

ELECTRONIC

REQUEST FOR QUALIFICATIONS PROFESSIONAL SERVICES FOR A VULNERABILITY ASSESSMENT STUDY & PLAN



PROPOSED TO:

TOWN OF JUNO BEACH

340 Ocean Drive
Juno Beach, FL 33408

PROPOSED BY:

**APTIM ENVIRONMENTAL &
INFRASTRUCTURE, LLC**

6401 Congress Ave #140
Boca Raton, FL 33499

Due: August 5, 2024

The information contained in this proposal contains proprietary and confidential financial and business information and shall not be used or disclosed, except for evaluation purposes, without the written consent of Aptim Environmental & Infrastructure, LLC, provided that if a contract is awarded to Aptim Environmental & Infrastructure, LLC as a result of or in connection with the submission of this proposal, the requester shall have the right to use or disclose the data to the extent provided in the contract. This restriction does not limit the requester's right to use or disclose any technical data obtained from another source without restriction.

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August 5, 2024

Aptim Environmental & Infrastructure, LLC
6401 Congress Ave, Suite 140
Boca Raton, FL 33499

Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408

Subject: Request for Qualifications Professional Services for a Vulnerability Assessment Study & Plan

Dear Andrea Dobbins, Project Coordinator/Risk Manager:

Aptim Environmental & Infrastructure, LLC (APTIM), a Louisiana Limited Liability Company incorporated on April 23, 2002 (22 years), is pleased to respond to the Request for Qualifications (RFQ) for the Vulnerability Assessment Study & Plan for the Town of Juno Beach (the Town).

As a national environmental and engineering consulting firm, **APTIM is a recognized leader in environment, resilience, and sustainability services, committed to building a sustainable future for communities and natural world, accelerating the transition to a clean and efficient energy economy and creating a more inclusive and equitable environment that celebrates the diversity of our communities.** Our local offices have established a consortium of excellence to support delivery of the most useful vulnerability assessments and resilience plans in compliance with the Resilient Florida grant program guidance.

I have also assembled the most experienced collective of resilience engineers, planners, and infrastructure subject matter experts from APTIM's local offices in South Florida to ensure proper staffing for quality and responsiveness. APTIM has partnered with **Miller Legg** to **provide additional civil, stormwater and living shoreline engineering support**, and we are ready to leverage our combined expertise and are committed to delivering solutions that address the Town's most pressing challenges. Our resilience team is ready, able and dedicated to providing the scope deliverables on time and on budget with intent to exceed the Town's expectations.

Congratulations on receiving your grant award and the chance to strategize for comprehensive resilience throughout your community; we have witnessed firsthand the benefits that arise from this effort.

Kind Regards,
Aptim Environmental & Infrastructure, LLC

A handwritten signature in black ink that reads 'Samantha Danchuk'.

Samantha Danchuk, PhD, PE
Climate and Coastal Resilience Lead
Phone: 561 361 3199 Email: Samantha.Danchuk@APTIM.com

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC

**CERTIFICATE OF THE CORPORATE ASSISTANT SECRETARY
OF APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC**


CORPORATE RESOLUTION

I, **Todd Kindler**, do hereby declare and certify that I am duly elected, qualified and acting Assistant Secretary of Aptim Environmental & Infrastructure, LLC, (the "Company"), a limited liability company duly organized and validly existing under the laws of the State of Louisiana, and that in such capacity, I do hereby declare and certify the following:

In accordance with the authority granted by the Company's Managing Member and its governing documents (and associated approved delegations thereof), **SAMANTHA DANCHUK, Climate and Coastal Resilience Lead**, has the authority to and is empowered to act for and on behalf of the Company in executing in the name of the Company, any and all types of proposals, bids, contracts, agreements, documents and instruments of whatever nature or kind necessary relating to the **Request for Qualifications for the Town of Juno Beach, Florida for Professional Services for a Vulnerability Assessment Study & Plan**.

IN WITNESS WHEREOF, I have herewith signed my name and affixed the seal of Aptim Environmental & Infrastructure, LLC on this 26th day of July 2024.

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC

By: 
Name: **Todd Kindler**
Title: **Assistant Secretary**

Corporate Seal:



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TAB 1

FIRM QUALIFICATIONS





FIRM QUALIFICATIONS

On the following pages you will find our qualifications including subconsultants, proposed team, and approach and methodology.



APTIM At-A-Glance

Established

Aptim Environmental & Infrastructure, LLC (APTIM), a Louisiana Limited Liability Company incorporated on April 23, 2002

Employees Worldwide

3,000+

Offices

49

Services

Critical Infrastructure
Technical and Data Solutions
Program Management
Environmental Services
Resilience
Sustainability and Energy Solutions for

- ▶ Government Agencies
- ▶ Commercial and Industrial
- ▶ Energy Markets

Expertise

Emergency Response
Disaster Recovery
Environmental Assessment
Grant Management
Design and Construction Related Services
Construction Management
Cost Estimating

Website

www.APTIM.com

Aptim Environmental & Infrastructure, LLC (APTIM)

offers the Town the recent and relevant experience of a firm that has **successfully managed 35 grant-funded programs valued at over \$30B** and was ranked by Engineering News-Record (ENR) as a top 9 environmental management firm.

As a national environmental and engineering consulting firm, **APTIM is a recognized leader in environment, resilience, and sustainability services.** We are committed to building a sustainable future for communities and the natural world, accelerating the transition to a clean and efficient energy economy and creating a more inclusive and equitable environment that celebrates the diversity of our communities.

Our local offices have established a consortium of excellence to support delivery of the most useful vulnerability assessments and resilience plans in compliance with the Resilient Florida grant program guidance.

APTIM's resilience team not only has experience completing compliant vulnerability assessments but has experience pushing beyond requirements to incorporate a greater array of resilience metrics. Through our work on the Miami Dade Resilience Hubs Energy Vulnerability Assessment, we have mastered integrating energy resilience into overall vulnerability assessments and stand ready to employ results from this study into the Town's vulnerability assessment. Our team also stands ready to employ methods to better capture residential resilience, as learned through our hazard mitigation work with the New York City Housing Authority (NYCHA).

APTIM works to strengthen communities so they are prepared to resist climate change, bounce back after crisis, and rapidly recover with minimal assistance. We have planned for and implemented programs that mitigate impacts to critical assets, manage economic stressors and protect people. We understand the process of building resilience from assessment to implementation to iterative performance improvements and leveraging grant funding to achieve greater outcomes.



Experience with Vulnerability Assessments

The APTIM Team has a comprehensive understanding of vulnerability assessments and resilience planning best practices, including the criteria of regional and national ranking systems, relevant policy, resilience plans and research, and collaborative opportunities.

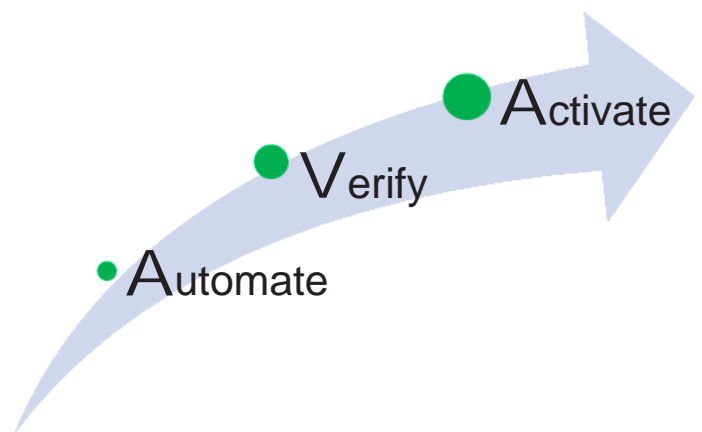
Our team consists of a variety of climate experts who specialize in local hazard modeling, assessments, and adaptation. Our experts have experience modeling local flood conditions and employing rainfall predictions and change factors established by the South Florida Water Management District (SFWMD) into scenario planning.

APTIM has recently finalized vulnerability assessments in accordance with state guidelines across more than twelve coastal and inland counties: Miami-Dade, Broward, Manatee, Sarasota, Lee, Monroe, Escambia, Santa Rosa, Okaloosa, Walton, Bay County, and Brevard, both at municipal and county levels (**Figure 1-1**).



Figure 1-1 Municipal and County-Level Vulnerability Assessments and Adaptation Plans

APTIM employs a well-established methodology for assessments, ensuring normalized and unbiased results. Our proven process is known as AVA and stands for Automate, Verify, and Activate.



Data collection, mapping, analysis, ground-truthing and impact quantification have been refined and automated. Results of the automation process then go through a verification process involving extensive QA/QC, a deep dive into patterns, and a ground-truthing element where results are contextualized based on stakeholder and public experience.

Findings are then organized and reported in a tangible way that activates municipality discussion and implementation, ensuring all results are actionable.

The mature network of relationships available to support this project extends from grassroots social organizations in the unincorporated area, to in-house staff at the South Florida Water Management District, research and policy development partners at the United States Army Corps of Engineers (USACE) and the Florida Department of Transportation (FDOT).

Local knowledge will be critical for ground-truthing the results of the assessment and developing practical, feasible and detailed strategies for resilience.

SUBCONTRACTOR TEAM

APTIM is dedicated to partnering to achieve the Town's planning goals through insight, knowledge, and discipline. Our consultant will work together as a critical part of the team, bringing their expertise to address the needs of the Town.

We carefully and purposefully consider our partners based on our working relationship, including the integrity with which they have performed.

Our proposed team members bring relevant experience, a proven methodology based on a willingness to collaborate, and a depth of talent built upon the diversity of our experiences to this project.



engineering support, Miller Legg is a statewide award-winning consulting firm that brings together the elements of planning, landscape architecture and urban design, engineering, surveying, environmental wetlands consulting, environmental engineering and geographic information systems services.

Miller Legg works successfully to improve communities and create environments for a variety of clients.

The firm has completed numerous municipal, county, state and federal projects ranging from city-wide GIS base mapping, environment sensitivity and characterization studies, neighborhood improvement projects, school site planning and neighborhood parks to regional water and sewer utilities, cemeteries, streets and highways, traffic engineering studies, drainage studies and design, and complete GIS services.

The firm's **GIS consulting services include: GIS database design, data conversion and processing; GIS/GPS integration; GPS data collection and system design, map production, remote sensing application and digital image collection, environmental modeling, feasibility and implementation studies, and municipal asset management.**

Our environmental professionals have **comprehensive experience in wetland delineations, wildlife surveys, mitigation feasibility studies, environmental assessments and audits, coastal, living shorelines, and resiliency analysis, mitigation design, planning and construction observation, arborist services, value engineering, cost evaluation and scheduling, and environmental permitting** for both public and private-sector clients.



WE UTILIZE OUR SUBCONTRACTORS
TO COMPLEMENT NOT SUPPLEMENT
OUR TEAM

STAFF QUALIFICATIONS

With the vision and experience to lead this project for the Town, **Samantha Danchuk, PhD, PE**, will serve as Project Manager and will oversee and spearhead all tasks. She is one of the foremost technical and policy experts on resiliency in Florida. Dr. Danchuk has 18 years of program/project management and resilient engineering experience, including seven years as Broward County's Assistant Chief Resilience Officer and Capital Program Administrator and 10 years as a coastal resilience engineer with projects in nine states. She has **experience in vulnerability and risk assessments, coastal hazard modeling, strategic flood and energy resilience policy, and futureproofed infrastructure engineering** serving to support environmental sustainability and redevelopment of vulnerable regions. She was the technical advisor for the Southeast Florida Regional Climate Change Compact.

Dr. Danchuk led the development of two regional sea level rise projections, multiple climate adaptation plans, heat and flood risk assessments, execution of two federal shore protection projects and implementation of national award-winning future conditions policy for redeveloping with sea level and groundwater rise. She is also a long term resident of the area with first hand observations during major floods and changes in shorelines and development.

Below is an overview of our proposed team and their respective roles.

Bridget Huston, MURP, AICP | Resilience Planner and Public Outreach

- ▶ Eight years of experience as a resilience planner with experience in vulnerability assessments
- ▶ Experience collecting, analyzing, and interpreting data for vulnerability assessments and conceptualizing adaptation strategies
- ▶ Experience with community outreach and engagement strategies

Cigdem Ozkan, PhD, PE, WEDG | Resilience Specialist/Coastal Engineer and Public Outreach

- ▶ Nine years of experience investigating innovative solutions to resiliency challenges.
- ▶ Experience in collecting, analyzing, and interpreting data and conceptualizing adaptation strategies
- ▶ Experience in stormwater modeling, flood and erosion control, and coastal modeling
- ▶ Experience with community outreach and engagement strategies

Heather Vollmer, GISP | GIS Lead

- ▶ 24 years of experience GIS experience including maintenance, management, creation, quality control, spatial analysis of sediment resources, remote sensing, ground truthing and GPS field experience
- ▶ Creation of a geodatabase of sediment resources for the USACE Inventory of Regional Sediment Management

Hithaishi Hewageegana, PhD | Numerical Modeler

- ▶ Senior numerical modeler focused on hydrodynamics and morphodynamics in nearshore environments
- ▶ Experience with various coastal modeling projects from sediment transport to water quality collecting, from idealized conditions to multiyear hindcasts

Doris Otero, PhD, CFM | Coastal Engineer

- ▶ 12 years of experience managing diverse teams in coastal and beach nourishment projects throughout Florida

16

Vulnerability Assessments



17

Resilience Plans



- ▶ Expertise in supporting projects with FEMA PA submittals

Douglas Mann, PE, BC.CE | Coastal Engineer

- ▶ 37 years of experience in all aspects of coastal engineering including dredge and fill projects for material disposal and beach nourishment, beach and inlet engineering
- ▶ Experienced in Joint Coastal permitting, Environmental Resource permitting, and Florida Department of Environmental Protection (FDEP) Coastal Construction Control Line permitting

William Mohler, CA, TRAQ, PWS, CLI | Environmental Scientist / GIS Specialist

- ▶ 16 years of experience experienced in Geographic Information Systems (GIS) concepts, principles and practices
- ▶ Experience in digital map creation, geodatabase creation and utilization, geoprocessing, georeferencing and editing, digitizing, remote sensing, photo interpretation ground truthing and utilizing Arc Toolbox functions

Peter Pellerito, PE | Drainage Engineer

- ▶ 34 years of experience encompassing soil and groundwater remediation; water treatment and wastewater pre-treatment systems; water and wastewater pump stations and transmission lines; site planning; earthwork; drainage systems; paving and grading; erosion control / stormwater pollution prevention; roadway design and specifications
- ▶ Proficient in Civil 3D, Traffic Impact Statement analysis, open channel flow modeling, and lift station design

Saeid Zare | GIS Specialist

- ▶ Seven years of experience as a GIS Specialist
- ▶ Four years of experience extensively working on the preparation of existing land use maps, cartography, schematic GIS design and structure plans using GIS technology and ArcGIS software

Our proposed team is fully available and committed to this project from start to finish. The APTIM Team understands the importance of this project to the Town of Juno Beach and is ready to dedicate the necessary time and resources to ensure its successful completion.

Our Organization Chart (**Figure 1-2**) presents our proposed personnel. This team possesses diverse skills, including knowledge of and experience with local climate modeling, geographic information systems (GIS), risk assessment methodologies, local environmental policy insights, and public engagement. **Collectively, the proposed APTIM Team has advanced 16 vulnerability assessments and 17 resilience plans.** Full resumes of each team member follow the organization chart.



The following team organization chart is structured to reflect deliverables per task.



Figure 1-2 Organization Chart

LEGEND

- © Task Lead
- ▶ APTIM
- ▶ Miller Legg



SAMANTHA DANCHUK

PHD, PE - PROJECT MANAGER

CLIMATE AND COASTAL RESILIENCE LEAD | APTIM

18 YEARS
EXPERIENCE

EDUCATION

- ▶ PhD Civil Engineering, Louisiana State University
- ▶ MS Environmental Engineering, University of California, Berkeley
- ▶ BS Environmental and Civil Engineering, Florida State University

PROFESSIONAL LICENSE OR CERTIFICATION

- ▶ Professional Engineer, Civil, Florida
- ▶ LEED-Green Associate

SPECIAL SKILLS

- ▶ Project Management
- ▶ Vulnerability/Risk Assessment
- ▶ Community Outreach

PROFESSIONAL SUMMARY

Ms. Samantha Danchuk, PhD, PE, is the Program Manager for APTIM's Florida Resiliency Program. She has experience in vulnerability and risk assessments, coastal hazard modeling, strategic flood/energy resilience policy, and futureproofed infrastructure engineering serving to support environmental sustainability and redevelopment of vulnerable regions. She also has a strong reputation as a trusted source amongst regional and national climate adaptation networks and credited as the technical lead for nationally recognized policy and project case studies.

RELEVANT EXPERIENCE

Aptim Environmental & Infrastructure, LLC, Climate and Coastal Resilience Lead; June 2021–Present

Project Manager; City of Delray Beach, Vulnerability Assessment & Adaptation Plan, Delray Beach, FL

Resilient Florida funded adaptation plan to address flooding across the city, both inland and along the intracoastal. Project included interviews to assess adaptive capacity, public outreach and staff engagement to inform adaptation strategies and plan development.

