (2017 NOAA Intermediate High)	Y	Y	Y	N/A	Y	Y
VA-26	Future (2070) 100-storm surge event coinciding with a 25-yr precipitation event (2017 NOAA Intermediate Low)	Y	Y	Y	N/A	Y	Y
VA-29	Future (2070) 100-storm surge event coinciding with a 25-yr precipitation event (2017 NOAA Intermediate High)	Y	Y	Y	N/A	Y	Y

WE PROPOSE LEVERAGING THE COUNTY'S FL STATUTE COMPLIANT SCENARIOS





WE WILL USE A CHECKLIST OF FL STATUE 380.093(2), F.S REQUIREMENTS TO ENSURE COMPLIANCE

- ❑ **All critical assets**
  - Transportation assets & evacuation routes
  - Critical infrastructure (includes water, waste and energy facilities, etc)
  - Critical community & emergency facilities (includes hospitals, shelters, etc)
  - Natural, cultural, & historical resources
- ❑ **Regionally significant assets**
- ❑ **Peril of flood comprehensive plan amendments, when applicable**
- ❑ **Evaluation of flood risks including**
  - Tidal flooding depths, if applicable
  - Current and future storm surge inundation (minimum of 100-year flood event)
  - Rainfall-induced flooding, to the extent practicable
  - Compound flood risks, to the extent practicable
- ❑ **At least two local sea level rise scenarios including NOAA 2017 intermediate-low and intermediate-high**
- ❑ **At least two planning horizons that include 2040 and 2070**
- ❑ **Exposure and Sensitivity Analyses**

OUR EXPERIENCE ON SIMILAR PROJECTS, A FORMER FDEP STAFF ON THE TEAM ENSURE COMPLIANCE

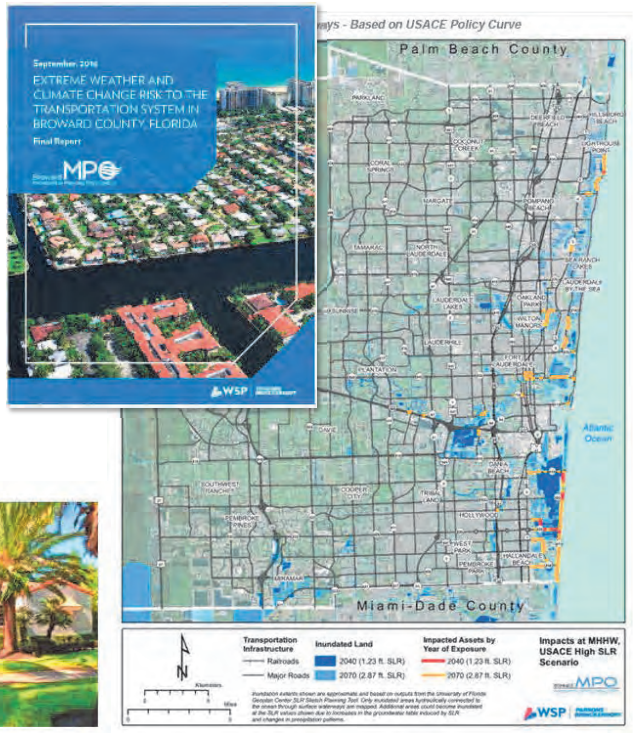
- We have completed compliant assessments
- We have experience working alongside our clients to meet deadlines and deliverables
- We understand the deliverable approval process
- We know the ins-and-outs of the DEP deliverable checklist

CURRENT SCOPE OF WORK INCLUDES ALL REQUIRED TASKS IN THE FLORIDA STATUTE.