Project Manager; Escambia County Vulnerability Assessment

APTIM, in collaboration with Jacobs, is performing exposure and sensitivity analysis to assess vulnerabilities for critical assets and resources. Project was Resilient Florida grant funded and in compliance with guidance. Geospatial modeling, hazard analysis, risk calculations and mapping was included.

Project Manager; Okaloosa County Vulnerability Assessment

APTIM, in collaboration with Jacobs, is performing sensitivity analysis to assess vulnerabilities for critical assets and resources. Project was Resilient Florida grant funded and in compliance with guidance. Geospatial modeling, hazard analysis, risk calculations and mapping was included.

Project Manager; City of West Miami Vulnerability Assessment

Performing exposure and sensitivity analysis to assess vulnerabilities for critical assets and resources. Project was Resilient Florida grant funded and in compliance with guidance. Geospatial modeling, hazard analysis, risk calculations and mapping was included. Priority focus was given to schools, drainage infrastructure and parks.

Project Manager; Captiva Island Flood Risk Vulnerability Assessment

Responsible for coastal hazard vulnerability assessment, GIS risk mapping, resilient capital improvement plan and community adaptation strategy. Sup-

(SAMANTHA DANCHUK) CONTINUED

ported presentations to officials and special committee on sea level rise. Developed materials for public education on risk and coastal processes.

Project Manager; Longboat Key Sea Level Rise Vulnerability Assessment Adaptation Plan

Resilience Engineer responsible for coastal hazard vulnerability assessment, risk mapping, resilient capital improvement plan and community adaptation strategy.

Project Manager; Resilient Florida Adaptation Planning Guidebook and Performance Metrics, Florida

State guidebook on adaptation planning and development of performance metrics and technical standards for projects funded by state resilience grants. Tasks included engaging stakeholders statewide to incorporate feedback on best practices, legislative compliance review and guidebook development with example methods and tasks.

Project Manager; Central Florida Military Installation Resilience Review (MIRR)

Environmental, socioeconomic, and future conditions vulnerability assessment of the ability of the military to carry out its missions at Patrick Space Force Base, Cape Canaveral Space Force Station, Naval Support Activity Orlando, and related support facilities.

Project Manager; AARFRC Atlantic Council–Miami Dade County Resiliency Hub and Vulnerability Assessment

Countywide risk assessment of electrical infrastructure and social vulnerabilities to support siting of resilience hub prototypes. Developed new methodology for weighting energy burden, local system reliability and infrastructure risk by census tract. Developed criteria and questions for stakeholder outreach and interviewed residents.

Project Manager; South Florida Military Installation Resilience Review (MIRR), Vulnerability Assessment and Data Collection

Environmental, socioeconomic, and future conditions vulnerability assessment of the ability of the military to carry out its missions on Homestead Air Force Reserve Base, SOUTHCOM, Naval Surface Warfare Center and Naval Air Station Key West that could be mitigated through community investments and solutions. Interviewed focus groups of data owners including utilities, local governments, and infrastructure owners to identify vulnerabilities. Supported organization and presentations for workshops to identify critical missions, project objectives and potential projects.

Project Manager; Northwest Florida Military Installation Resilience Review (MIRR), Vulnerability Assessment and Data Collection

Environmental, socioeconomic, and future conditions vulnerability assessment of the ability of the military to carry out its missions on Eglin Air Force Base, Hurlburt Field, Naval Support Activity Panama City, Naval Air Station Pensacola, Tyndall Air Force Base, Naval Air Station Whiting Field, and major tenant units. Tasks included data collection, modeling impacts of potential threats, resilience assessment, asset prioritization, and base and community engagement.



8 YEARS
EXPERIENCE

EDUCATION

- ▶ MS, Urban and Regional Planning, Florida Atlantic University
- ▶ MS Environmental Science, Florida Atlantic University
- ▶ BS Biology, University of Florida

SPECIAL SKILLS

- ▶ Vulnerability/Risk Assessment
- ▶ Technical Writing
- ▶ Data Collection and Analysis
- ▶ Community Outreach

BRIDGET HUSTON

MURP, AICP - RESILIENCE PLANNER

CLIMATE AND URBAN RESILIENCE SPECIALIST | APTIM

PROFESSIONAL SUMMARY

Ms. Bridget Huston is an experienced resilience planner and project assistant. She has experience with vulnerability assessments, applying visualization and climate scenario tools for project evaluation, hazard mitigation and adaptation plan development and implementation, grant proposal and report writing, qualitative and quantitative data collection and analysis, community outreach, and surveying.

RELEVANT EXPERIENCE

Aptim Environmental & Infrastructure, LLC, Climate and Urban Resilience Specialist; June 2022–Present

Resilience Project Manager, City of Delray Beach, Vulnerability Assessment & Adaptation Plan, Delray Beach, FL

Assisted in the development of the Adaptation Plan for the City of Delray Beach. Responsibilities included conducting comprehensive research on climate impacts, engaging with city officials and the public to gather input, and drafting the adaptation strategies.

Resilience Project Manager; Escambia County Vulnerability Assessment

Working with Jacobs in evaluating and addressing vulnerabilities in Escambia County. Key responsibilities include utilizing advanced analytical tools to assess flood exposure, sensitivity, and risk, and leading a team to gather and analyze impacts.

Resilience Project Manager; City of West Miami Vulnerability Assessment

Leading the comprehensive vulnerability assessment for the City of West Miami. Responsibilities included data collection, flood hazard mapping, identifying and analyzing risks to critical assets and community infrastructure associated with flooding of various types and collaborating with local stakeholders to gather critical data.

Deputy Project Manager; Captiva Island Flood Risk Vulnerability Assessment

Responsible for collecting, analyzing, and interpreting hazard and critical infrastructure data, conceptualizing adaptation strategies, and completing the vulnerability assessment report. Created funding opportunities matrix for adaptation strategies and informative community outreach resources.

Resilience Project Manager; Resilient Florida Adaptation Planning Guidebook and Performance Metrics, Florida

Assisted in the update of the of the Florida Department of Environmental Protection's Resilient Guidebook. Responsibilities included researching best practices, compiling case studies, and writing actionable recommendations for local governments.



CIGDEM OZKAN

PHD, PE, WEDG – RESILIENCE SPECIALIST AND COASTAL ENGINEER

CLIMATE AND COASTAL RESILIENCE ENGINEER | APTIM

9 YEARS
EXPERIENCE

EDUCATION

- ▶ PhD Civil and Environmental Engineering, University of Central Florida
- ▶ MS Civil and Environmental Engineering, University of Central Florida
- ▶ BS Civil Engineering, Middle East Technical University, Ankara, Turkey

PROFESSIONAL LICENSE OR CERTIFICATION

- ▶ Professional Engineer, Civil, Florida
- ▶ Waterfront Edge Design Guidelines (WEDG) Associates

TRAINING

- ▶ ICPR4, Online, 2022

SPECIAL SKILLS

- ▶ Vulnerability/Risk Assessment
- ▶ Community Engagement
- ▶ Data Collection / Analysis
- ▶ Technical Writing
- ▶ FEMA Coastal Flooding

PROFESSIONAL SUMMARY

Ms. Cigdem Ozkan, PhD, PE, has nine years of experience investigating innovative solutions to resiliency problems and energy demands through an environmentalist approach. Ms. Ozkan integrates nature-based solutions with engineered infrastructures to resolve complex environmental challenges

RELEVANT EXPERIENCE

Aptim Environmental & Infrastructure, LLC, Climate and Coastal Resilience Lead; June 2023–Present

Resilience Engineer; City of Delray Beach, Vulnerability Assessment & Adaptation Plan, Delray Beach, FL

Assisted in the development of the Adaptation Plan for the City of Delray Beach. Responsibilities included conducting comprehensive research on climate impacts, engaging with city officials and the public to gather input, and drafting the adaptation strategies.

Resilience Engineer; Escambia County Vulnerability Assessment

Working with Jacobs in evaluating and addressing vulnerabilities in Escambia County. Key responsibilities include utilizing advanced analytical tools to assess flood exposure, sensitivity, and risk, and leading a team to gather and analyze impacts.

Resilience Engineer; City of West Miami Vulnerability Assessment

Assisted with the comprehensive vulnerability assessment for the City of West Miami. Responsibilities included data collection, flood hazard mapping, identifying and analyzing risks to critical assets and community infrastructure associated with flooding of various types and collaborating with local stakeholders to gather critical data.

Resilience Engineer; Captiva Island Flood Risk Vulnerability Assessment

Assisted with collecting, analyzing, and interpreting hazard and critical infrastructure data, conceptualizing adaptation strategies, and completing the vulnerability assessment report. Created funding opportunities matrix for adaptation strategies and informative community outreach resources.

Resilience Engineer; Resilient Florida Adaptation Planning Guidebook and Performance Metrics, Florida

Led the efforts to update the Florida Department of Environmental Protection (FDEP) Florida Adaptation Planning Guidebook and development of Resilient Florida Planning Grant Tasks. Included coordination with the client, project management for timely deliverables, and organizing and hosting a public workshop with 300 attendees. Contributions involved creating content for the new sections of the guidebook, and updating outdated references with current resources and best practices.



HEATHER VOLLMER

GISP - GIS SPECIALIST

GEOSPATIAL SYSTEMS SENIOR SPECIALIST I | APTIM

24 YEARS
EXPERIENCE

EDUCATION

- ▶ MS Environmental Studies, Florida International University
- ▶ BS Environmental Studies, Stockton University

PROFESSIONAL LICENSE OR CERTIFICATION

- ▶ Certificate of Geographic Information Systems GIS Professional (GISP)

SPECIAL SKILLS

- ▶ Ocean/Coastal GIS in Florida
- ▶ Story Mapping

PROFESSIONAL SUMMARY

Ms. Heather Vollmer is a GIS professional with 24 years of experience in GIS data mining, engineering and maintenance, remote sensing, spatial analysis, supporting documentation and web app development. She is heavily involved in innovating the application of geospatial technologies to further advance the understanding of coastal management. Since joining APTIM in 2006, Ms. Vollmer has been charged with providing geospatial technological support to streamline and improve client projects and deliverables.

RELEVANT EXPERIENCE

Aptim Environmental & Infrastructure, LLC, Geospatial Systems Senior Specialist I, October 2006–Present

GIS Specialist; Town of Longboat Key Sea Level Rise and Recurring Storms Adaptation Plan

Ms. Vollmer is responsible for all GIS spatial analysis, data creation, maintenance, and QA/QC, supporting report documentation (figures, tables, technical write-ups).

GIS Specialist; Sea Level Vulnerability Assessment, Captiva Island, FL

Collected, analyzed, and interpreted data, conceptualized adaptation strategies, and completed assessment report. Responsible for all GIS spatial analysis, data creation, maintenance, and QA/QC, supporting report documentation (figures, tables, technical write-ups).

GIS Specialist; South Florida Military Installation Resilience Review (MIRR), South Florida

Collected data for four local military installations across three counties via continuous outreach and research. Analyzed results and produced summary graphics and trends for the exposure, sensitivity, adaptive capacity, and risk analyses.

GIS Specialist; Rebuild by Design Atlas of Disaster Mapping

Assisted on analyzing critical infrastructure for hazard vulnerabilities and report documentation and maps. Our new report “Atlas of Disaster” – at over 650 pages with over 300 maps – provides a blueprint for equitable climate adaptation planning, offers new funding sources to invest in resilient infrastructure, and provides a framework for better decision-making for government, the private sector, philanthropy, and finance.



HITHAISHI HEWAGEEGANA

PHD - NUMERICAL MODELER

SENIOR NUMERICAL MODELER | APTIM

9 YEARS
EXPERIENCE

EDUCATION

- ▶ PhD Coastal Engineering
University of Florida
- ▶ MS, Coastal Engineering Delft
University of Technology (TU
Delft), The Netherlands
- ▶ BS Civil Engineering University
of Moratuwa, Sri Lanka

SPECIAL SKILLS

- ▶ Expertise in hydrodynamic, morphodynamic and water quality modeling and analysis
- ▶ Expert proficiency in numerical modeling with XBeach, ROMS
- ▶ Expert proficiency in programming with Python and ArcGIS
- ▶ Proficiency in numerical modeling with Delft3D and SWASH

PROFESSIONAL SUMMARY

Mr. Hithaishi Hewageegana, PhD is a senior numerical modeler focused on hydrodynamics and morphodynamics in nearshore environments. He has gained experience in applying advanced numerical models to solve nearshore problems. He is also a competent programmer in MATLAB, FORTRAN, and Python and skilled in ArcGIS and programming using Arcpy modules. He has worked in various coastal modeling projects from sediment transport to water quality, from idealized conditions to multiyear hindcasts, and from 1D models to hundreds of square km coastal and estuarine systems.

RELEVANT EXPERIENCE

Aptim Environmental & Infrastructure, LLC, Senior Numerical Modeler, March 2023–Present

Numerical Modeler; Pinellas County Sand Key Structural Evaluation, Pinellas County, FL

Performed littoral budget development and analyzed the sediment transport patterns in the project area to support analysis of the implementation of possible coastal structures.

Numerical Modeler; Indian River County, Florida Modeling Memorandum Sebastian Inlet TAC

Performed quality control review of the IRC numerical modeling and implemented a series of modeling improvements, assisted the project manager in finalizing the deliverables to the client.

Numerical Modeler; Terrebonne Parish, LA Flood Elevation Review

Performing data review and flood modeling in support of the parish. Anticipated services: coastal engineering with emphasis on numerical modeling.

Numerical Modeler; Coastal Process Analysis at Sand Island Beach, HI

Performed coastal processes analysis for the Sand Island beach to aid in the proposed beach restoration project.

Numerical Modeler; Sunset Beach Groin Evaluation Project (ongoing), Pinellas County

Detailed modeling of coastal hydrodynamics and morphodynamic to understand the processes and provide optimal alternatives to improve beach performance at Sunset beach.

Numerical Modeler; Terrebonne Parish Flood Insurance Study Preparation of LOMR (Letter of Map revision) (on going)

Wave propagation modeling for the entire Terrebonne parish and preparation of flood maps for the Terrebonne Parish, LA.



DORIS OTERO

PHD, CFM - ADAPTATION SPECIALIST

PROJECT MANAGER | APTIM

12 YEARS
EXPERIENCE

EDUCATION

- ▶ PhD, Environmental Engineering, Texas A&M University-Kingsville
- ▶ MS, Environmental Engineering, Texas A&M University-Kingsville
- ▶ BS, Environmental Engineering, Universidad Pontificia Bolivariana, Bucaramanga, Colombia

PROFESSIONAL LICENSE OR CERTIFICATION

- ▶ Certificate Floodplain Manager

SPECIAL SKILLS

- ▶ Coastal and Environmental
- ▶ Beach Nourishment
- ▶ Coastal Structures
- ▶ Numerical Modeling of Coastal Processes
- ▶ Inlet Management

PROFESSIONAL SUMMARY

Mrs. Doris Otero, PhD, CFM is a Project Manager providing a variety of management and engineering services. She has managed diverse teams in coastal and beach nourishment projects throughout Florida. Her expertise includes supporting projects with FEMA PA submittals. Her recent projects have included engineering analysis, development of construction plans and specifications, project administration, construction bidding support and administration, post-construction monitoring calculations, construction observations and report preparation.

RELEVANT EXPERIENCE

Aptim Environmental & Infrastructure, LLC, Project Manager, December 2013–Present

Coastal Engineer; City of Delray Beach, Canal Vulnerability Assessment, Delray Beach, FL

Assisted in assessment of City's vulnerability to future seasonal flooding and identified potential options to protect infrastructure and citizen's property. Reviewed available water level data, analyzed return periods of extreme events, and considered sea level rise guidance to determine water level projections for the City's requested 30-year and 75-year plan.

Coastal Engineer and Modeler; Texas Coastal Resiliency Plan for the Protection of Critical Infrastructure along the Texas Coast

Assisted in the coastal resiliency study for the State of Texas. Compiled information from 22 different coastal Texas counties. Organized information into a database to create online decision supporting tool.

Coastal Engineer; Captiva Island Post-Hurricane Ian Assessment & Reporting, FL

Developed and prepared the storm impact assessment engineering report. The report summarized and discussed post-storm survey data and impacts from Hurricane Ian on the Captiva Island nourishment project. The data obtained from the beach profile topographic and hydrographic surveys was plotted and compared to the latest survey collected in November 2021. Shoreline and volume changes relative to the November 2021 survey were computed. The report included graphical representations of volumetric comparisons and shoreline position changes. The background erosion since the pre-storm condition was also estimated using existing survey data and separated from storm-related impacts. A cost estimate to repair the damages using the measured changes was provided. The permitted sand sources were also listed in the report.



DOUGLAS MANN

PE, BC.CE - COASTAL ENGINEER

LEAD COASTAL ENGINEER | APTIM

37 YEARS
EXPERIENCE

EDUCATION

- ▶ MS, Coastal and Oceanographic Engineering, University of Florida
- ▶ BCE, Civil Engineering, University of Delaware

PROFESSIONAL LICENSE OR CERTIFICATION

- ▶ Professional Engineer, Florida
- ▶ Board Certified in Coastal Engineering by Academy of Coastal Ocean, Port, and Navigation Engineers, ASCE

SPECIAL SKILLS

- ▶ Completed 50 coastal and marine infrastructure projects

PROFESSIONAL SUMMARY

Mr. Douglas Mann, PE, BC.CE, has worked as a coastal engineer with APTIM since 1987. He is experienced in all aspects of coastal engineering including dredge and fill projects for material disposal and beach nourishment, beach and inlet engineering, coastal structure design (including breakwaters, groins, seawalls, jetties, and Permeable Adjustable Groin (PAG) design) as well as marine-related upland structures. He has been involved in the design of boat ramps, marina renovations, and other boating related projects. He is experienced in Joint Coastal permitting, Environmental Resource permitting, and Florida Department of Environmental Protection (FDEP) Coastal Construction Control Line permitting. He was awarded the Florida Shore & Beach Preservation Association Per Bruun Distinguished Service Award in 2017.