- We will provide a fully compliant vulnerability assessment to make the City of Fort Lauderdale grant eligible.
- The City may want do the following items that are allowed under F.S. 380.093, but are not in this scope:
  - Peril of Flood Comprehensive Plan update
  - Full Adaptation Plan
  - Feasibility studies for nature-based solutions
  - Community engagement

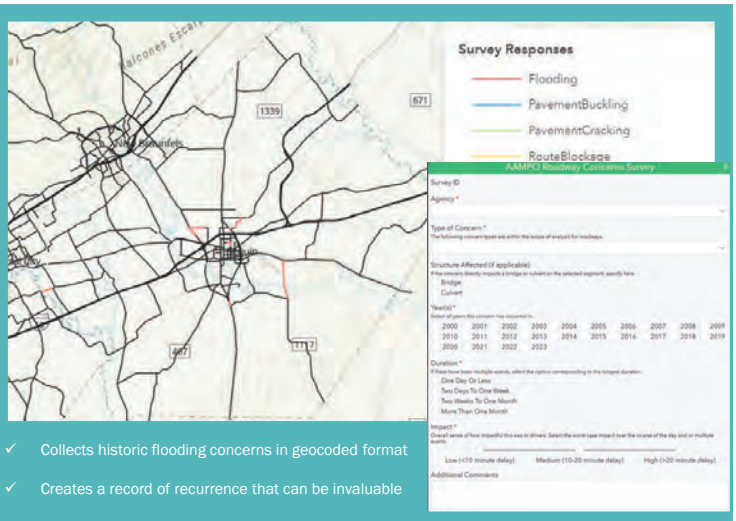
WE WILL ASSESS ALL HISTORICAL PROPERTIES & ROADWAYS

- Three Historic Districts, 64 historic properties will be studied.
- Roadways can be filtered to City-owned during prioritization.



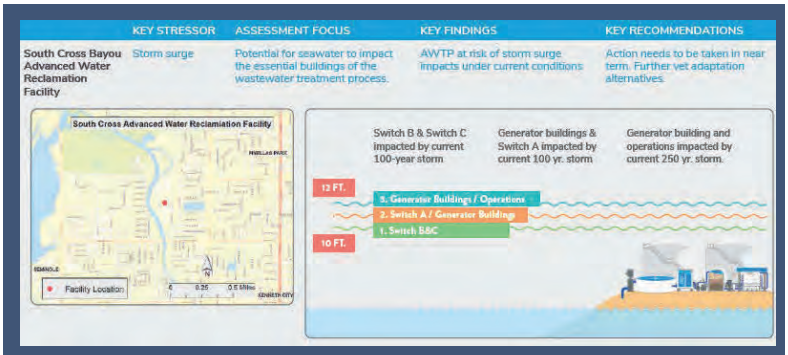
VALUE ADD WITHIN THE ALLOCATED FEES

1 Data-collection from Agency Staff using an interactive GIS-based tool (Survey 123)



- ✓ Collects historic flooding concerns in geocoded format
- ✓ Creates a record of recurrence that can be invaluable

2 Discussion with City Staff (TAM, Park & Rec, PW)



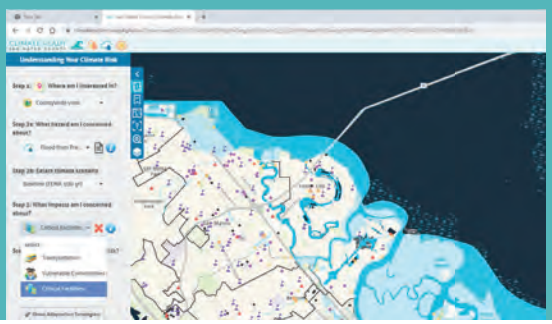
- ✓ Involves City Asset Staff
- ✓ Enables Buy-In and Advances Understanding
- ✓ Results in More Robust and Specific Analysis

VALUE ADD WITHIN THE ALLOCATED FEES

3 Application for **2023 Resilient Florida Planning Grant** supplementary funds

The application will request funding for identified needs during the study, including :

- ✓ Interactive adaptation decision-making GIS-based tool for inter-department coordination
- ✓ Critical infrastructure (facility-level) adaptation plan with construction cost estimates and benefit-cost
- ✓ community engagement



4 Make the case for **2023 Resilient Florida Implementation Grant**

- ✓ Assist with identifying the most appropriate project for the funding
- ✓ Assist with making the case using qualitative benefits vs cost of implementing the project