RELEVANT EXPERIENCE

Aptim Environmental & Infrastructure, LLC, Lead Coastal Engineer February 1987–Present

Coastal Engineer; Town of Longboat Key, FL. Initial Assessment of Vulnerability

Performed preliminary assessment of vulnerabilities to private and public infrastructure due to sea level rise and recurring storm events. Project manager for the data collection of stormwater infrastructure, and bulkhead elevations in critical areas of the Town.

Coastal Engineer; City of Delray Beach, Canal Vulnerability Assessment, Delray Beach, FL

City-wide Intracoastal Waterway seawall and stormwater outfall inspections and assessed sea level rise for 30- and 75-year horizons. Outline capital improvements for public and private infrastructure.

Engineer of Record; Nathan Benderson Park South Shoreline Stabilization, Sarasota County, FL

Revetment reconstruction, revetment extension and boat ramp repairs along the ¼ mile south shoreline. Project addressed impacts from Hurricane Ian on large inland lake.

Project Manager, Sanibel Island Causeway Shoreline Stabilization Project, Lee County, FL

Stabilization project to address the erosion on San Carlos Bay and Pine Island Sound shorelines of Sanibel Causeway and to address the stormwater runoff from the causeway road. Project addressed impacts to upland infrastructure, and shoreline recession, while taking into consideration adjacent seagrass habitats and recreational areas used by the public.



WILLIAM MOHLER

CA, TRAQ, PWS, CLI - GIS SPECIALIST

GIS SPECIALIST | MILLER LEGG

16 YEARS
EXPERIENCE

EDUCATION

- ▶ BS, Ecology, Minor in Geography, Florida Atlantic University

PROFESSIONAL LICENSE OR CERTIFICATION

- ▶ FDEP Stormwater, Erosion & Sedimentation Inspector, FL
- ▶ FDOT Intermediate Maintenance of Traffic, FL
- ▶ ISA Tree Risk Assessment Qualification
- ▶ Professional Wetland Scientist
- ▶ ISA Intro to Urban Forestry
- ▶ Advanced Airport Wildlife Hazard Management, FL
- ▶ SFWMD Certified Airboat Pilot

SPECIAL SKILLS

- ▶ Software including ESRI Arc GIS Trimble Arc pad, Li-Cor, TREC, SPOT, GPS, LI DAR, Dynamax TDP Sap Flow systems
- ▶ Created thematic maps of the Everglades Water Conservation Areas, wetland and upland maps for mitigation projects, geographic distribution maps

PROFESSIONAL SUMMARY

Mr. Mohler is experienced in Geographic Information Systems (GIS) concepts, principles and practices, regularly analyzes GIS data. His GIS experience includes: digital map creation, geodatabase creation and utilization, geoprocessing, georeferencing and editing, digitizing, remote sensing, photo interpretation ground truthing and utilizing Arc Toolbox functions. He has experience with geographic/cartographic sciences, and has significant knowledge of coordinate system, projections and georeferencing techniques.

RELEVANT EXPERIENCE

Miller Legg, GIS Specialist; 2013–Present

City of Miami Beach South Beach Boardwalk Dune & Tree Survey and GIS Mapping

Updated previous 1,100 LF topographic and Coastal Construction Control Line (CCCL) survey for a FDEP Coastal Construction permit. The topography included trees and above ground improvements. Beach transects were established to the Mean Water Line and CCCL and Erosion Control Lines were also established. The dune vegetation survey included herbaceous, shrub and tree species. Vegetation data was collected using a sub-meter Trimble GPS unit. In addition a tree inventory for coastal tree species and associated attributes was conducted by our Certified Arborists and displayed on digital maps.

Florida Atlantic University (FAU) Habitat Assessment and GIS Mapping

Since 2009, Miller Legg has been conducting habitat assessments biannually at the FAU preserve area consisting of 98.5 acres that will remain in perpetuity as a natural habitat.

Town of Davie Judy Paul Farm Park at Governor Leroy Collins Grounds

Providing civil engineering, surveying, landscape architecture, and environmental services as part of the MC Harry team. The park will provide volunteer opportunities, farm tours, field trips, summer camps, community gardens, and equestrian programs for the special needs population. Our civil engineering scope includes earthwork analysis; paving, grading and drainage; water and sanitary sewer, pavement marking and signage, stormwater pollution prevention; offsite improvements; phasing plans, permitting through the Town and other agencies; and construction administration. The wetlands scope includes wetlands due diligence using GIS mapping.

Town of Davie New Town Hall Engineering Design Criteria Package (DCP)

Provided surveying and the engineering Design Criteria Package as a subconsultant to Justin Architects. Boundary and topographic surveying was completed using laser scanner technology and conventional surveying methods. The dense tree canopy on the southern portion of the site proved a challenge for the scanner crew. The scope also includes GIS mapping, bidding and permitting assistance and construction administration.



PETER PELLERITO

PE - DRAINAGE ENGINEER

DRAINAGE ENGINEER | MILLER LEGG

34 YEARS
EXPERIENCE

EDUCATION

- ▶ BS, Engineering, University of Florida

PROFESSIONAL LICENSE OR CERTIFICATION

- ▶ Professional Engineer, Florida

SPECIAL SKILLS

- ▶ Soil and groundwater remediation
- ▶ Water treatment and wastewater pre-treatment systems
- ▶ Traffic Impact Statement analysis, open channel flow modeling and lift station design

PROFESSIONAL & CIVIC ACTIVITIES

- ▶ Professional Engineer, Florida

PROFESSIONAL SUMMARY

Mr. Pellerito has experience and expertise in both small and large scale municipal and private sector, high complexity infrastructure projects. Peter has successfully led multidisciplinary teams in planning and design on a wide range of civil engineering projects. His project experience encompasses soil and groundwater remediation; water treatment and wastewater pre-treatment systems; water and wastewater pump stations and transmission lines; site planning; earthwork; drainage systems; paving and grading; erosion control / stormwater pollution prevention; roadway design and specifications. He is proficient in Civil 3D, Traffic Impact Statement analysis, open channel flow modeling, and lift station design.

RELEVANT EXPERIENCE

Miller Legg, Drainage Engineer; 2018–Present

South Florida Water Management District (SFWMD) Stormwater Treatment Area (STA) 1 W Refurbishments PBC

Part of a dewatering and demucking effort to return Stormwater Treatment Area (STA) 1 West to a natural condition owing to the current disturbed state of the wetlands which has led to the proliferation of exotic/invasive vegetative systems. The project is connected to the Comprehensive Everglades Restoration Plan (CERP) initiative which contains multiple STAs.

City of Dania Beach Southeast Drainage Improvements Phase 2

Miller Legg provided civil engineering, permitting and landscape architecture services for this drainage improvement project which addressed flooding issues at the 103-acre 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. Drainage solutions included pump stations, drainage wells, and exfiltration trenches to reduce flooding, including duration and severity, reduce neighborhood impacts and mitigate project costs. Miller Legg was a subconsultant to WSP USA.

Seminole Tribe of Florida (STOF) Big Cypress Reservation Siphon Basins Redesign

Provided a conceptual layout and redesign of hydrating structures for proper wetland hydroperiod restoration at The Siphon Redesign project (Basins 1 and 2) on the Big Cypress Seminole Indian Reservation. The scope encompassed surveying, structural, inlet design, construction plans and bid package, scheduling, opinion of cost, installation schedule, environmental and construction permitting and coordination with SFWMD and USACOE, bidding assistance, contractor selection, construction observation, and Engineer of Record services.



SAEID ZARE

GIS SPECIALIST

GIS SPECIALIST | MILLER LEGG

8 YEARS
EXPERIENCE

EDUCATION

- ▶ Master of Arts and Environmental Sciences, Civil Engineering, Geomatics and Transportation, Florida Atlantic University
- ▶ MS, Remote Sensing & Geographic Information Systems, University of Tabriz, East Azerbaijan
- ▶ BS, Architectural Engineering Urmia University, Iran

PROFESSIONAL LICENSE OR CERTIFICATION

- ▶ Professional ArcGIS
- ▶ Professional AutoCAD

SPECIAL SKILLS

- ▶ Preparation of existing land use maps, cartography,
- ▶ Schematic GIS design and structure plans using GIS technology and ArcGIS software

PROFESSIONAL SUMMARY

Mr. Zare is a GIS Specialist with experience providing GIS services. He has experience in geospatial and remote sensing data analysis. He is proficient in designing and implementing GIS solutions to address complex spatial challenges. Specific experience he has includes geospatial data processing, digital image processing, geospatial analysis, GIS programming, Web GIS development, unmanned aerial systems, remote sensing of the environment, computer vision and photogrammetry.

RELEVANT EXPERIENCE

Miller Legg, GIS Specialist; May 2024–Present

Broward County Parks and Recreation West Lake Park Phase 4

Miller Legg was again selected to provide both environmental and engineering services for this 1,500-acre Broward County and State-owned tidal estuarine park in Hollywood, this time for the fourth (4th) segment. The scope of services includes mitigation design and dredge and fill permitting through US Army Corps of Engineers (USACOE) and Florida Fish and Wildlife Conservation Commission (FWCC) to encourage natural/pioneer mangrove propagation, preservation of existing mangroves, negotiation of permit modifications through Broward County Environmental Protection Department (BCEPD), South Florida Water Management District (SFWMD) and USACOE services.

FEMA Watershed Master Plan Program, Phase 2 (Individual Experience)

As a Research Assistant at FAU's Department of Civil, Environmental and Geomatics Engineering, Center for Water Resiliency and Risk Management, Mr. Zare worked with FEMA's Bureau of Mitigation for a Hazard Mitigation Grant project on the 477,000-acre Watershed Master Plan Program, Phase 2 in Charlotte County, FL.

UAS-Based Multi-Spectral Shoreline Change Detection and Vegetation (Individual Experience)

As part of a project funded by the Bureau of Land Management in Jupiter, Palm Beach County, Mr. Zare was a Research Assistant and performed UAS-based multi-spectral shoreline change detection and vegetation for species monitoring of the Jupiter Inlet Lighthouse Outstanding Natural Area.

Broward County Design for Improvements at Andrews Avenue Corridor

For this County roadway corridor improvement project, Miller Legg is providing GIS and Surveying services including 3D laser scanning in the field, processing the point clouds (Registration, classification, conversions etc.) and digitizing the point clouds to produce the DTM maps. Miller Legg is a subcontractant to Marlin Engineering.

APPROACH & METHODOLOGY

The APTIM Team has reviewed and understands the tasks and goals outlined in the *Professional Services for a Vulnerability Assessment Study & Plan* RFQ. Our approach will capitalize on the knowledge and experience of our project team, and will assimilate background information and framework provided by the Town's documents and research.

We have the capability to execute the responsibilities and are experienced in each of the tasks and deliverables. **Informed by our team's expertise in flood modeling and vulnerability assessment projects, we anticipate minimal challenges.** Our goal is to create advanced tools and methodologies for analyzing vulnerability and resilience indicators. We understand the development of the Final Vulnerability Assessment Study & Plan represents a critical mission for the Town to assess the vulnerability of its infrastructure and critical facilities resulting in the development of mitigation and adaptation strategies for existing and future infrastructure. APTIM will propel the Town's resilience mission forward by ensuring all scope tasks are completed to support the state's interest in withstanding future events and minimizing unavoidable impacts.

Together, our diverse team of coastal engineering, academicians, and scientific experts has successfully designed, obtained permits, managed construction, and monitored numerous significant projects related to flood protection, coastal management, transportation, remediation and energy in the State of Florida.

PROJECT WORKPLAN

The overall project process, including all major tasks, is outlined in **(Figure 1-3)**. The Project Timeline, **(Figure 1-13)**, illustrates the proposed schedule and marks project milestones.

APTIM's goal is to include various engagement styles to include public outreach and engagement meetings. Meeting materials and summary reports from these outreach efforts will be produced and delivered at the commencement of the meetings. Tasks are listed below which accounts for review by internal, Town, and FDEP staff.

TASK 1: IDENTIFY VULNERABILITY ASSESSMENT DATA STANDARDS

The APTIM Team will identify the data standards, to include the sea level rise scenarios and planning horizons, needed to create the Vulnerability Assessment (VA) Plan based on the requirements as defined in Section 380.093, F.S. The data standards will comply with the requirements defined in Section 380.093, F.S., as of the date of beginning data collection efforts.

Prior to conducting the work for the Project, APTIM will provide the proposed data standards (sea level rise scenarios and planning horizons) to be used in the VA Plan.

We developed our approach based on:

- 1) An experienced and well-integrated project team that embeds staff from our team members directly into our organization.
- 2) A responsive organizational structure with clearly defined lines of authority.
- 3) Proven project management procedures to enhance safety, quality, cost, schedule effectiveness, and coordination with stakeholders.
- 4) Experienced project management staff that has direct work experience associated with the scope of the contract.
- 5) Structured resource management processes to oversee workload fluctuations, maximize resource efficiencies, and control costs.

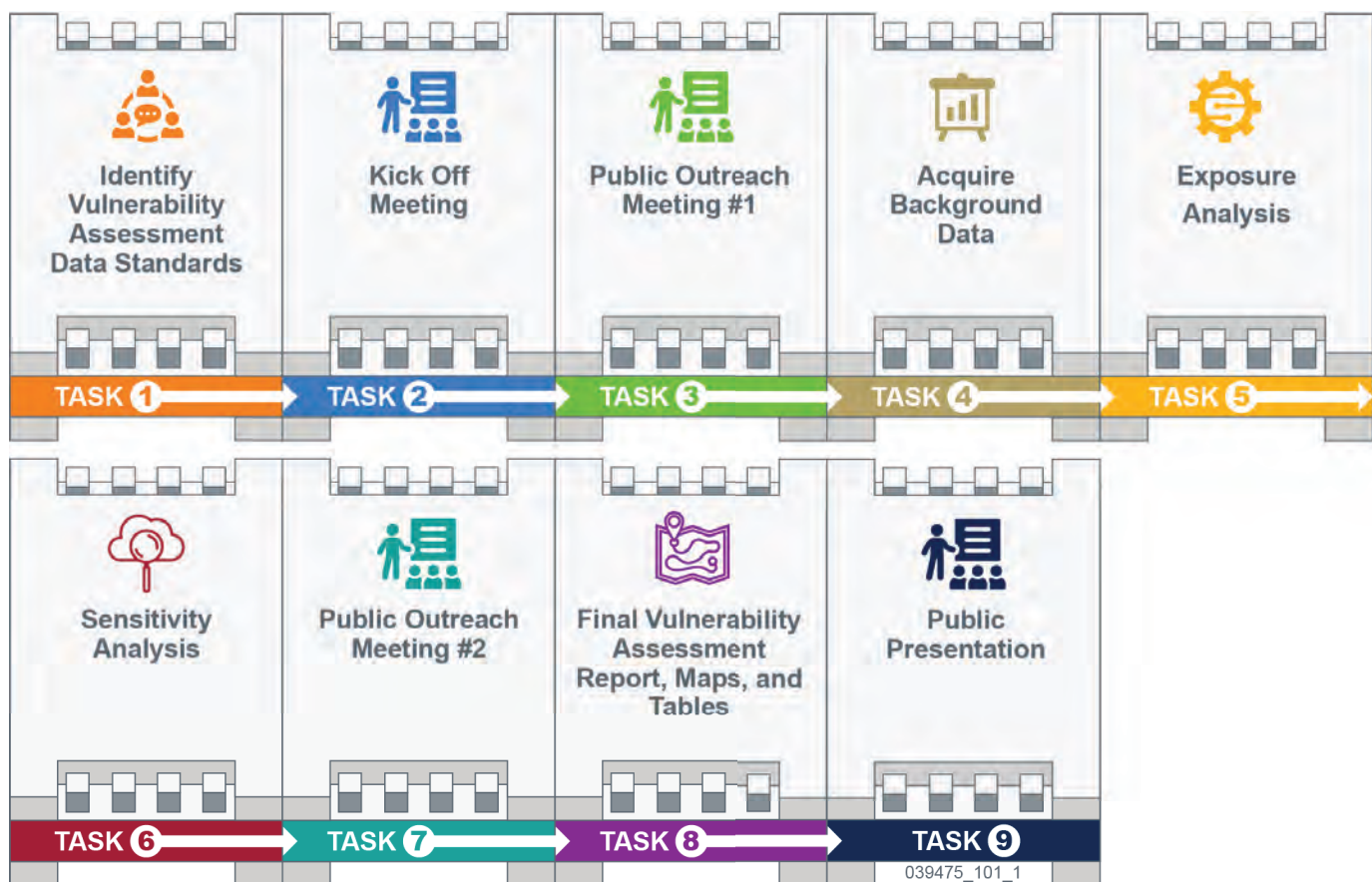


Figure 1-3 Project Process Overview

TASK 2: KICK OFF MEETING

APTIM will first develop an overall project management plan and address initial actions before conducting a kick-off meeting with the Town's staff. The **Project Management Plan** will serve to realize project goals, deliverables, and reporting requirements, and will communicate a shared understanding of scope of work, format of deliverables, and timeline for project benchmarks. This Plan will also establish communication protocols, meeting minutes, agendas and schedules that document all decisions and agreed upon outcomes, and design and process standards, as well as track and delineate project management activities and reporting to assist the Town Project Team in complying with FDEP reporting submission requirements and deadlines (**Figure 1-4**). APTIM will also create an outline and an "Action Plan" for the accomplishment of all tasks, as applicable.

TASK 3: PUBLIC OUTREACH MEETING #1

The APTIM Team will conduct at least **two public outreach meetings during the project**.

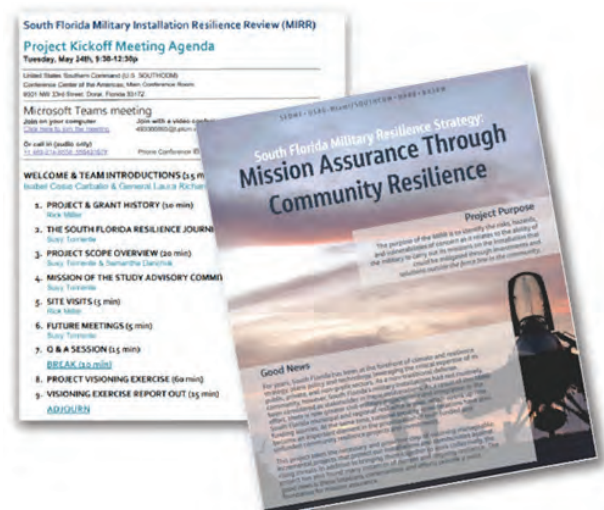


Figure 1-4 Steering Committee Meetings and Example Materials from South Florida Military Resilience Review (MIRR)

Public Outreach Meeting #1

APTIM understands the critical role that meaningful local input plays throughout the vulnerability assessment process and encourages participation by community members. The public outreach efforts will be led by APTIM Team members, who will facilitate and coordinate key community partnerships, prepare and distribute all invitations, materials, presentations, and graphics utilized during the meeting, as applicable.

The first public outreach meeting is to allow the public to provide input during the initial data collection stages. Our team will position and strategize the meeting with the goal of gaining insight regarding community goals and priorities, preferred methodologies, recommended data, guiding factors to consider, and critical assets important to the community. Our team is adept at building marketing strategies that have an undeniable impact on expanding reach, generating interest, increasing community ownership, and enhancing stakeholder loyalty.

TASK 4: ACQUIRE BACKGROUND DATA

Acquiring background data is essential to the entire vulnerability assessment process and must be as thorough and complete as possible. APTIM has experience with complying with data requirements as defined in Florida Statutes 380.093, which focuses on three major data types- critical and regionally significant assets, topographic data, and flood scenario-related data. Before APTIM can begin the exposure analysis, APTIM will assure data has been acquired for all necessary assets and key facilities within the Town. APTIM's ongoing work in the State of Florida positions us to be a great and experienced fit for this work. APTIM has a geodatabase created which includes drinking water and wastewater infrastructure data, which would be utilized to complete the local asset inventory for the Town.

Critical and Regionally Significant Assets

The critical asset inventory will be reviewed to ensure all required asset types are accounted for:

- Public Safety
- Transportation assets (bridges, bus stops, major roadways)
- Critical infrastructure (lift stations, stormwater treatment facilities, and stormwater network facilities)
- Critical community and emergency facilities (community centers, emergency operational facilities, health-care facilities, law enforcement facilities, government offices etc.)
- Natural, cultural, and historic topographic data will be collected including parks, waterways, surface water, wetlands, and historic or cultural assets
- Coordination with schools in the area and review of their resilience planning within the Town
- Consider connections of the utilizations of stormwater within other developing infrastructure that could contribute to other resilient infrastructure
- Consider green infrastructure for stormwater projects, and storm surge or rain event flooding

APTIM will also search for and review town-specific geospatial data publicly available online, will query for reference documents related to hazards and ongoing efforts within the Town and finally will search for new items of interest found in data sources already collected.

BUILDING DATA SETS

In APTIM's experience with conducting vulnerability assessments, comprehensive data sets of utility infrastructure do not always exist. As a result, asset mapping involves meeting with utility owners to locate existing networks and generate new data sets which capture the intricacies and interdependencies of utilities and local infrastructure. While baseline principal data is often available and can suffice for state compliance purposes, this supplemental step of meeting with the data owners and professionals allows the APTIM Team to ground truth data and build real-time datasets to assure we have captured the entirety of the local infrastructure picture.

Town-data and information regarding each of the Town or privately owned assets' location, ownership, and condition will support further classification of the asset inventory.

Building elevation certifications will be collected to better inform elevation adjustments and more accurately determine flood depth predictions. When data is not available online, the APTIM Team will request geospatial information and shapefiles from the Town to support the development of the asset inventory.

Data gap analyses will be performed iteratively, and subsequent stakeholder outreach will be conducted to address outstanding needs. During data collection and asset inventory creation, the APTIM Team will meet with stakeholders and private utility representatives and data owners to request data files, documents, and commentary on items necessary for the vulnerability assessment or relevant to the project scope. **Figure 1-5** depicts a meeting with local data owners and stakeholders for the South Florida Military Resilience Review Project with the same intention. Data request examples (online review will precede request) include GIS shapefiles or coordinates of facilities/assets and critical facilities, plans, and Town goals related to key infrastructure and networks. Interviews will also provide stakeholders with the ability to identify additional stakeholders that represent different segments of the population and represent, own, and maintain various infrastructure sectors.



Figure 1-5 Ms. Samantha Danchuk, PhD, PE, Meeting with Data Owners and Stakeholders from South Florida Military Resilience Review (MIRR)

APTIM will coordinate with Town staff to initiate preliminary outreach to identify stakeholders and community influencers, align with their existing engagement platforms, and prioritize their near-term priorities that may align with the project. The data collected will be consistent with project scope requirements and state guidance for vulnerability assessments and will be inclusive of the best available public data. As data is collected, it will be tracked via spreadsheet and deposited into the Project Resources Archive or Geodatabase. Based on the regional asset inventory developed for the project and information collected from stakeholders, the critical assets and threats and hazards of concern to be included in the vulnerability assessment will be determined.

Flood Scenario–Related and Topographic Data

Recent LiDAR for the Town and building elevation certificates, as available, will be collected and utilized to determine flood depths under various scenarios. The APTIM Team will review the online list of elevation certificates provided by the Town's Building Department and will request certificates as needed.

APTIM will establish water level elevations for sea level rise, storm surge, and tidal flooding.

- **Sea Level Rise** analysis tools from the Florida Department of Transportation and others have documented impacts in the study areas. These existing peer-reviewed modeling result datasets will be used for the vulnerability assessment. The University of Florida GeoPlan Center Sea Level Scenario (SLS) Sketch Planning Tool will be used to model different sea level rise scenarios from NOAA's 2017 intermediate-high and intermediate-low SLR projections for 2040 and 2070 at a minimum, and optionally, other projections available from NOAA Digital Coast website, Florida Flood Hub.
- **Storm Surge** inundation model results will be obtained from the South Florida Water Management District,

NOAA National Hurricane Center (NHC), USACE South Atlantic Coastal Study and the Engineering Research Development Center (flood insurance rate map modeling). Storm surge data will be equal to or will exceed the 100-year return period flood event or presented for multiple scenarios.

➤ **Tidal Flooding** will increase erosion along shorelines and impact inland drainage to coastal outlets.

NOAA's Assess Flood Risks Tool and through the review of historical high tide events and trends at appropriate gauges using NOAA's Tides & Currents website will be applied as relevant.

The modeling employed for storm surge and sea level rise will include the following:

SLOSH (Sea, Lake & Overland Surge from Hurricanes) Model | Computerized numerical model developed by the National Weather Service (NWS) to estimate storm surge heights resulting from historical, hypothetical, or predicted hurricanes by considering the atmospheric pressure, size, forward speed, and track data.

ADCIRC + SWAN Model | Physics-based numerical model used by the National Oceanic and Atmospheric Association to quantify the impacts of sea level rise scenarios on ecosystem and infrastructure vulnerability. Modeling applied to the NOAA Office for Coastal Management Sea Level Rise Viewer. If deemed applicable, additional modeling and tools will be employed by APTIM experts to represent more advanced flood scenario-related vulnerability. Such models include:

SFINCS (Super-Fast INundation of CoastS) Model | Compound flooding model will be applied as practicable. SFINCS is a cutting-edge numerical model capable of rapidly simulating 2D compound flooding. In emergency situations such as pre- and post-hurricanes, speed is of the essence, and APTIM uses SFINCS to obtain fast and adequately accurate results. It also allows our team to complete our modeling efforts by a fraction of the time it takes to run conventional models.

Interconnected Channel and Pond Routing Model (ICPR4) Pro Stormwater Model | APTIM has in-house Hydrologic and Hydraulic (H&H) Modeling experts and is uniquely experienced in ICPR4 stormwater modeling. Our team uses ICPR4 for comprehensive flood vulnerability assessments. By harnessing ICPR4's advanced H&H modeling capabilities, we propose to accurately assess flood vulnerability in the Town. Through the simulation of surface runoff using surface terrain data, standard rainfall distributions and historical rainfall patterns, ICPR4 provides valuable insights into flood-prone areas and potential vulnerabilities. The model's outputs, including stage-area values within defined basins, will enable us to visualize inundation extent and water levels, informing decision-making for flood mitigation strategies and urban planning. Our proposed vulnerability assessment will leverage ICPR4's capabilities to enhance flood exposure analysis in the Town.





Delft3D Model | Provides a robust framework for simulating hydrodynamics, morphodynamics, and water quality in coastal and estuarine systems. This allows us to accurately assess the vulnerability of these environments to various hazards. Delft3D offers a high level of flexibility, which helps to customize the model to suit specific study requirements and incorporate local data and boundary conditions. This flexibility enhances the accuracy and relevance of vulnerability assessments, leading to more informed decision-making. Additionally, the model's ability to simulate long-term scenarios allows for the evaluation of potential impacts and adaptation strategies over extended timeframes.

TASK 5: EXPOSURE ANALYSIS

APTIM will perform an exposure analysis to identify the depth of water caused by each sea level rise, storm surge, and/or flood scenario. The exposure analysis will involve an initial view of the spatial extent of the various water level elevations for the designated flood scenarios. The water elevations will be mapped in relation to local tidal datums and incremental variations between scenarios will be evident. Overlaying the flood hazard scenarios onto the local landscape of the Town allows for a visual representation of the magnitude and percentage of the Town that will be impacted by flooding and pinpoints the locations where this flooding will occur. This step allows for a first cut at understanding the Town's vulnerability. Moreover, overlayed with

critical asset data, specific infrastructure can be flagged as “exposed” to various flood related scenarios.

All scenarios and standards used for the exposure analysis will be pursuant to s. 380.093, F.S. The flood scenarios that will be used to evaluate assets shall include current and future storm surge flooding, sea level rise, rainfall-induced flooding, tidal flooding, and compound flooding.

| | |
|---|---|
|  | <p>As indicated by the Task 1 Technical Memo, the storm surge exposure analysis will focus on displaying the incremental inundation of Hurricane Categories 1-3 and the change in asset exposure as the storm surge elevations increase. Task 1 Results show that many parts of the City of Juno Beach will be inundated by a Category 1 or greater storm surge, 50% of the city would be inundated by a Category 2 storm surge, and approximately 70% of the city would be inundated by a Category 3 or higher Storm Surge. Future storm surge flooding will be determined based on the consideration of the effects of future sea level rise scenarios</p> |
|  | <p>Sea level estimates integrate data from the local Virginia Key tide gauge and include the 2040 and 2070 NOAA Intermediate Low and Intermediate High projections as suggested by the state. Projections will be considered relative to the mean higher high water (MHHW) and elevations include::</p> <p>NOAA 2017 (2040)</p> <ul style="list-style-type: none"> • Intermediate Low: 0.69 feet NAVD88 • Intermediate High: 1.41 feet NAVD88 <p>NOAA 2017 (2070)</p> <ul style="list-style-type: none"> • Intermediate Low: 1.25 feet NAVD88 • Intermediate High: 3.28 feet NAVD88 <div data-bbox="878 743 1425 1066" style="background-color: #0056b3; color: white; padding: 10px;"> <p>It is important to note that the difference in water level elevations between the NOAA 2017 2040 Intermediate High and 2070 Intermediate Low projections is only .08 feet NAVD88, which may not produce a significant different in exposure or sensitivity results. Additionally, there is a closer tidal gauge at Lake Worth Pier, allowing for regional grid results to be interpreted more accurately for the Town.</p> </div> |
|  | <p>The precipitation corresponding to the 100-year event is 12.6 in. in a 24-hour period which simulated using the City of Juno Beach hydrodynamic stormwater flood model to generate the corresponding 100-year flood elevations. The boundary condition layer produced in Task 1 will be utilized for the rainfall-induced flooding exposure analysis.</p> |
|  | <p>Tidal flooding elevations will be determined from NOAA's Assess Flood Risks Tool and through the review of historical high tide events and trends at appropriate gauges using NOAA's Tides & Currents website. Additionally, as mentioned previously, SFINCS by Deltares, is a cutting-edge numerical model capable of rapidly simulating 2D compound flooding, and it can transform APTIM's disaster recovery, tidal flooding modeling, and erosion mitigation efforts.</p> |

The data processing, assessment methodology, and modeling procedures, involved in the Exposure Analysis will be detailed in a first Draft Vulnerability Assessment Report. The report will possess finalized exposure maps and tables and all GIS files and related metadata will adhere to the Resilient Florida Program's GIS Data Standards. An example of an exposure map from one of APTIM's deliverables is depicted in **(Figure 1-6)**.



Figure 1-6 Sea Level Rise and Tidal Flooding Exposure Map Example from the South Florida Military Installation Review (MIRR).

The **APTIM Team will prepare a draft VA report** that provides details on the modeling process, type of models utilized, and resulting tables and maps illustrating flood depths for each flood scenario, as well as GIS files with results of the exposure analysis for each flood scenario along with the appropriate metadata that identifies the methods used to create the flood layers. APTIM has ample experience working with the Resilient Florida Program and is confident in its ability to continue to deliver compliant geodatabases and vulnerability assessment reports.

TASK 6: SENSITIVITY ANALYSIS

APTIM will perform the sensitivity analysis to measure the impact of flooding on assets and to apply the data from the exposure analysis to the inventory of critical assets created in the Acquire Background Data Task.

The **sensitivity analysis** will determine inundation depths for each critical asset under each flood scenario, through the examination of water levels

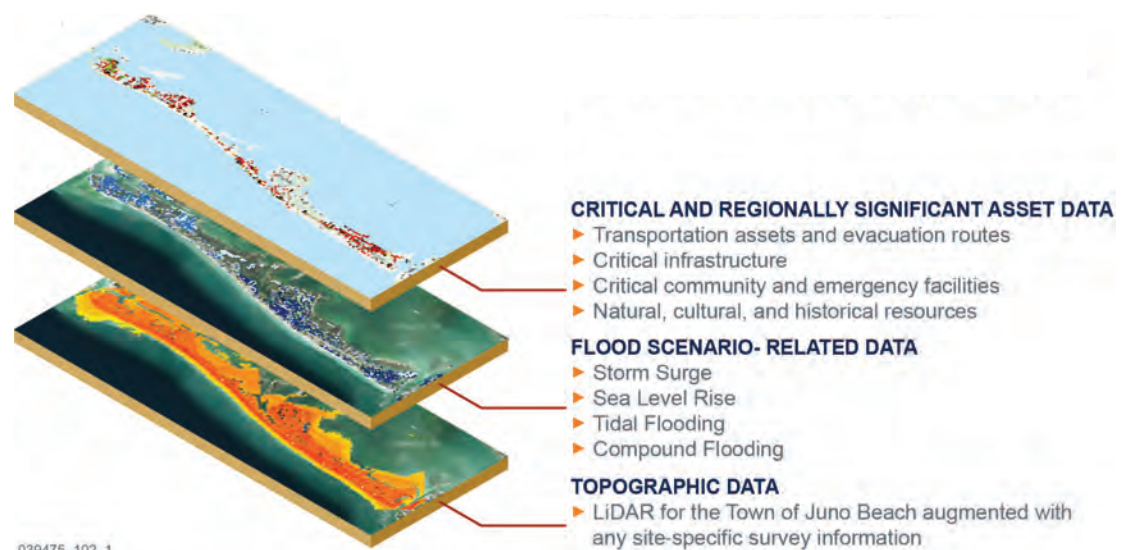


Figure 1-7 Exposure and Sensitivity Assessment Data Layering in Arc Pro

in relation to asset elevations determined via local LiDAR and site-specific survey information where available. **Figure 1-7** portrays the general Arc Pro process of the spatial layering of data files involved in the sensitivity analysis. Flood depths vary across scenarios and timeframes ranging from a depth of less than 1 foot (nuisance flooding), and a depth of 1-2.5 ft. (disturbance), to a depth greater than 2.5 ft. (impact), with greater depths corresponding to increasing impacts. Severities of impact will help inform the subsequent risk matrix.