VALUE ADD WITHIN THE ALLOCATED FEES

5 Financial Tool for Climate Resilient Investments

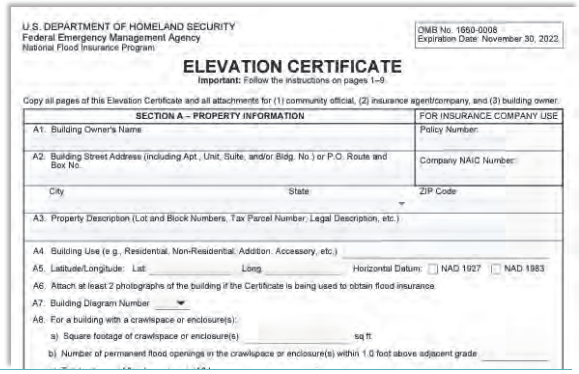
	GRANT	LOAN
FEDERAL		
DOT: RAISE, PROTECT, Safe Streets for All, Healthy Streets Program	●	
FEMA: BRIC, HMGP, PDM	●	
DOE: Energy Efficiency & Conservation Block Grant	●	
FLORIDA STATE		
FDEP Resilient Florida	●	
FDOT State Infrastructure Bank (SIB)		●
FDEP Clean Water State Revolving Fund		●
Hazard Mitigation State Revolving Fund (forthcoming)		●

WSP Tracks Federal Funding for Climate Investments with over **500 federal funding** programs totaling **more than $980B**.

Program Name	Climate Mitigation or Adapt...	Total Program Funding
Bridge Formula Program	Climate mitigation	$26,675,000,000
Bridge Investment Program	Climate mitigation Climate adaptation and resilience	$12,200,000,000
Bus and Bus Facilities Competitive Grants	Climate mitigation	$1,966,392,169
Bus and Bus Facilities Formula Grants	Climate mitigation	$3,161,294,400
Capital Investment Grants	Climate mitigation	$8,000,000,000
Carbon Reduction Program	Climate mitigation	$6,419,999,998

ELEVATION CERTIFICATES

- We will identify the critical facilities that require elevation certificates
  - The City entered CRS program 10/1/92. But, the City's first FEMA Flood Insurance Rate Map (FIRM) 11/3/1972. We will identify the buildings between the FIRM and CRS.
  - Under FEMA National Flood Insurance Program's (NFIP) Risk Rating 2.0, elevation certificates are not required for insurance.
- WSP will provide up to 66 elevation certificates



U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

OMB No. 1660-0008
Expiration Date: November 30, 2022

ELEVATION CERTIFICATE
Important: Follow the instructions on pages 1–9.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

SECTION A – PROPERTY INFORMATION	FOR INSURANCE COMPANY USE
A1. Building Owner's Name	Policy Number:
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.	Company NAIC Number:
City State	ZIP Code

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)

A5. Latitude/Longitude: Lat Long Horizontal Datum: ☐ NAD 1927 ☐ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number

A8. For a building with a crawlspace or enclosure(s):

a) Square footage of crawlspace or enclosure(s) sq ft

b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade

DELIVERABLES

Task 1

- Data gap analysis and actions taken to rectify.
- GIS files with appropriate metadata of the data compiled
- Project meetings' agendas, meeting minutes, project documents

Task 2

- Spreadsheet of critical and regionally significant assets.
- GIS files with appropriate metadata of the data compiled
- Critical assets that lack elevation certificates but necessary

Task 3

- List of assets with new elevation certificates
- Elevation Certificates signed and sealed

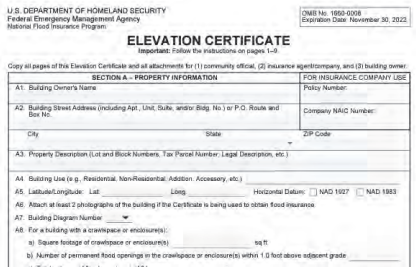
Infrastructure Assets Considered

The following table summarizes the assets that were considered in the risk assessment.

Table 1: Assets considered in the risk assessment.

CATEGORY	ASSET NAME
Airports	Airport Facility Building Footprints
	Airport Facility Footprints*
	Airport Facility Taxiways/Runways
Electricity	Power Plant Facility Building Footprints*
	Power Plant Facility Footprints
	Substation Facility Footprints*
Natural Gas	Gate Stations
	Meter Settings
	Regulator Stations
	Service Facility Building Footprints
	Service Facility Footprints*
Potable Water	Pump Station Facility Building Footprints
	Pump Station Facility Footprints*
	Treatment Facility Building Footprints
	Treatment Facility Footprints*
	Water Storage Tank Facility Building Footprints
	Water Storage Tank Facility Footprints*
	Wellheads
Railway	Rail Centerlines
Roads	ITS Cabinets
	Road Centerlines
Stormwater	Stormwater Discharges
Wastewater	Lift Stations
	Major Outfalls
	Manholes
	Treatment Facility Building Footprints
	Treatment Facility Footprints*

* Facility footprints represent the minimum bounding envelope containing a co of individual buildings comprising a facility.



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SECTION A – PROPERTY INFORMATION	FOR INSURANCE COMPANY USE
A1. Building Owner's Name	Policy Number:
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.	Company NAIC Number:
City State	ZIP Code

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)

A5. Latitude/Longitude: Lat Long Horizontal Datum: ☐ NAD 1927 ☐ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number

A8. For a building with a crawlspace or enclosure(s):

a) Square footage of crawlspace or enclosure(s) sq ft

b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade

Asset Class	Buildings	Parks & Nature Areas	Key Facilities	Transportation
Specific Assets	City Hall Oldsmar Library Council Chamber Woman's Club State Street Center Environmental Education Center Municipal Services Building Cypress Forest Recreation Center Fire Station 54	Sheffield Park Veterans Memorial Park Harbor Palms Nature Park Moccasin Creek Recreation Area R.E. Olds Park Mobbly Beach Park Bicentennial Park Mobbly Bayou Wilderness Preserve Cypress Forest Park Richard Rogers Park	Reverse Osmosis Water Treatment Plant (ROWTP) Water Reclamation Facility (WRF) High Service Pump at ROWTP Wastewater Lift Stations ROWTP Supply Wells	County-owned roads

City Assets Included in the Assessment

Deliverables

Task 4

- Climate models, maps illustrating flood depths
- GIS files with results of the exposure analysis

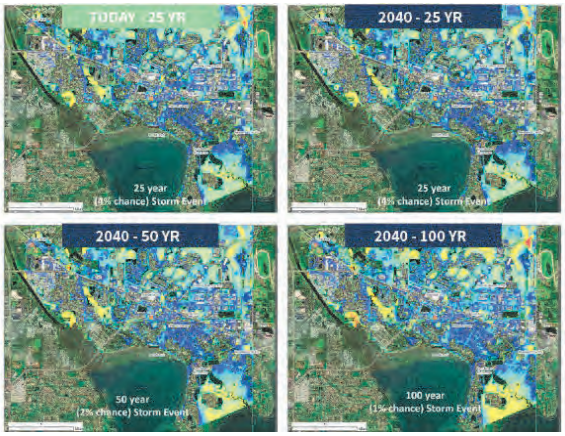
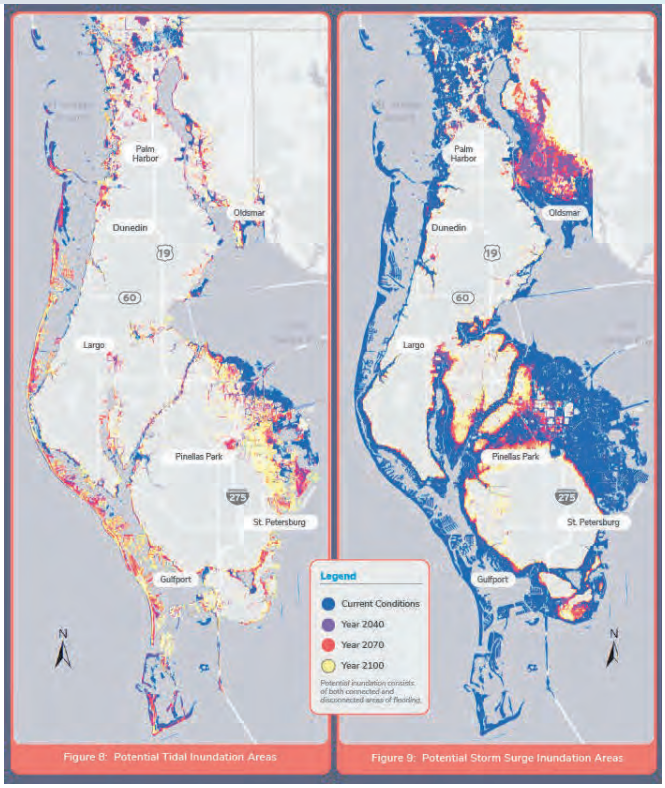