The sensitivity of all critical assets will be assessed per flood scenario. APTIM will focus on assets within the Town, while also reviewing county assets outside of the Town boundary that are critical and interdependent to the Town's functionality, accessibility, and function. In addition to evaluating the impact of flood severity by each individual asset, the sensitivity analysis will also evaluate the impact of flood severity by asset class at each flood scenario.

Adaptive Capacity Analysis

APTIM will further quantify impacts of various flooding scenarios by accounting for the adaptive capacity of the Town. Adaptive capacity may be defined as the ability for an asset or system to adapt or adjust to changing conditions or threats to avoid service disruption or system failure. In the adaptive capacity assessment, data collected on emergency response facilities will be used in conjunction with findings from the impact analysis to assess the community's capacity to respond in times of need. An example of an approach used in APTIM's Military Installation Resilience Review (MIRR) project for the Naval Air Station Key West to assess its adaptive capacity is shown in **(Figure 1-8)**.

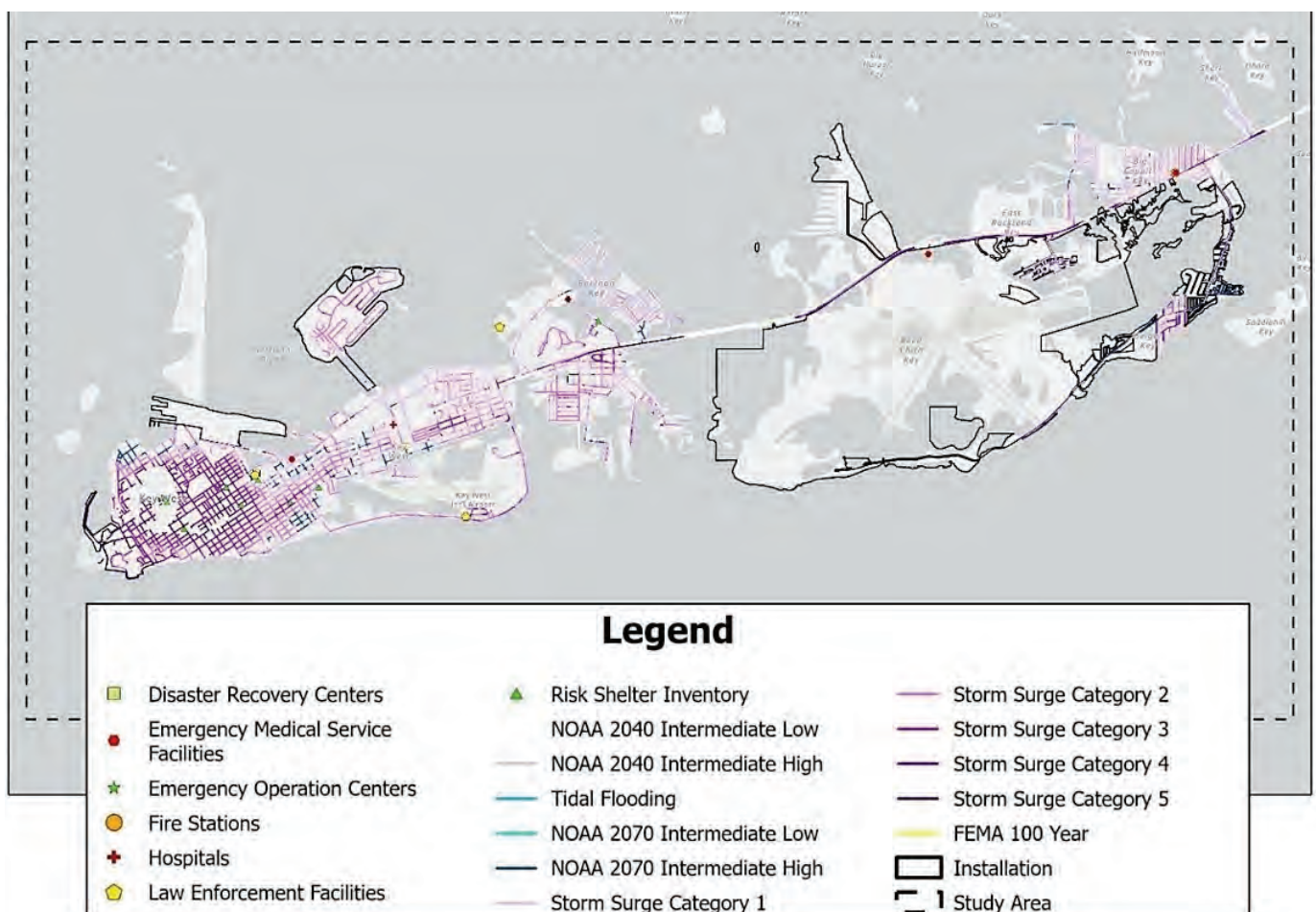


Figure 1-8 Adaptive Capacity Map Example from the South Florida Military Installation Resilience Review (MIRR)

| | | Impact Score per Flood Water Depth Range | | | | |
|-----------------------------------|---|--|--------------------|--------------------|--------------------|-------------------|
| | | 0 | 1 | 33 | 66 | 100 |
| Water Level Elevation (Feet NAVD) | Probability of a given flood scenario occurring in a year (P) | Water Depth =0 | Water Depth 0-1 ft | Water Depth 1-2 ft | Water Depth 2-5 ft | Water Depth >5 ft |
| 0.6 | 4.345 | No Foreseeable Risk | Low Risk | High Risk | High Risk | High Risk |
| 1.3 | 1.873 | No Foreseeable Risk | Low Risk | High Risk | High Risk | High Risk |
| 2.3 | 0.534 | No Foreseeable Risk | Low Risk | Medium Risk | High Risk | High Risk |
| 3.5 | 0.143 | No Foreseeable Risk | Low Risk | Medium Risk | Medium Risk | Medium Risk |
| 4.5 | 0.075 | No Foreseeable Risk | Low Risk | Low Risk | Medium Risk | Medium Risk |
| 5.2 | 0.053 | No Foreseeable Risk | Low Risk | Low Risk | Low Risk | Medium Risk |
| 6.4 | 0.031 | No Foreseeable Risk | Low Risk | Low Risk | Low Risk | Low Risk |
| 7.3 | 0.021 | No Foreseeable Risk | Low Risk | Low Risk | Low Risk | Low Risk |
| 8.8 | 0.01 | No Foreseeable Risk | Low Risk | Low Risk | Low Risk | Low Risk |
| 11.1 | 0.002 | No Foreseeable Risk | Low Risk | Low Risk | Low Risk | Low Risk |

Figure 1-9 Example of an Outline of Risk Matrix Development Steps from the Captiva Erosion Prevention District (CEPD) Vulnerability Assessment

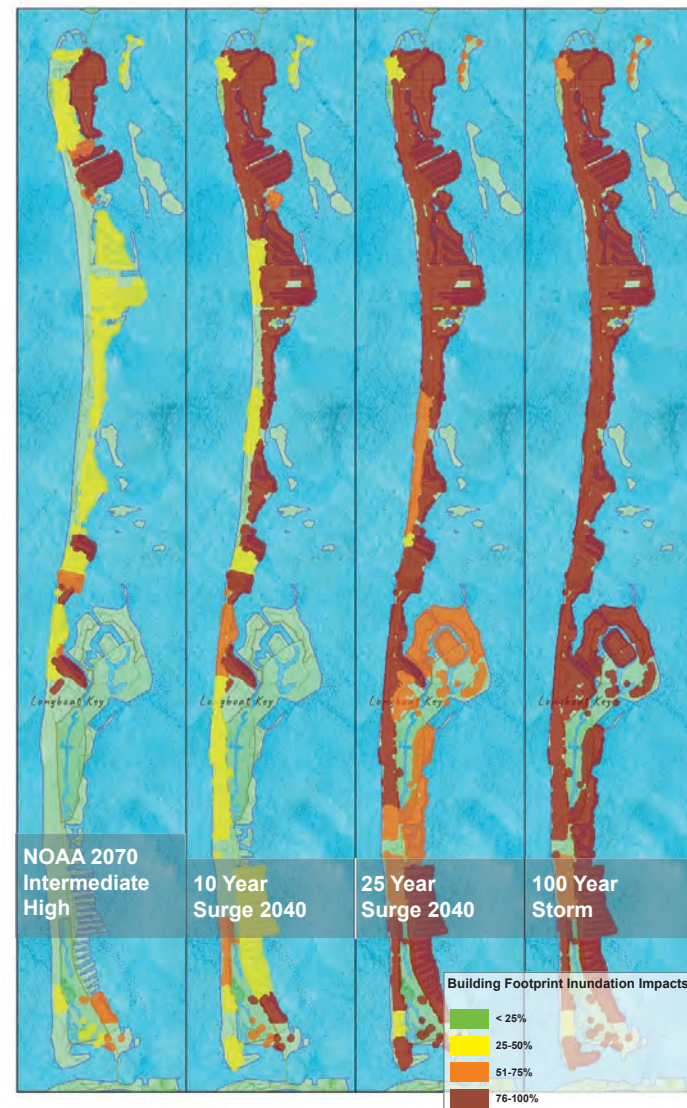


Figure 1-10 Example of Land Inundation Maps by Neighborhood from the Town of Longboat Key Vulnerability Assessment and Adaptation Plan

To quantify and depict one aspect of local government adaptive capacity geographically, maps for each installation were created that show emergency response facilities as icons with critical surrounding roads that could have more than 2 ft of flood depth. When flood depths exceed 2 ft, emergency response times and operations are typically impeded, so maps help to identify the critical assets that lack the capacity to respond and adapt during a hazard event.

Risk Analysis

The risk analysis will utilize the results of the previously mentioned sensitivity analysis to determine the probability of flooding for each scenario and the potential consequences.

The **risk analysis will be three-fold** and will produce the following for each flood scenario:

- A risk score per individual asset
- Number and percentage of critical assets affected (by asset type)
- Percentages of land area inundated

An example of a previously generated risk matrix can be seen in **(Figure 1-9)**. On a grander scale, the risk assessment will also assign **risk levels based on percentages of land area inundated by neighborhood (Figure 1-10) and number and percentage of critical assets affected** (by asset type) for each flood scenario. As mentioned previously, asset types include transportation assets and evacuation routes, critical infrastructure, critical community and emergency facilities, and natural, cultural, and historical resources.

Low, medium, and high-risk percentages for critical asset types can be determined based on basic asset exposure (% impacted to any depth) or on determined Town flood depth tipping points and impact to emergency services. An example of risk criteria for asset types per scenario is as follows:

Low Risk. Percent of assets (per type) that experience very temporary flooding less than 1 ft. and no impact to emergency services.

Medium Risk. Percent of assets (per type) that experience short term flooding 1-2.5 ft. and minimal impact to emergency services.

High Risk. Percent of assets (per type) that experience remaining flooding greater than 2.5 ft. and emergency services are completely isolated.

The APTIM Team will prepare a **Draft Vulnerability Assessment Report** that provides details of the findings of the exposure and sensitivity analyses, and includes visual presentation of the data via maps and tables based on the statutory-required scenarios and standards. APTIM will provide **an initial list of critical and regionally significant assets that are impacted by flooding. The list of critical and regionally significant assets will be prioritized by area for immediate need and will identify which flood scenario(s) impacts each asset.**

RISK MATRICES

APTIM has experience in developing weighted indices to quantify risk **dependent upon likelihood of occurrence** (probability of exposure occurring in a given year) and **severity of impact** (level of sensitivity). **Determined inundation depths and flood scenarios will be utilized to generate a standardized risk score** for each individual asset to help compare vulnerabilities and prioritize risks. **In compliance with Florida Statutes 380.093**, the sensitivity and risk analysis will include an evaluation of the **impact of flood severity on each asset type at each flood scenario and assign a risk level** based on percentages of land area inundated and number of critical assets affected.

TASK 7: PUBLIC OUTREACH MEETING #2

Public Outreach Meeting #2

The purpose of the second meeting is to **allow the public to provide community-specific input on the results of the analyses (exposure and sensitivity) and the draft VA plan and to reconsider methodologies and assumptions used in the analysis for refinement (Figure 1-11)**. Additionally, during this meeting, the APTIM Team will conduct exercises to encourage the public to prioritize focus areas of flooding, and the critical assets in preparation for the development of adaptation strategies and project development.

Our team will present the results of the exposure and sensitivity analyses, illustrating the projected impacts of flood scenarios on vulnerable areas and assets as well as the draft VA report. We will prepare all social media notifications, meeting invitations, meeting materials, presentations, and graphics utilized during the meeting, as applicable. This session aims to garner feedback and will be designed for active community participation regarding the refinement of assessment methodologies.

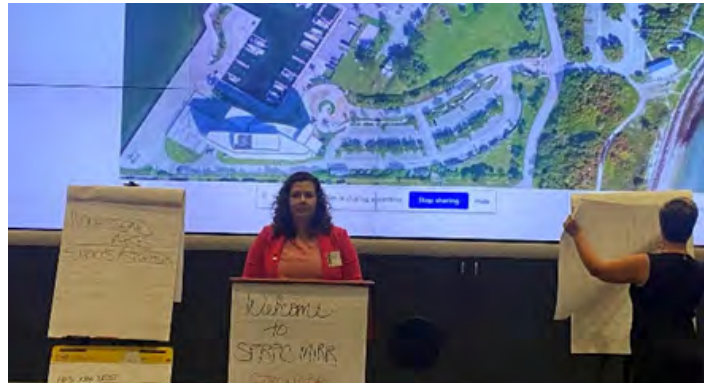


Figure 1-11 Ms. Samantha Danchuk, PhD, PE, South Florida Military Resilience Review (MIRR) Outreach

The meeting will achieve the following goals:

- Provide a foundation of vulnerability concepts and detail their importance within planning
- Ensure residents understand the Town's vulnerability assessment process, status, and goals
- Engage residents and gather input from the community on their experiences with weather events
- Stimulate discussions to gather suggestions, observations, and feedback from residents, and incorporate this input into the assessment
- Build trust and cooperation between community members and the Town

This participatory session ensures the integration of local knowledge into the analysis process. Attendees will engage in exercises to prioritize focus areas for flooding and identify critical assets. Criteria, such as the potential impact on vulnerable populations, critical operations, and community services will guide discussions. An example of an interactive activity that our team can coordinate with the goal of enhancing community involvement and gather valuable qualitative insights is a mapping exercise.

This activity involves creating large-scale flood maps, marked with the at-risk critical assets identified from the assessment, for community members to add sticky notes and push pins. The goal is to capture residents' experiences, observations of risk, and to identify additional key community assets or problem areas that may not have surfaced through the technical modeling alone. This interactive session allows residents to contribute directly to refining methodologies and assumptions used in the analysis, ground-truth results based on lived experiences, and contextualize at-risk assets to pinpoint focus areas. This type of activity contributes to the authenticity and local focus of the process.

TASK 8: FINAL VULNERABILITY ASSESSMENT REPORT, MAPS, AND TABLES

The APTIM Team commits to delivering a comprehensive final report, meeting the stringent requirements outlined in s. 380.093, F.S., and based upon the public outreach efforts. The final VA will include all results from the exposure and sensitivity analyses, as well as a summary of identified risks.

It will contain a list of critical and regionally significant assets that are impacted by flooding and sea-level rise, specifying for each asset the flood scenario(s) impacting the asset. GIS files and associated metadata must adhere to the Resilient Florida Program's GIS Data Standards (Exhibit I), and raw data sources shall be defined within the associated metadata.

GRANT COMPLIANCE

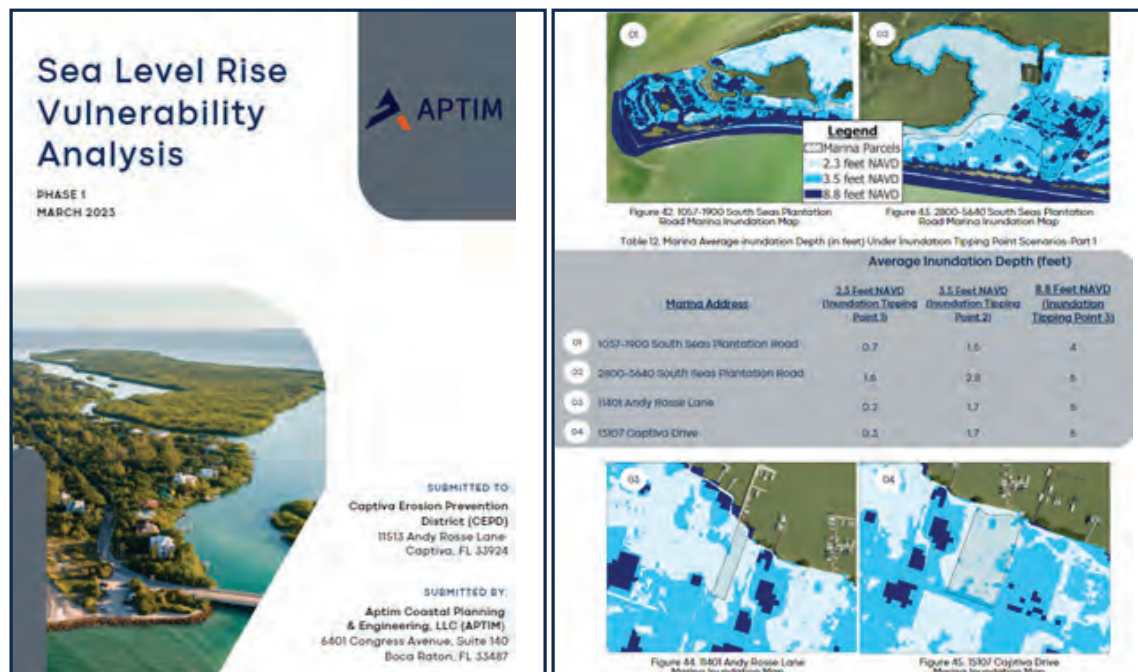
The APTIM Team has experience in complying with grant criteria and legislative rules for the Resilient Florida Grant Program. We have **completed vulnerability assessments in compliance with state guidance in six coastal counties** - Manatee, Sarasota, Lee, Broward, Miami-Dade, and Monroe County at municipal and county scales. APTIM has a **proven methodology for assessments and associated community and stakeholder engagement** that delivers comprehensive and impactful results. Our deliverables to the Florida Department of Environmental Protection have been compliant with all guidance and requirements and our team is **accustomed to the reporting, documentation, and submission process**. This quantity of relevant experience is unmatched and allows the team to hit the ground running.

For example, if a critical transportation route is at risk due to sea-level rise, the report will outline the level of risk, potential consequences and urgency of addressing this vulnerability. Maps and tables will account for all critical assets and flood scenarios and will visually and quantitatively display the degree of flooding that will occur when assets are overlaid with various water elevation levels.

The report will include a matrix of risk by hazard and sector/system, a detailed assessment of the most significant hazards identified and the hot spots of facility/infrastructure vulnerabilities. GIS files and associated metadata, and raw data sources will also adhere to the Resilient Florida Program's GIS Data Standards. An example snapshot of the Captiva Erosion Prevention District's final deliverable is depicted in **(Figure 1-12)**.

The report will also incorporate key priority adaptation strategy recommendations and details on implementation for each focus area.

Our team also recognizes that Resilient Florida Grants require compliance with the Peril of Flood Legislation. The Peril of Flood statute requires that the comprehensive growth management plan be amended to reflect the steps and goals that the Town is taking. The project manager has assisted several governments in the region with this process. Results of the vulnerability assessment and key priority adaptation strategy recommendations will also be presented in an ArcGIS Story-Map for better visualization.



Our team of GIS experts has developed several StoryMaps for our clients in the past and had success communicating the results to communities in a clear way.

Figure 1-12 Example of the Captiva Erosion Prevention District Sea Level Rise Vulnerability Final Report

TASK 9: PUBLIC PRESENTATION

The APTIM Team will work with the Local Mitigation Strategy Working Group (LMSWG) to ensure the VA Report is in alignment with the existing county LMS Plan and will be utilized during the planning process of future county LMS Plan updates.

The APTIM Team will provide a letter to the Department and FDEM Mitigation Bureau Planning Unit, signed by the LMSWG Chair, or Designee, to include the following: Vulnerability Assessment Report will be incorporated as a reference in updating the next iteration of the LMS Plan, i.e., utilized in the next five-year update; Vulnerability Assessment Report will be included as an appendix to the next iteration of the LMS Plan; and the entity/entities that composed the VA report will be involved with the LMSWG through any of the following: at a minimum, be added to the contact list, attend meetings, participate in the planning process of the next major update; participate in the adoption of the LMS plan; and submit projects to the LMSWG to be included on LMS Prioritized Project List.

PROJECT TIMELINE

APTIM's proposed schedule assumes that mobilization of our team begins immediately upon award and notice to proceed (assumed September 2024).

It is anticipated that this project and the writing of the VA plan will take approximately seventeen (17) months to complete. If additional time is required, APTIM shall submit a request for additional time in writing to the Project Coordinator/Risk Manager Andrea Dobbins for the Town's approval.

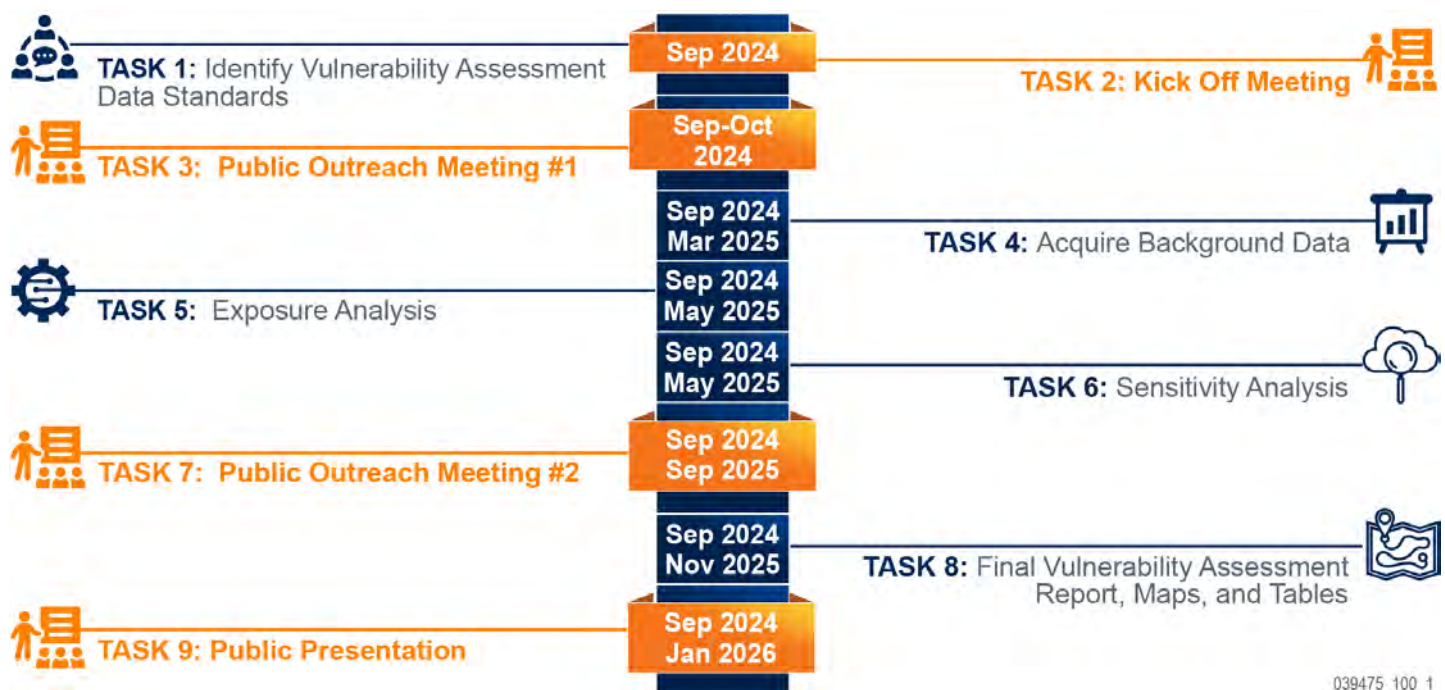


Figure 1-13 Project Timeline

TAB 2

PROJECT EXPERIENCE, WORKLOAD, AND PROOF OF PAST PERFORMANCE



2

PROJECT EXPERIENCE, WORKLOAD & PROOF OF PAST PERFORMANCE

PROJECT EXPERIENCE & PROOF OF PAST PERFORMANCE

The APTIM Team possess experience in all areas required to analyze and recommend improvements to the Town. We have provided descriptions of our most relevant projects produced by our core team on the subsequent pages.

- Delray Beach Vulnerability Assessment & Adaptation Plan
- City of West Miami Vulnerability Assessment
- FDEP Adaptation Plan Guidebook
- Captiva Vulnerability Assessment
- Town of Longboat Key Vulnerability Assessment and Adaptation Plan
- Escambia County Vulnerability Assessment
- South Beach Boardwalk Dune & Tree Survey and GIS Mapping
- Florida Atlantic University (FAU) Habitat Assessment and GIS Mapping
- Town of Davie Judy Paul Farm Park at Governor Leroy Collins Grounds

Below, please find **additional relevant projects** not included on subsequent pages

Relevant Resilience Projects

- Emerald Coast Military Installation Resilience Review
- Central Florida Military Installation Resilience Review
- Okaloosa County Vulnerability Assessment
- Deerfield Resilient Operations & Sustainability Roadmap
- City of Albany Resilience Plan
- Virginia Department of Emergency Management

Hazard Mitigation Modeling & Assistance for LMI Communities

- Terrebonne Parish Flood Modeling & Mapping

Resilience Assessment Tools & Modeling

- Rebuild by Design Atlas of Disaster
- USACE Coastal Resilience Index
- Sustainable Sport Index (SSI) Survey/Report
- Enterprise Affordable Housing Portfolio Risk Protection Tool

PROJECT 1

VULNERABILITY ASSESSMENT & ADAPTATION PLAN

CITY OF DELRAY BEACH | APTIM

**58 STORMWATER
OUTFALLS & 820 SEAWALLS**
INCLUDED IN CAPITAL IMPROVEMENT
RECOMMENDATIONS BASED ON
VULNERABILITY STUDY

CLIENT NAME

City of Delray Beach, FL

PROJECT COST

VA: \$198,000

Adaptation Plan: \$100,000

COMPLETION DATES

VA: Nov 2017 – Jul 2019

Adaptation Plan: 2024 - Present

COMPANY ROLE

Prime

KEY PERSONNEL INVOLVED

- ✓ Samantha Danchuk
- ✓ Doris Otero
- ✓ Douglas Mann
- ✓ Bridget Huston

CLIENT REFERENCE

Cynthia Buisson, P.E.
Engineering Division
City of Delray Beach
434 S. Swinton Avenue
Delray Beach, FL 33444
561 243 7196
fuentesc@mydelraybeach.com

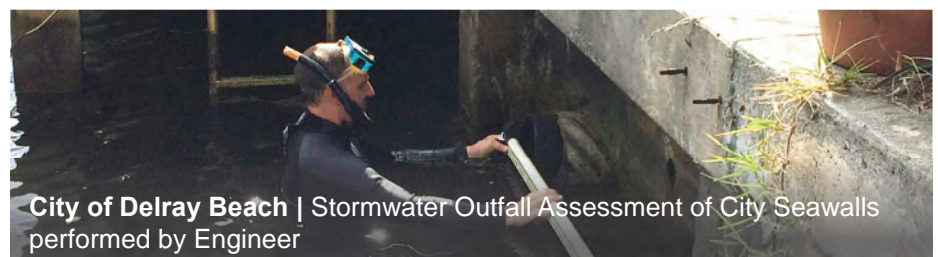
PROJECT OVERVIEW

APTIM performed a Citywide Intracoastal Waterway seawall and stormwater outfall inspection to quantify the vulnerability of private and public seawalls and the public stormwater system to sea level rise and recurring storm effects. APTIM is currently completing an Adaptation Plan for the city that includes an assessment of adaptive capacities, prioritization of adaptation needs, and identification of adaptation strategies.

PROJECT DESCRIPTION

Vulnerability Assessment | These investigations included the surveying of 1000 seawalls and over 100 stormwater outfalls. Recommendations for seawall elevation raising were provided to the City based on the combination of sea level rise for 30-year and 75- year time horizons and the effects of recurring storms. From this assessment, we outlined capital improvements for 58 public stormwater outfalls, 20 City owned seawalls, and 800 privately owned seawalls. We also recommended that the City update their existing seawall ordinance to encourage private compliance with the findings of the study. APTIM participated in several public meetings to discuss the findings of the investigations (2017-2018). The City is implementing the highest priority recommendations.

Adaptation Plan | APTIM is developing an adaptation plan consistent with the Florida Adaptation Planning Guidebook and grant agreement requirements. After acquiring background data and evaluating the City and communities capacity to address the impacts of sea level rise, APTIM will review local mitigation strategies, the Comprehensive Plan, floodplain management plans, master stormwater plans and previous sea level rise risk assessments. APTIM will interview key stakeholders to identify a list of the primary challenges facing the community related to sea level rise, storm surge and tidal flooding. A summary of findings will be compiled for inclusion into the final plan.



City of Delray Beach | Stormwater Outfall Assessment of City Seawalls performed by Engineer

PROJECT 2

VULNERABILITY ASSESSMENT

CITY OF WEST MIAMI | APTIM

UTILIZED THE SOUTH
ATLANTIC COASTAL STUDY
(SACS)

OUTPUT TO DETERMINE MAXIMUM OVERLAND
FLOOD DEPTHS, ADDING SIGNIFICANT VALUE
TO THE VULNERABILITY ASSESSMENT

CLIENT NAME

City of West Miami, FL

PROJECT COST

\$150,000

COMPLETION DATES

March 2024 - July 2024

COMPANY ROLE

Prime

KEY PERSONNEL INVOLVED

- ✓ Samantha Danchuk
- ✓ Doris Otero
- ✓ Douglas Mann
- ✓ Bridget Huston

CLIENT REFERENCE

Mrs. Litsy C. Pittser
Director of Public Services
City of West Miami
901 SW 62nd Avenue
West Miami, FL 33144
LPittser@cityofwestmiami.org

PROJECT OVERVIEW

APTIM conducted a comprehensive Vulnerability Assessment for the City of West Miami to identify and evaluate vulnerabilities related to climate change stressors such as sea level rise, precipitation events, and groundwater table changes.

PROJECT DESCRIPTION

The Vulnerability Assessment for the City of West Miami analyzed the city's exposure to climate change impacts, including storm surge flooding, sea level rise, rainfall-induced flooding, tidal flooding, and compound flooding. The project began with a kickoff meeting to establish the scope, goals, schedule, and deliverables. We gathered and analyzed critical data, including topographic data and flood scenarios, ensuring compliance with Florida Statutes 380.093. Flood scenario modeling assessed the impact on the city's infrastructure, facilities, and communities. Sensitivity analysis evaluated the impact on community assets, considering demographics, structural vulnerabilities, and economic functions to assign risk levels. Public outreach and engagement included meetings and workshops to gather resident and stakeholder input. Based on the findings, we developed strategies for mitigating risks and enhancing resilience, including stormwater management improvements and policy recommendations.

PROJECT SUCCESSES

- Conducted detailed exposure and sensitivity analyses that identified high-risk areas and assets, helping the city prioritize its resilience efforts
- Identified potential funding sources to support the implementation of proposed adaptation measures, ensuring the city has a roadmap for securing necessary resources
- Developed a set of prioritized recommendations for capital improvement projects and other adaptation measures to mitigate identified vulnerabilities



City of West Miami | Sylvania Heights Elementary School

PROJECT 3

RESILIENT FLORIDA ADAPTATION PLANNING GUIDEBOOK AND PERFORMANCE METRICS

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION | APTIM

HOSTED 300 STAKEHOLDERS

DURING SUCCESSFUL WORKSHOP, GATHERING VALUABLE FEEDBACK. AND INCORPORATING NEARLY ALL SUGGESTIONS INTO UPDATED GUIDEBOOK. RECEIVED HIGH PRAISE FOR ITS ENGAGEMENT

CLIENT NAME

Florida Department of
Environmental Protection

PROJECT COST

\$39,945

COMPLETION DATES

January 2023 – June 2024

COMPANY ROLE

Prime

KEY PERSONNEL INVOLVED

- ✓ Samantha Danchuk
- ✓ Doris Otero
- ✓ Douglas Mann
- ✓ Bridget Huston
- ✓ Cigdem Ozkan

CLIENT REFERENCE

Ralph Perkins
FDEP Contract Manager
850 245 2460
ralph.perkins@floridadep.gov

PROJECT OVERVIEW

APTIM was tasked with updating the Florida Adaptation Planning Guidebook as part of the Resilient Florida Planning Grant initiative. This project aimed to incorporate new tasks and allowable activities introduced by the Resilient Florida Program pursuant to s. 380.093, F.S., and to provide comprehensive guidance on adaptation planning, including nature-based solutions and other eligible activities under the grant program.

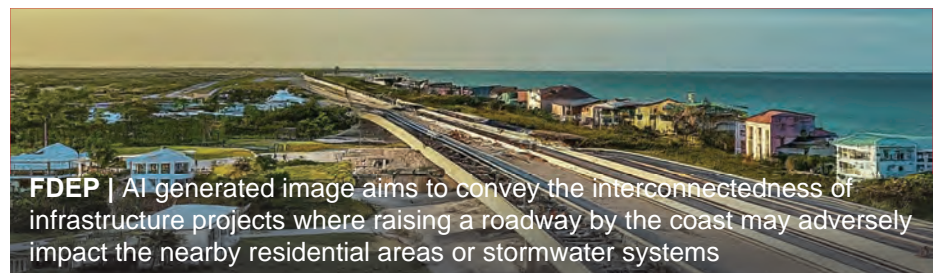
PROJECT DESCRIPTION

The project began with a kickoff meeting to understand the full extent of the project and the department's expectations. APTIM reviewed the existing Florida Adaptation Planning Guidebook and relevant statutes, compiling a detailed list of performance metrics for adaptation planning.