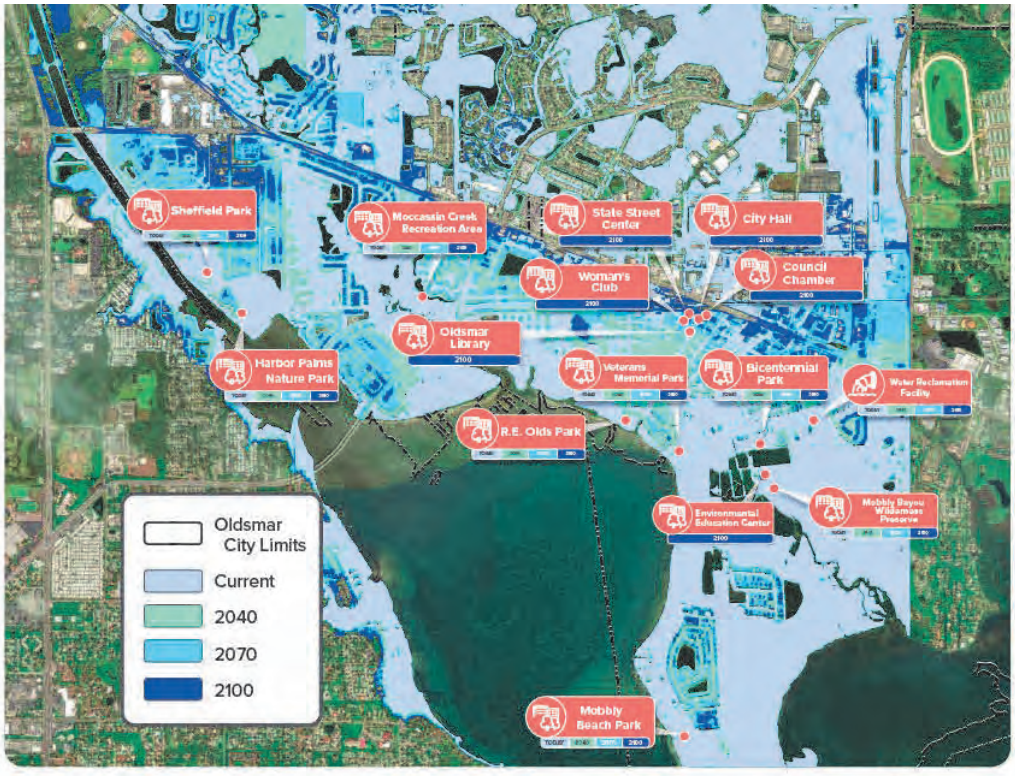
FIGURE 6 | 2040 Rainfall Flooding: 25, 50- and 100-Year Events



Deliverables

Task 5

- Results of exposure & sensitivity analysis
- List of critical assets



Deliverables

Task 7: Partial Adaptation Plan

1 Identify high-risk assets

2 Identify suite of possible adaptation strategies

3 Assess possible adaptation strategies against proposed criteria

Category	Criteria	Description
Technical	Applicability	Is the strategy applicable to Oldsmar?
	Implementation timeline	Can the strategy be implemented in the near, medium, and long-term?
	Cost	What are the capital and maintenance costs?
	Technical feasibility	Is it technically feasible to implement the strategy?
Political & Social	Political/regulatory feasibility	Is it feasible to get needed political support/regulatory approval for the strategy?
	Public acceptance	Does the public support the strategy?
Consequences	Co-benefits	What additional benefits might the strategy offer? (e.g., improved water quality)
	Potential cascading impacts	What other impacts might the strategy have on the community?

4 Identify recommended adaptation strategies for CRP

FIGURE 9 | Adaptation Planning Selection Criteria

SHORT-TERM MEASURES

TODAY

- Elevate electrical equipment to reduce exposure to saltwater flooding
- Elevate the filtrate lift station wetwell rim
- Elevate Lift Station and Production Well electrical systems above expected flood levels
- Increase funding for Inflow and Infiltration Lining Program to withstand capacities under future climate scenarios

MID-TERM MEASURES

2040

- Future capital equipment should be delivered and installed in such a way that it can be relocated to a new plant, if needed

LONG-TERM MEASURES

2070

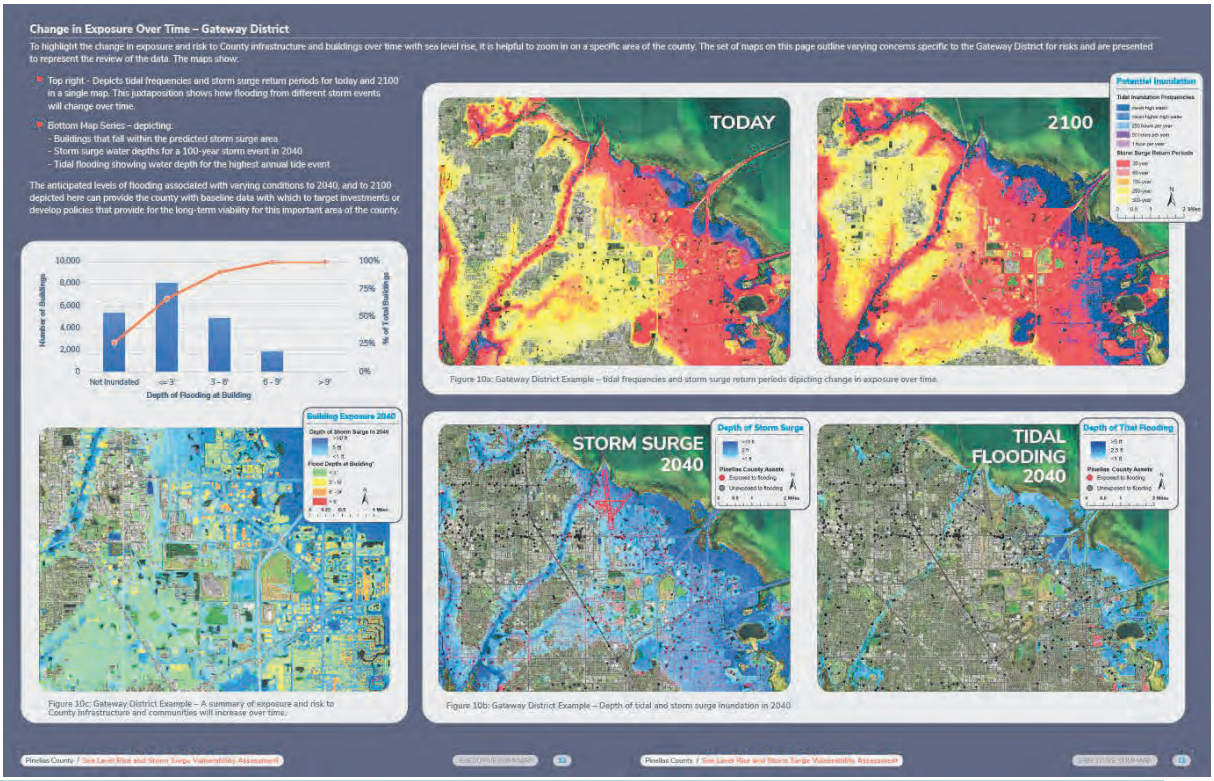
- Consider relocating the wastewater facility in long-term plans
- A large lift station will be required to replace the WRF at its current location and pump to a new, further inland location for the WRF

FIGURE 10 | WRF Adaptation Strategy Recommendations

Final Report will be summarized using compelling visuals and simple graphics

Task 6

Final Vulnerability Analysis Report



THIS TEAM is familiar with Broward County and the City of Fort Lauderdale

- **Clear understanding of the City's needs**
- Compelling Approach that **ensures F.S. Compliance**, as well as, **set up the City for future resilience funding**
- **Technical qualifications, similar projects experience** to deliver a compliant project on-time, on-budget
- **PM with 15-years resilience experience** – both national and Florida
- **Competitive project cost** with 66 elevation certificates and value-adds