The scope of work included conducting research to compile performance metrics, creating guidance on allowable activities by drafting tasks and deliverables for eligible grantees, finalizing these tasks based on feedback from FDEP, and developing additional planning grant-related tasks. APTIM facilitated virtual workshops and roundtable discussions to gather stakeholder input, identifying areas needing updates. The guidebook was then revised to reflect current practices, new funding sources, lessons learned, and stakeholder feedback.

PROJECT SUCCESSES

- Revised the guidebook to include new tasks and allowable activities, ensuring it reflected the latest best practices and funding opportunities.
- Successfully engaged stakeholders through virtual workshops, gathering valuable input that informed the guidebook updates.
- Created detailed guidance on allowable activities under the Resilient Florida Grant Program, supporting municipalities in developing robust adaptation plans.



PROJECT 4

SEA LEVEL RISE VULNERABILITY ANALYSIS

CAPTIVA EROSION PREVENTION DISTRICT | APTIM

3 CRITICAL
SCENARIOSWERE IDENTIFIED AS
"TIPPING POINTS" OF IMPACT

CLIENT NAME

Captiva Erosion Prevention
District

PROJECT COST

\$66,884 (Contract Value)

COMPLETION DATES

2022 – Apr 2023

COMPANY ROLE

Prime

KEY PERSONNEL INVOLVED

- ✓ Samantha Danchuk
- ✓ Bridget Huston
- ✓ Cigdem Ozkan
- ✓ Heather Vollmer

CLIENT REFERENCE

Daniel Munt
Executive Director
Captiva Erosion Prevention
District
11513 Andy Rosse Lane
Captiva, FL 33924
239 472 2472
dmunt@mycepd.com

PROJECT OVERVIEW

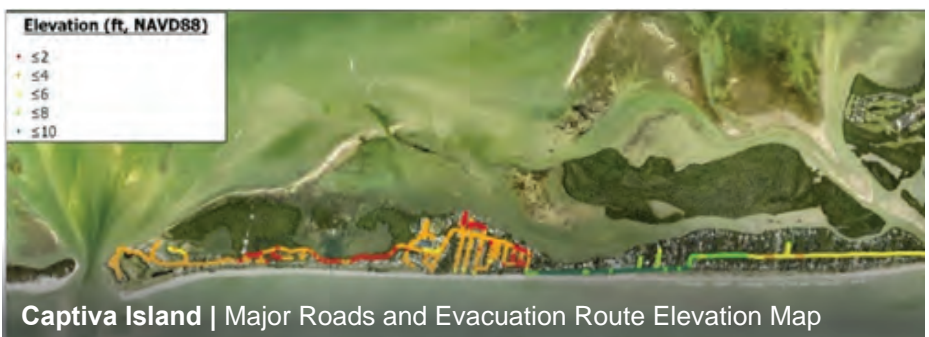
APTIM conducted an island-wide vulnerability assessment for the Captiva Erosion Prevention District (CEPD) necessary for state funding eligibility and additional immediate preparatory actions to support resilience and coastal infrastructure funding applications. The objective of this project was to form a deliverable, consistent with state guidance.

PROJECT DESCRIPTION

Flood and sea level scenarios were visualized and mapped to determine the extent of the island and the on and off island critical infrastructure that would be exposed. The potential impacts associated with each scenario were summarized by asset type including critical infrastructure, critical facilities, and valued resources on Captiva Island. The likelihood of occurrence of specific scenarios and the associated magnitude of impact of the flooding was analyzed island-wide and by asset to assess risk and rank vulnerabilities. The findings of the vulnerability assessment are intended to support subsequent funding pursuits and project conceptualization to increase community and coastal resilience and support the incorporation of future conditions planning into the CEPD's Beach and Shore Preservation Program.

PROJECT SUCCESSES

- Successfully identified vulnerabilities based on exposure, sensitivity, and risk to flood hazards, including sea level rise.
- Developed inundation maps for twelve different water level scenarios and included them in a community education presentation.
- Identified potential funding sources based on the eligibility of CEPD and potential partners.
- Awarded contract for the next phase of work and will be responsible for producing the Captiva Bayside Adaptation Plan.



PROJECT 5

SEA LEVEL RISE AND RECURRING FLOODING VULNERABILITY ASSESSMENT AND ADAPTATION PLAN

TOWN OF LONGBOAT KEY | APTIM

25 STRATEGIC ACTIONS

FOR ADDRESSING IMPACTS OF
SEA LEVEL RISE AND FLOODING

CLIENT NAME

Town of Longboat Key, FL

PROJECT COST

\$259,963 (Contract Value)

COMPLETION DATES

Aug 2019 - Mar 2023

COMPANY ROLE

Prime

KEY PERSONNEL INVOLVED

- ✓ Samantha Danchuk
- ✓ Bridget Huston
- ✓ Cigdem Ozkan
- ✓ Doris Otero
- ✓ Heather Vollmer

CLIENT REFERENCE

Isaac Brownman
Public Works Director
Town of Longboat Key
Town Hall
501 Bay Isles Road
Longboat Key, FL 34228
941 316 1988
ibrownman@longboatkey.org

PROJECT OVERVIEW

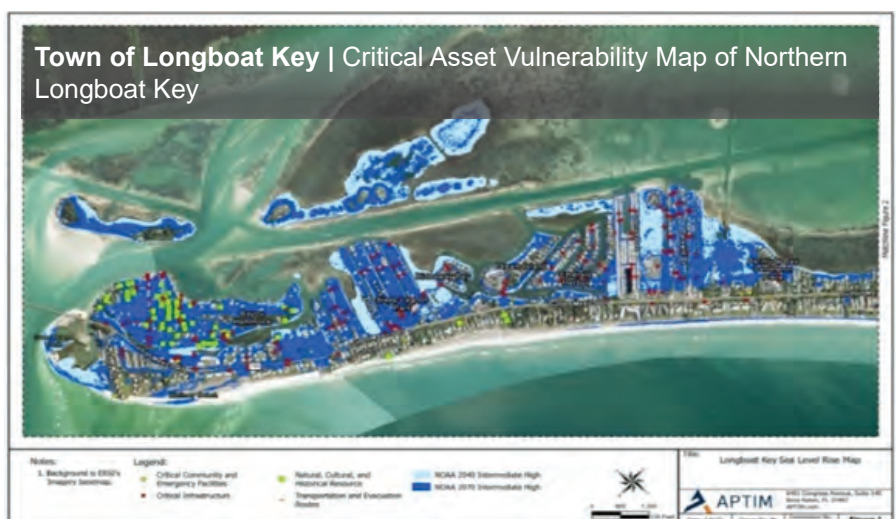
APTIM was contracted with the Town of Longboat Key to conduct an island-wide assessment of potential impacts from sea level rise and recurrent flooding on public and private infrastructure in Longboat Key. Our phased approach was as follows: collect elevation data of critical infrastructure, conduct flood exposure, sensitivity, and risk assessments, define impacts, and develop adaptation strategies.

PROJECT DESCRIPTION

The results of the Vulnerability Assessment were the basis for the development of the Sea Level Rise and Recurring Flooding Resilience Adaptation Plan. This plan represents an island wide resilience plan and risk-based capital plan with priority projects for the next 5, 10, and 20 years has been developed to support staff implementation of climate adaptation and flood mitigation. The plan consists of 25 strategic actions focused on management of shorelines, stormwater and public assets, preparing for redevelopment, supporting community engagement and planning for future capital investments.

PROJECT SUCCESSES

- Developed short- and medium-term resilient capital improvement plans based on conceptual design of adaptation strategies.
- Identified potential funding sources and included in the adaptation plan based on eligibility of measures.
- Successfully submitted for grant reimbursement



PROJECT 6

VULNERABILITY ASSESSMENT

ESCAMBIA COUNTY | APTIM

RAN 2022 SEA LEVEL RISE
(SLR) PROJECTIONS

EXCEEDING STATUTORY
REQUIREMENTS, PROVIDING COUNTY
WITH THE MOST UP-TO-DATE DATA FOR
RESILIENCE PLANNING.

CLIENT NAME

Escambia County, FL

PROJECT COST

\$95,000

COMPLETION DATES

May 2024 – March 2025 (est.)

COMPANY ROLE

Subconsultant to Jacobs

KEY PERSONNEL INVOLVED

- ✓ Samantha Danchuk
- ✓ Doris Otero
- ✓ Douglas Mann
- ✓ Bridget Huston
- ✓ Cigdem Ozkan

CLIENT REFERENCE

Tanya Gallagher
Contract Manager
850 525 5941
Tanya.gallagher@jacobs.com

PROJECT OVERVIEW

APTIM, in collaboration with Jacobs Engineering Group Inc., conducted a comprehensive Vulnerability Assessment for Escambia County, Florida. The purpose of this project was to evaluate the vulnerabilities of the unincorporated areas of Escambia County to various climate change stressors, including sea level rise, storm surge, and flooding, pursuant to Section 380.093, Florida Statutes (F.S.). This assessment was part of the Resilient Florida Planning Grant initiative and aimed to inform future grant opportunities and resilience planning.

PROJECT DESCRIPTION

The project involved acquiring and analyzing critical data, including topographic and flood scenario data, ensuring compliance with GIS Data Standards. Detailed modeling assessed the impact of various flood scenarios on infrastructure and communities. Sensitivity analysis evaluated the impact on assets, considering flood severity and assigning risk levels. Public outreach included multiple meetings to gather input and present findings. The final report provided actionable recommendations for capital improvement projects and adaptation measures.

PROJECT SUCCESSES

- Identified high-risk areas and assets, providing a clear understanding of vulnerabilities.
- Conducted three public meetings, gathering valuable input and increasing community awareness.
- Mapped and analyzed critical and regionally significant assets, prioritizing them for resilience planning.



Escambia County | During 100-year flood (Source: Flood Defenders)

PROJECT 7

MIAMI DADE COUNTY RESILIENCE HUBS ENERGY VULNERABILITY ASSESSMENT

MIAMI DADE COUNTY | APTIM

20 CENSUS TRACTS

HAVE POTENTIAL VULNERABILITY
TO POWER DISRUPTION

CLIENT NAME

Atlantic Council's Adrienne
Arsht-Rockefeller Foundation
Resilience Center (AARFRC)

PROJECT COST

\$99,024 (Contract Value)

COMPLETION DATES

Oct 2020 – Mar 2023

COMPANY ROLE

Subcontractor to Jacobs

KEY PERSONNEL INVOLVED

- ✓ Samantha Danchuk
- ✓ Bridget Huston
- ✓ Cigdem Ozken

CLIENT REFERENCE

Julie Varghese
Chief Operating Officer
Atlantic Council
1030 15th Street, NW
Washington, DC 20005
202 778 4952
JVarghese@atlanticcouncil.org

PROJECT OVERVIEW

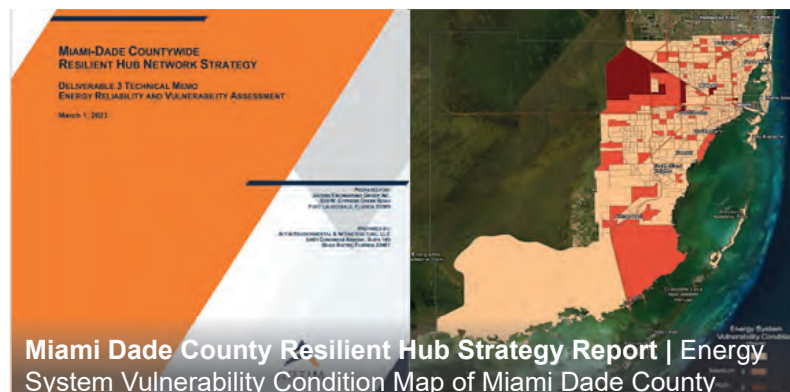
The Atlantic Council's Adrienne Arsht-Rockefeller Foundation Resilience Center (AARFRC) was awarded \$1.110M in funding from the Florida Department of Economic Opportunity under the 'General Planning Support Program' to develop a master plan to implement three resilience hubs in Miami-Dade County, which include a public facility, infrastructure, site programming and operations, and mitigation planning activities.

PROJECT DESCRIPTION

APTIM assisted the AARFRC in developing a framework for a sustainable network of community-focused resilience hubs to support residents of Miami-Dade County during emergencies and in their day-to-day lives by providing a safe shelter and an energy resource in the areas with the highest need. APTIM performed a vulnerability assessment for electric substations, power plants, and power transmission lines. The condition of energy systems of individual census tracts across the county was rated as "good", "fair" or "poor" based on potential infrastructure exposure to hazards, energy burden, recent hardening or mitigation measures, and proximity to fast power recovery priority sites for post-outage service recovery.

PROJECT SUCCESSES

- Collected a comprehensive data set for a thorough assessment.
- Provided a concise list of top priority areas.
- Provided useful information for resilience hub implementation components such as power redundancy, energy efficiency programs, and efficient energy management strategies.



PROJECT 8

SOUTH FLORIDA MILITARY INSTALLATION RESILIENCE REVIEW

SOUTH FLORIDA REGIONAL PLANNING COUNCIL | APTIM

4 INSTALLATIONS ASSESSED

ACROSS THREE COUNTIES

CLIENT NAME

South Florida Regional
Planning Council

PROJECT COST

\$184,000 (Contract Value)

COMPLETION DATES

Nov 2022 – Jan 2023
(Vulnerability Assessment)

COMPANY ROLE

Subcontractor to Jacobs

KEY PERSONNEL INVOLVED

- ✓ Samantha Danchuk
- ✓ Bridget Huston
- ✓ Cigdem Ozken
- ✓ Heather Vollmer

CLIENT REFERENCE

Christina Miskis
South Florida Regional
Planning Council
Principal Planner
1 Oakwood Blvd, Suite 250
Hollywood, FL 33021
954 924 3653
CMiskis@sfrpc.com

PROJECT OVERVIEW

The South Florida Regional Planning Council (SFRPC) was awarded \$1.1M by the U.S. Department of Defense (DoD) Office of Local Defense Community Cooperation to conduct a regional Military Installation Resilience Review (MIRR) of four key military installations:

- Homestead Air Reserve Base (HARB), Miami-Dade County
- United States Army Garrison-Miami (USAG-Miami), Miami-Dade County
- USN Naval Surface War Center South Florida Ocean Measurement Facility (SFOMF), Broward County
- United States Naval Air Station Key West (NASKW), Monroe County

PROJECT DESCRIPTION

APTIM performed environmental (flood, wind, heat, lightning, fire), socioeconomic (affordability of housing), and future conditions (age of infrastructure) vulnerability assessments for critical infrastructure, as it relates to the ability of the military to carry out its missions. Based on results, our team identified and recommend actions or investments to mitigate risks of highest concerns and enhance military resilience. APTIM is collaborating with local communities to develop a funding strategy to include federal, state, and local cost share, as well as defining proposed projects and developing a priority list and infrastructure project application packages. Community engagement was an instrumental part of this project.

PROJECT SUCCESSES

- Completed exposure, sensitivity, and risk analyses.
- Identified top 10% critical infrastructure at risk for each installation and compiled a list of mission critical and infrastructure critical assets that installations rely on to function and remain operational.
- Conducted outreach with stakeholders and recommended adaptation strategies and funding sources.



Homestead Air Reserve Base (HARB) | Critical Asset Map

PROJECT 9

SOUTH BEACH BOARDWALK DUNE & TREE SURVEY AND GIS MAPPING

MIAMI BEACH | MILLER LEGG

TOPOGRAPHY INCLUDED TREES AND ALL ABOVE GROUND IMPROVEMENTS

CLIENT NAME

Miami Beach, FL

PROJECT COST

Fee - \$10,189.66

COMPLETION DATES

Sept 2013 - Oct 2013

COMPANY ROLE

Subconsultant to Coastal
Systems International, Inc.

KEY PERSONNEL INVOLVED

✓ William Mohler

CLIENT REFERENCE

Ms. Laura Shepherd
Coastal Systems International,
Inc.
464 South Dixie Hwy
Coral Gables, FL 33146
305 669 6233

PROJECT OVERVIEW

Miller Legg updated its previous +/- 1100 LF topographic and Coastal Construction Control Line (CCCL) survey for a FDEP Coastal Construction permit.

PROJECT DESCRIPTION

This was part of the beach boardwalk improvements design project between Lummus Park and South Point Drive in South Beach. The topography included trees and all above ground improvements. Beach transects were established to the Mean Water Line and CCCL and Erosion Control Lines were also established. The dune vegetation survey included herbaceous, shrub and tree species.

Vegetation data was collected using a submeter Trimble GPS unit. Maps were then created in a GIS program indicating dominant species coverage with related percentages. In addition a tree inventory for coastal tree species and associated attributes was conducted by our Certified Arborists and displayed on digital maps. Work was completed under the firm's Miscellaneous Surveying and Mapping Contract as a subconsultant to Coastal Systems International, Inc.



PROJECT 10

HABITAT ASSESSMENT AND GIS MAPPING

FLORIDA ATLANTIC UNIVERSITY (FAU) | MILLER LEGG

GIS MAPPING USED TO IDENTIFY SPECIES, THEIR LOCATIONS AND PERCENT OF COVERAGE

CLIENT NAME

Florida Atlantic University

PROJECT COST

Fees ~ \$6,400 per FY

COMPLETION DATES

March 2009 - March 2016
(annual oversight is ongoing)

COMPANY ROLE

Prime

KEY PERSONNEL INVOLVED

✓ William Mohler

CLIENT REFERENCE

Ms. Azita Dashtaki Dotiwala
Florida Atlantic University (FAU)
777 Glades Road
Boca Raton, FL 33431
561 297 0420
dashtaki@fau.edu

PROJECT OVERVIEW

Since 2009, Miller Legg has been conducting habitat assessments biannually at the Florida Atlantic University preserve area consisting of \pm 98.5 acres that will remain in perpetuity as a natural habitat.

PROJECT DESCRIPTION

These areas consist of several sub-units, divided based on location, current condition, and management needs to determine the appropriate management technique(s) needed to assess the long term needs of the preserve. A record of the species identification, their locations, and percent coverage is maintained during the assessment using GIS mapping.

Additionally, vegetative diversity and coverage are determined and tracked using 1-meter by 1 meter-quadrants within each of the habitat types. Eight (8) photo stations capture and display historical coverage within each habitat type. The activity that results in the greatest ecological benefit is determined using the identified list of management priorities and availability of funds. The results of the assessment are presented in a summary report each period.



PROJECT 11

JUDY PAUL FARM PARK AT GOVERNOR LEROY COLLINS GROUNDS

TOWN OF DAVIE | MILLER LEGG

PRESERVATION OF TOWN OF DAVIE RURAL LIFESTYLE

CLIENT NAME

Town of Davie, FL

PROJECT COST

\$10,000,000

COMPLETION DATES

February 2020 - Ongoing

COMPANY ROLE

Subconsultant to MC Harry
Associates, Inc.

KEY PERSONNEL INVOLVED

✓ William Mohler

CLIENT REFERENCE

MC Harry Associates, Inc.
Craig Aquart, Principal
305 445 3765
caquart@mcharry.com

PROJECT OVERVIEW

The new Farm Park, located east of I-75, is being built to preserve the rural lifestyle of the Town of Davie. Miller Legg is providing civil engineering, surveying, landscape architecture, and environmental services as part of the MC Harry team.

PROJECT DESCRIPTION

The 80-acre parcel was purchased in 2008 through a combination of funds from Davie District 4 open space bonds, Broward County, the Farm Bureau and the Florida Communities Trust Fund. The first phase of the park will consist of 20-acres of development and will include an educational center, riding arena, stables, farmers market and playground. The park will provide volunteer opportunities, farm tours, field trips, summer camps, community gardens, and equestrian programs for the special needs population.

Miller Legg's civil engineering scope includes earthwork analysis; paving, grading and drainage; water and sanitary sewer, pavement marking and signage, stormwater pollution prevention; offsite improvements; phasing plans, permitting through the Town of Davie, Central Broward Water Control District, City of Sunrise, Florida Department of Environmental Protection, Broward County Environmental Protections and South Florida Water Management District; and construction administration.

The wetlands scope includes wetlands due diligence, and our landscape architecture scope includes planting design, irrigation design and pedestrian and equestrian trails. Surveying services consisted of a topographic and tree survey.



Ability to Meet Critical Deadlines of Each Task

The Town of Juno Beach Vulnerability Assessment Study & Plan project is a significant endeavor that demands collaboration and adherence to critical deadlines. Over the years, the APTIM Team has honed our skills through comprehensive assessments of various towns and cities, each presenting unique challenges and requiring tailored solutions.

Our experience across all phases of vulnerability assessments equips us with the knowledge and skills necessary to complete these tasks successfully. Our team's proficiency in data collection and analysis, risk assessment, stakeholder engagement, and report compilation ensures that we can deliver a high-quality assessment that assists the Town of Juno Beach to enhance their resilience against future environmental challenges.

The APTIM Team understands that our ability to meet your deadline is paramount to the project's success and the town's future resilience. We possess the right experience to complete each task (1 - 9) outlined in the RFQ a fact that is underscored by our track record and expertise across multiple projects.

Basis on Which Compensation Will Be Determined

APTIM has completed multiple Resilient Florida vulnerability assessments. Our proposed costs are based on competitive rates and the number of hours known to complete each task based on the scale of the Town's asset inventory. We are able to deliver the work within the budget afforded by the Resilient Florida grant. APTIM will provide invoices at the contracted interval and receive payment via check or transfer as desired.

Our team's proficiency in data collection and analysis, risk assessment, stakeholder engagement, and report compilation ensures that we can deliver a high-quality assessment that assists the Town of Juno Beach enhance their resilience against future environmental challenges.



TAB 3

KNOWLEDGE AND UNDERSTANDING OF TOWN



An aerial photograph of Juno Beach, Florida, showing a mix of residential, commercial, and natural areas. The image captures a large body of water (Pelican Lake) in the foreground, surrounded by various buildings, including apartment complexes and commercial structures. The background shows a dense residential area with many houses and trees. The sky is blue with some clouds.

3

KNOWLEDGE AND UNDERSTANDING OF TOWN

UNDERSTANDING OF TOWN'S GEOGRAPHY & LAND USE

The Town of Juno Beach, located in northern Palm Beach County, Florida, spans approximately 1.9 square miles. The Town is uniquely positioned between the Atlantic Ocean to the east and the Intracoastal Waterway to the west, making it highly susceptible to sea level rise, storm surges, and coastal erosion. A large dune system bisects the Town, providing surge protection to portions. The low lying areas along the back dune and intracoastal are often below 3 feet NAVD.

Key hydrological features include several water bodies such as Pelican Lake. The Town's land use is predominantly residential, characterized by a mix of single-family homes, condominiums, and apartment complexes. Additionally, Juno Beach includes commercial zones, recreational areas, and significant natural preserves like the Juno Dunes Natural Area, which covers 567 acres. This preserve is critical for local wildlife and serves as a natural buffer against storm impacts.

The Planning and Zoning Department in Juno Beach oversees all land development activities, administering the Town's comprehensive plan, zoning code, and subdivision regulations. This includes managing annexation and beautification projects and ensuring new developments align with the Town's vision for sustainable and resilient growth. Key flood-prone areas include Pelican Lake, coastal shorelines, and low-lying inland regions. These areas are currently managed through mitigation efforts such as maintaining storm drains, elevating buildings, and floodproofing structures, but ongoing assessments and improvements are necessary to address vulnerabilities and enhance resilience.

In developing effective vulnerability assessments and mitigation strategies for Juno Beach, APTIM's approach will incorporate detailed analyses of the Town's topography, hydrology, and built environment. We will also consider the impacts of future development and land use changes, ensuring that our recommendations support sustainable growth while enhancing the Town's resilience to climate-related hazards. By leveraging our extensive experience in coastal community planning and environmental assessment, we aim to provide the Town with a comprehensive vulnerability assessment that addresses both current and future challenges.

TAB 4

PROOF OF INSURANCE AND LICENSES





4 | PROOF OF INSURANCE AND LICENSES

INSURANCE AND LICENSES

Please find evidence of valid state, county and local licenses and receipts proving authority to conduct business in the jurisdiction of the work as well as our Certificate of Insurance on the following pages.

APTIM is **not** a certified minority business as defined by the Florida Small and Minority Business Assistance Act of 1985.

State of Florida

Board of Professional Engineers

Aptim Environmental & Infrastructure LLC

Has satisfied the requirements of Section 471.023, Florida Statutes. In recognition thereof, the Board of Professional Engineers hereby authorizes this firm to offer engineering services in the State of Florida in accordance with Chapter 471, Florida Statutes, and the rules of the Board.



CA Lic. No. 9317

*Witness the Seal of the Board and the Signature
of the Board's duly authorized Chair
this 8th day of July, 2002.*

Kenneth S. Todd, Jr.
Kenneth S. Todd, Jr., Chair



ANNE M. GANNON
CONSTITUTIONAL TAX COLLECTOR
Serving Palm Beach County
Serving you.

P.O. Box 3353, West Palm Beach, FL 33402-3353
www.pbctax.com Tel: (561) 355-2264

****LOCATED AT****
6401 CONGRESS AVE STE #140
BOCA RATON, FL 33487

| TYPE OF BUSINESS | OWNER | CERTIFICATION # | RECEIPT #/DATE PAID | AMT PAID | BILL # |
|-------------------|--|-----------------|-----------------------|----------|-----------|
| ENGINEER BUSINESS | APTIM ENVIRONMENTAL AND INFRASTRUCTURE LLC | 9317 | B23.672351 07/27/2023 | \$99.00 | B40150724 |

This document is valid only when receipted by the Tax Collector's Office.



APTIM ENVIRONMENTAL AND INFRASTRUCTURE LLC
APTIM ENVIRONMENTAL AND INFRASTRUCTURE LLC
6401 CONGRESS AVE STE #140
BOCA RATON FL 33487

**STATE OF FLORIDA
PALM BEACH COUNTY**
2023 / 2024 LOCAL BUSINESS TAX RECEIPT
LBTR Number: 2016094059
EXPIRES: 09/30/2024

This receipt grants the privilege of engaging in or managing any business profession or occupation within its jurisdiction and **MUST** be conspicuously displayed at the place of business and in such a manner as to be open to the view of the public.

Client#: 1791802

APTIMHOL

ACORDTM**CERTIFICATE OF LIABILITY INSURANCE**

DATE (MM/DD/YYYY)

07/26/2024

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 any rights to the certificate holder in lieu of such endorsement(s).

| PRODUCER USI Southwest 9811 Katy Freeway, Suite 500 Houston, TX 77024 713 490-4600 | CONTACT NAME: Morgan Koenig PHONE (A/C, No, Ext): 713 490-4600 FAX (A/C, No): 713-490-4700 E-MAIL ADDRESS: morgan.koenig@usi.com | | | | | | | | | | | | | | |
|---|---|-------------------------------|--------|---|-------|---|-------|--|-------|---|-------|-------------|--|-------------|--|
| INSURED Aptim Holding Corp. 1200 Brickyard Ln Suite 202 Baton Rouge, LA 70802 | <table border="1"> <thead> <tr> <th data-bbox="833 501 1382 527">INSURER(S) AFFORDING COVERAGE</th> <th data-bbox="1390 501 1487 527">NAIC #</th> </tr> </thead> <tbody> <tr> <td data-bbox="833 533 1382 558">INSURER A : Starr Surplus Lines Insurance Company</td> <td data-bbox="1390 533 1487 558">13604</td> </tr> <tr> <td data-bbox="833 564 1382 590">INSURER B : Starr Indemnity and Liability Company</td> <td data-bbox="1390 564 1487 590">38318</td> </tr> <tr> <td data-bbox="833 596 1382 621">INSURER C : Allianz Underwriters Insurance Company</td> <td data-bbox="1390 596 1487 621">36420</td> </tr> <tr> <td data-bbox="833 627 1382 653">INSURER D : Indian Harbor Insurance Company</td> <td data-bbox="1390 627 1487 653">36940</td> </tr> <tr> <td data-bbox="833 659 1382 678">INSURER E :</td> <td data-bbox="1390 659 1487 678"></td> </tr> <tr> <td data-bbox="833 684 1382 703">INSURER F :</td> <td data-bbox="1390 684 1487 703"></td> </tr> </tbody> </table> | INSURER(S) AFFORDING COVERAGE | NAIC # | INSURER A : Starr Surplus Lines Insurance Company | 13604 | INSURER B : Starr Indemnity and Liability Company | 38318 | INSURER C : Allianz Underwriters Insurance Company | 36420 | INSURER D : Indian Harbor Insurance Company | 36940 | INSURER E : | | INSURER F : | |
| INSURER(S) AFFORDING COVERAGE | NAIC # | | | | | | | | | | | | | | |
| INSURER A : Starr Surplus Lines Insurance Company | 13604 | | | | | | | | | | | | | | |
| INSURER B : Starr Indemnity and Liability Company | 38318 | | | | | | | | | | | | | | |
| INSURER C : Allianz Underwriters Insurance Company | 36420 | | | | | | | | | | | | | | |
| INSURER D : Indian Harbor Insurance Company | 36940 | | | | | | | | | | | | | | |
| INSURER E : | | | | | | | | | | | | | | | |
| INSURER F : | | | | | | | | | | | | | | | |

COVERAGES**CERTIFICATE NUMBER: 45667555****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 CERTIFICATION 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 INSR | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS |
|----------|---|-----------|----------|---------------|-------------------------|-------------------------|---|
| A | <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER: | Y | Y | 1000090589241 | 06/30/2024 | 06/30/2025 | EACH OCCURRENCE \$2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$2,000,000 GENERAL AGGREGATE \$4,000,000 PRODUCTS - COMP/OP AGG \$4,000,000 \$ |
| B | AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS ONLY | Y | Y | 1000635746241 | 06/30/2024 | 06/30/2025 | COMBINED SINGLE LIMIT (Ea accident) \$5,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$ |
| B | UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTION \$ | Y | Y | 1000095268241 | 06/30/2024 | 06/30/2025 | EACH OCCURRENCE \$10,000,000 AGGREGATE \$10,000,000 \$ |
| B | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below | Y | Y | 1000004242 | 06/30/2024 | 06/30/2025 | <input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000 |
| C | Pollution-Co | | | USL02887224 | 06/30/2024 | 06/30/2025 | 10,000,000 Per Occ/Agg |
| D | Professional | | | CEO744642307 | 06/30/2024 | 06/30/2025 | 10,000,000 Each Claim |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Certificate Holder is included as Additional Insured (except as respects coverage afforded by the Workers Compensation) and is granted a Waiver of Subrogation as required by written contract, but only for liability arising out of the Operations of the Named Insured. This insurance certified herein will apply as Primary and Non-Contributory as required by written contract. No policy will permit carrier cancellation without thirty (30) days prior written notice to the Certificate Holder.
(See Attached Descriptions)

CERTIFICATE HOLDER**CANCELLATION**

| | |
|--|---|
| Town of Juno Beach 340 Ocean Drive Juno Beach, FL 33408 | 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  |
|--|---|

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ACORD 25 (2016/03) 1 of 3
#S45667555/M45112568

The ACORD name and logo are registered marks of ACORD

SACT

TAB 5

REQUIRED FORMS





5

REQUIRED FORMS

**SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(a),
FLORIDA STATUTES, ON ENTITY CRIMES**

1. This sworn statement is submitted to the Town of Juno Beach, Florida

by Samantha Danchuk

(print individual's name and title)

for Aptim Environmental & Infrastructure, LLC

(print name of entity submitting sworn statement)

whose business address is 6401 Congress Avenue, Suite 140, Boca Raton, FL 33487

and (if applicable) its Federal Employer Identification Number (FEIN) is: 77-0589932

(If the entity has no FEIN, include the Social Security Number of the Individual signing this sworn statement: _____)

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), **Florida Statutes**, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any proposal or contract for goods or services to be provided to any public entity or an agency or political subdivision or any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), **Florida Statutes**, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), **Florida Statutes**, means:

- a. A predecessor or successor of a person convicted of a public entity crime; or
- b. An entity under the control any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

5. I understand that a "person" as defined in Paragraph 287.133(1)(e), **Florida Statutes**, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into binding contract and which proposals or applies to proposal on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies

to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

6. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. **(indicate which statement applies.)**

 X Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

 The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

 The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. **(attach a copy of the final order)**

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT HIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

Samantha Danchuk
(Signature)

The foregoing document was sworn and subscribed before me this 31 day of July, 2024 by Samantha Danchuk, who is personally known to me or produced as identification.

Tracie H. McCauley
Notary Public
My Commission Expires:



**SCRUTINIZED VENDOR CERTIFICATION
PURSUANT TO SECTION 287.135, FLORIDA STATUTES**

This sworn statement is submitted to the Town of Juno Beach, Florida

by Samantha Danchuk
(print individual's name and title)
for Aptim Environmental & Infrastructure, LLC
(print name of entity submitting sworn statement)

whose business address is 6401 Congress Avenue, Suite 140, Boca Raton, FL 33487

and (if applicable) its Federal Employer Identification Number (FEIN) is: 77-0589932

(If the entity has no FEIN, include the Social Security Number of the Individual signing this sworn statement: _____)

1. I hereby certify that the above-named entity:
 - A. Does not participate in the boycott of Israel; and
 - B. Is not on the Scrutinized Companies that Boycott Israel List.
2. If the Contract for goods and services is for more than \$1,000,000, I hereby certify that the above-named entity:
 - A. Is not on the Scrutinized Companies with Activities in Sudan List; and
 - B. Is not on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List; and
 - C. Has not engaged in business operations in Cuba or Syria.

Section 287.135, Florida Statutes, prohibits the Town from: (1) contracting with companies for goods or services in any amount if at the time of bidding on, submitting a proposal for, or entering into or renewing a contract if the company is on the Scrutinized Companies that Boycott Israel List, created pursuant to Section 215.4725, Florida Statutes, or is engaged in a boycott of Israel; and (2) contracting with companies, for goods or services over \$1,000,000 that are on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List created pursuant to Section 215.473, Florida Statutes or is engaged in business operations in Cuba or Syria.

As the person authorized to sign on behalf of the above-named entity, I hereby certify that the statements set forth above are true and that pursuant to Section 287.135, Florida Statutes, the submission of a false certification may subject the company to civil penalties, attorney's fees and/or costs. I further understand that any contract with the Town for goods or services may be terminated at the option of the Town if the company has been found to have submitted a false certification.

Samantha Danchuk
(Signature)

The foregoing document was sworn and subscribed before me this 31 day of July, 2024 by Samantha Danchuk, who is personally known to me or produced as identification.

Tracie H. McCauley
Notary Public
My Commission Expires:

