

CAPTIVA ISLAND BAYSIDE ADAPTATION PLAN

October 25, 2023



PROPOSED TO:
**CAPTIVA EROSION
PREVENTION DISTRICT**

PROPOSED BY:
**APTIM ENVIRONMENTAL &
INFRASTRUCTURE, LLC**



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.



October 25, 2023

Daniel Munt
Executive Director
Captiva Erosion Prevention District
Email: DMunt@mycepd.com

Subject: Captiva Bayside Adaptation Plan RFQ

Dear Members of the Selection Committee,

Captiva Island is a true gem with natural beauty and a unique charm. The white beaches and clear blue waters have not only captivated our hearts but has sparked a desire to share its magic with others. **Aptim Environmental & Infrastructure, LLC (APTIM), a Louisiana Limited Liability Company incorporated in 2002** has served the Captiva Erosion Prevention District (CEPD) as it strategically restored and enhanced the oceanfront shoreline decade by decade, culminating in the key protective infrastructure that has helped the community thrive through dozens of storms, including Hurricanes Charley and Ian. The Captiva Bayside Adaptation Plan may serve as the catalyst of a new era of protection provided by CEPD as tides rise and storm threats increase. APTIM and our team of proposed subconsultants (the APTIM team), Coastal Vista, AIM Engineering, Matterscan, Sasaki, ESA, and Richard Grosso are passionately committed to building consensus within the community for implementable projects, developing a plan likely to be funded by state resiliency funds and establishing a vision for a healthy, robust living shoreline along the bayside of the island that increases in value over the long term. On behalf of APTIM, we want to express our dedication to furthering the goals of CEPD by submitting our qualifications for the development of the Captiva Bayside Adaptation Plan (Plan).

OUR APPROACH - Utilizing the insight gained from completing the island-wide vulnerability assessment, APTIM understands the need for prioritizing adaptation along private shorelines, securing wastewater treatment infrastructure and coordinating with partners to increase the resilience of energy, communication and transportation systems. Our intent for the Plan will be to address these vulnerabilities and mitigate flood risk holistically, thoughtfully considering how erosion control improvements can protect the infrastructure on the island.

APTIM will reference the gold standard for resilient shorelines, the Waterfront Edge Design Guidelines (WEDG®) and incorporate its best practices for community engagement, maintaining access for docks and recreational boating and designing ecologically friendly buffers and barriers. By rendering a generous number of immersive, appealing images of feasible and implementable solutions to support the engineering report, the APTIM team will show the community the realm of possibilities. In coordination with the steering committee (Committee), we will gain buy-in from residents, regulators and funders to make the vision a reality.

BUILDING A VISION FOR BAYSIDE ADAPTATION - Our vision will support to rebuild strength of the coastal ecosystem protecting the shoreline, fortify the existing infrastructure and property values, and secure the future of the island as a prestigious, unique and thriving community with renowned beauty and strength.

WHY THE APTIM TEAM - The APTIM team has unmatched institutional knowledge as being the CEPD's sole and steadfast coastal consultant dating back to the mid-1980's through our legacy firms and understands the work that needs to be done. We have supported the CEPD in reaching this point through guidance on vulnerability assessments, the Resilient Florida program and other funding opportunities and initial concepts for adaptation planning. In listening intently to the expressed interests of the Commission, staff and committee members, we have broadened our vision and carefully selected local and nationally recognized team members that are leading the industry in designing living shorelines, developing adaptation plans and community engagement. APTIM will be the prime consultant, bringing proven project management experience to CEPD for various projects and we will provide the management and planning roles. The APTIM team consists of the

award-winning landscape architect, **Sasaki** and Sanibel's own premier private property landscape architect **Coastal Vista Design** who will lead the aesthetic visioning for conceptual solutions. APTIM is also proud to include Environmental Science Associates (**ESA**), Florida's leading living shoreline implementor who will lead the environmental design and implementation analysis. Richard Grosso will lead the policy analysis to support the plan. To maximize the power driving the Engineering Report and Adaptation Plan, **AIM Engineering and Surveying, Inc.** will join the team with unmatched collective experience in flood control, designing resilient infrastructure systems and implementing projects in Florida. Together the APTIM team brings extensive coastal design, engineering and planning experience to CEPD. We present our relevant experience along shorelines not only in Captiva, but on Sanibel, the Town of Longboat Key, and across the state and through plans crafted specifically for island communities. For this RFQ, we are presenting the same management team currently working with the CEPD that you have come to know and rely on. Nicole Sharp, PE, will serve as the primary point of contact for this proposal and project.


BUSINESS PHILOSOPHY – Since our inception, APTIM has provided full-scale engineering, environmental remediation, operations and maintenance, program/construction management, and design and construction services for government and private sector clients, including remediation and restoration of contaminated sites, emergency response, and disaster recovery. With a combined workforce of **more than 3,500 employees** in over 49 corporate/project offices and more than 100 field offices, we provide reliable solutions while maintaining a relentless focus on safety and an uncompromising standard of quality.

Our personnel are valued for their expertise and dedication to client services and quality products. These attributes have resulted in a high rate of repeat clients and the kudos we receive for our work. We have a well-balanced mix of engineers, construction experts, project management professionals, and scientists to provide superior service to our clients. Our corporate headquarters is located at: **1200 Brickyard Lane, Suite 202, Baton Rouge, LA 70802, Phone: 833.862.7846. The following is a list of our corporate principals:**

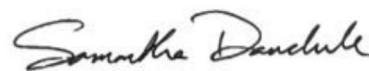
- ▶ Wade Bass
- ▶ Greg Coffman
- ▶ William Deane Jr.
- ▶ Steve Downey
- ▶ Mark Fallon
- ▶ Daniel Gray
- ▶ Todd Kindler
- ▶ Katherine Kolibas
- ▶ Bradley Lowe
- ▶ Ulrika Messer
- ▶ Margaret Phillips
- ▶ Mike Ramage
- ▶ Alan Weakley
- ▶ Mick Williams

We understand the critical work to be done for your community and make a positive commitment to perform in accordance with the terms of the proposal being submitted. We look forward to working with you again and anticipate the negotiation of mutually acceptable terms upon contract award. APTIM will leverage our unmatched knowledge, proven experience, and quality management services to ensure the successful delivery of this project.

Kind Regards,



Nicole Sharp, PE | Coastal Market Lead
Aptim Environmental & Infrastructure, LLC
(561) 361-3150 | nicole.sharp@aptim.com



Samantha Danchuk, PhD, PE | Resilience Lead
Aptim Environmental & Infrastructure, LLC
(561) 361-3199 | 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), **NICOLE SHARP, Coastal Market 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 Proposal for Captiva Erosion Prevention District for Captiva Bayside Adaptation Plan**

IN WITNESS WHEREOF, I have herewith signed my name and affixed the seal of Aptim Environmental & Infrastructure, LLC on this 20th day of October 2023.

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC

By: 

Name: Todd Kindler
Title: Assistant Secretary

Corporate Seal:



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, Resiliency Market 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 Proposal for Captiva Erosion Prevention District for Captiva Bayside Adaptation Plan**

IN WITNESS WHEREOF, I have herewith signed my name and affixed the seal of Aptim Environmental & Infrastructure, LLC on this **4th** day of October 2023.

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC

By: _____

Name: Todd Kindler


Title: Assistant Secretary

Corporate Seal:



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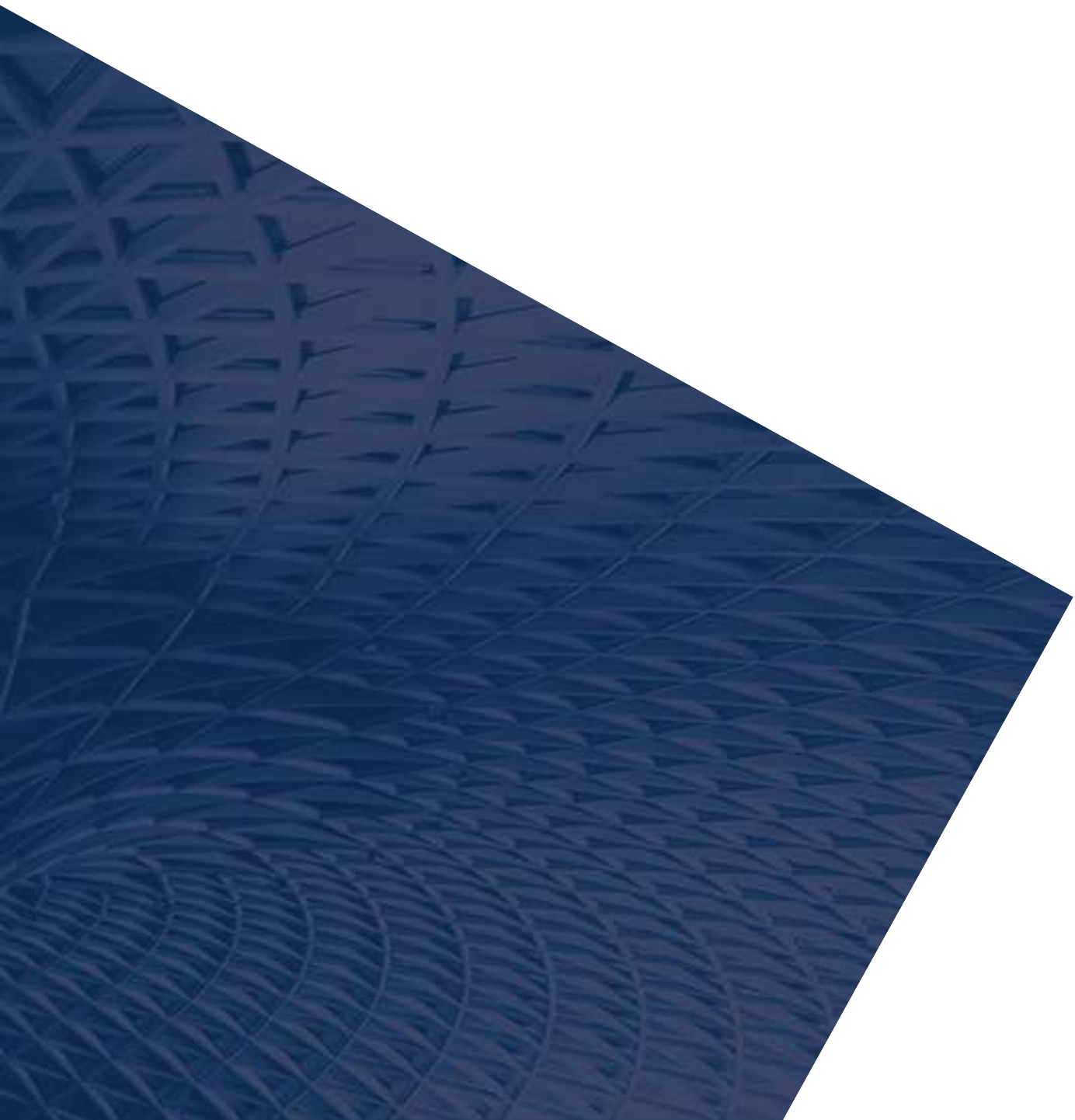
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APTIM team member, Sasaki has led the design and visioning for the award-winning landmark shoreline redevelopment projects in Sarasota, Key West and along the Atlantic.

Sasaki's Greenwood Community Park Master Plan Honored by the 2023 ASLA Professional Award. Baton Rouge, LA

TAB 1 EXECUTIVE SUMMARY



Executive Summary



The APTIM team is ready to support the CEPD through the next era of building resilience along the bayfront shoreline through wise adaptation, collaboratively implemented by the community with an expectation of high returns on investment.

Expect the extraordinary. APTIM is your current coastal engineering consultant, and in partnership with CEPD, we have assessed the vulnerabilities on Captiva and aided in obtaining the Resilient Florida grant for this project. Recognizing the grand vision for this next step in building resilience into the Comprehensive Island-wide Management Plan, APTIM has engaged the most qualified, top tier partners in the industry to increase our capabilities in responding to any issues and interests that arise through this project. In summary, our approach will center on leveraging the experience and relationships of the team to expand the vision and feasibility of opportunities to adapt the shoreline on Captiva.

- ▶ APTIM will work directly with CEPD, serve as the primary point of contact to fulfill the requirements of this project and ensure we meet the timeline requirements of the steering committee, grant and Commission. APTIM will lead the adaptation plan development in concert with **AIM Engineering and Surveying, Inc.** Working with AIM, Lee County's prime consultant for flood mitigation analysis, planning and projects, will ensure alignment with intergovernmental planning objectives, funding, and best practice in reducing local flood risks. Raising the bar, **Richard Grosso, P.A.**, the state's foremost environmental policy advocate will advise on the most productive strategy for Captiva's long-term goals.
- ▶ Nature-based solutions for adaptation of the shoreline and submerged lands along the bayfront of Captiva will be envisioned and designed conceptually by **Environmental Science Associates (ESA) and Sasaki**. Their renderings and designs stand out as the most inspiring and beautiful and have compelled community stakeholders and regulators to implement and celebrate living shoreline projects statewide. To make the renderings look real, **Matterscan** will be collecting digital twin images of Captiva. To further ensure concepts meet the high standards of Captiva residents, Sanibel's own **Coastal Vista Design** will support planning for harmonization and ground-truth the applicability of design elements. The APTIM team recognizes the CEPD's interest in visual options and will provide as many as **25 Conceptual Adaptation Drawings and renderings** for the CEPD and residents.

Vision for the Captiva Bayside

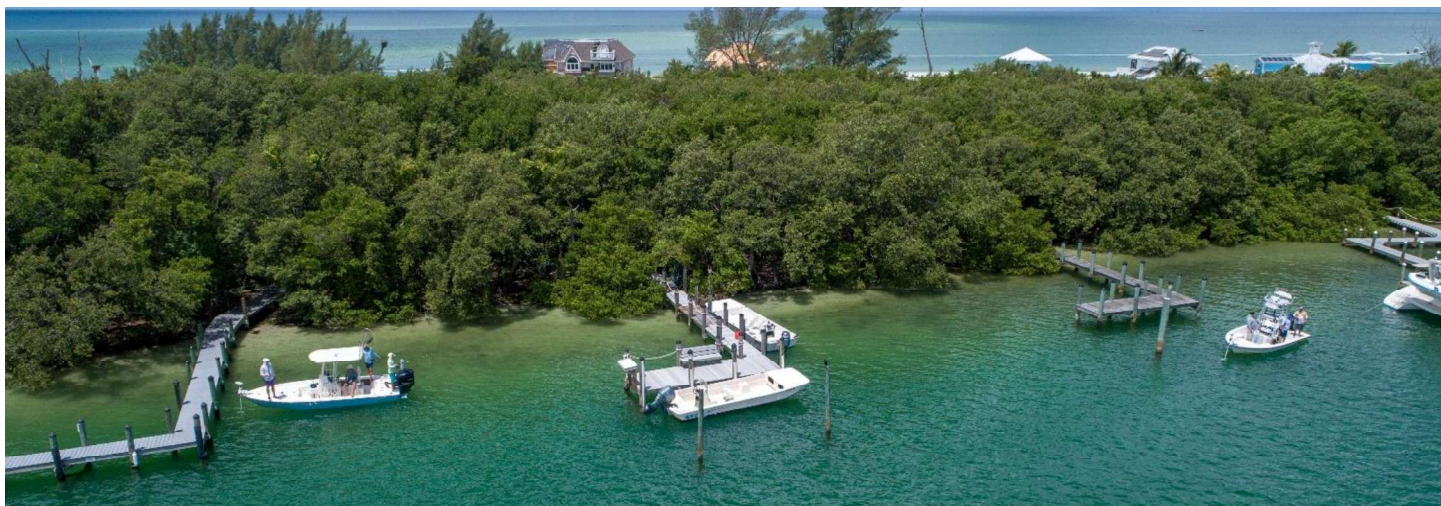
Let the beauty of Captiva's waters, coastlines, and the enjoyment of all who spend time there be the legacy of the island. Together, let's inspire consensus amongst residents for the need for action to prevent repetitive flooding and avoid weakness following natural disaster events. With a clear path for the future, the CEPD will be prepared to coordinate the necessary investments in adaptation and private property owners will have clearly defined roles and responsibilities. The Bayside Adaptation Plan will include short term and long-term actions to support robust protection along the bayfront with the co-benefits of preventing overtopping of shorelines, surge flooding of transportation, water, energy and communication infrastructure and limiting economic shocks to insurance rates, property values and emergency reserve funds. We stand ready to build upon the success of your beach management program and our understanding of CEPD process to protect the bayside and reap the rewards of a resilient future.

The focus areas for the adaptation plan and stakeholder engagement may center around the areas of vulnerability adjacent to Chadwick Bayou, Central Captiva, Roosevelt Channel and Blind Pass. Each area is subject to future flood risk and has unique opportunity for increased resilience through ecological restoration, flood protective infrastructure and consistent adaptation policy. Enhanced mangrove and seagrass areas coupled with shoreline stabilization may be used to derive cost-effective benefits. Such measures may mitigate flooding on an annual basis while giving residents additional time to adapt their own properties as sea level rises. ***A key success indicator for this project will be to identify feasible projects early in the timeline to support applying for the next phase of pre-design and construction funding for initial projects.***

In previous work for CEPD, APTIM has identified the challenges of collecting easements from private property owners to construct bayfront projects and permitting large scale adaptation projects of sovereign submerged lands. With consideration of these challenges, APTIM has brought together the right industry leaders and community partners to efficiently deliver Captiva the solutions desired.

Proposal Summary

This proposal is organized to introduce the team and key staff, explain the approach and showcase our wealth of experience in adaptation planning, living shorelines and management of relevant grant projects. We commit to exceeding expectations and meeting the required timeline and budget.

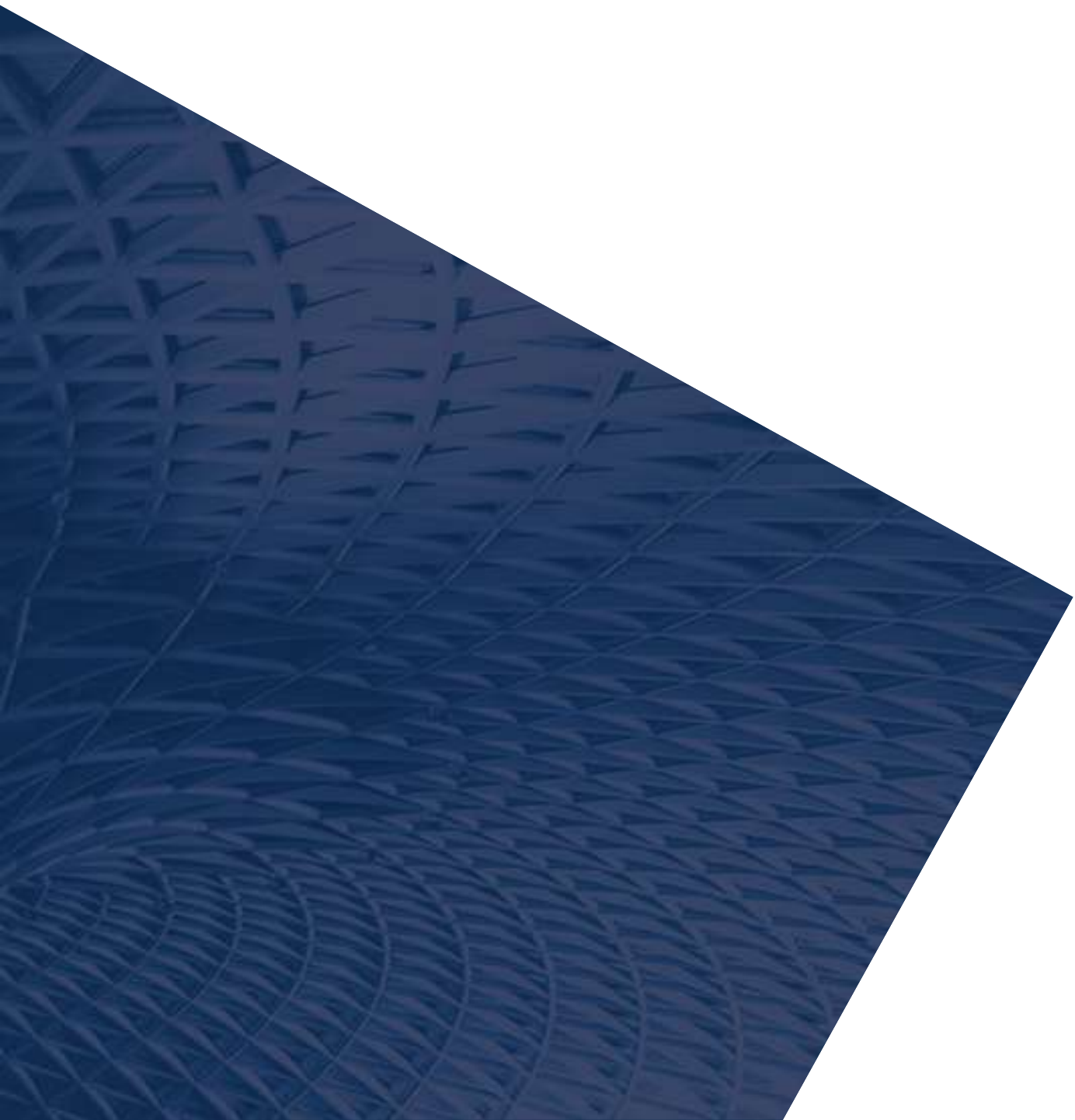


APTIM's Committed to Adaptation in CEPD

Aptim has managed, designed, and overseen the construction of these critical resilience projects in Captiva and the region.

- ▶ Hurricane Ian response and recovery efforts
- ▶ Beach and dune projects on Captiva since 1988
- ▶ Federal and State funding assistance
- ▶ Economic/Benefit calculations
- ▶ Rehabilitation of Redfish Pass terminal groin
- ▶ FDEP/ USACE permitting
- ▶ Island-wide Vulnerability Assessment

TAB 2 RELEVANT EXPERIENCE



Relevant Experience

Aptim Environmental & Infrastructure, LLC (APTIM) provides expert professional community, policy, infrastructure, energy and economic resilience services for coastal resilience, disaster recovery, flood mitigation, energy efficiency and sustainable redevelopment projects. Our experience, innovative technologies, and national footprint have given us the opportunity to bring resilience and recovery support and innovation to state agencies, counties, cities, and municipalities throughout the nation. APTIM works to strengthen communities, so they are better prepared to resist climate change, bounce back after crisis, and rapidly recover with minimal outside assistance.



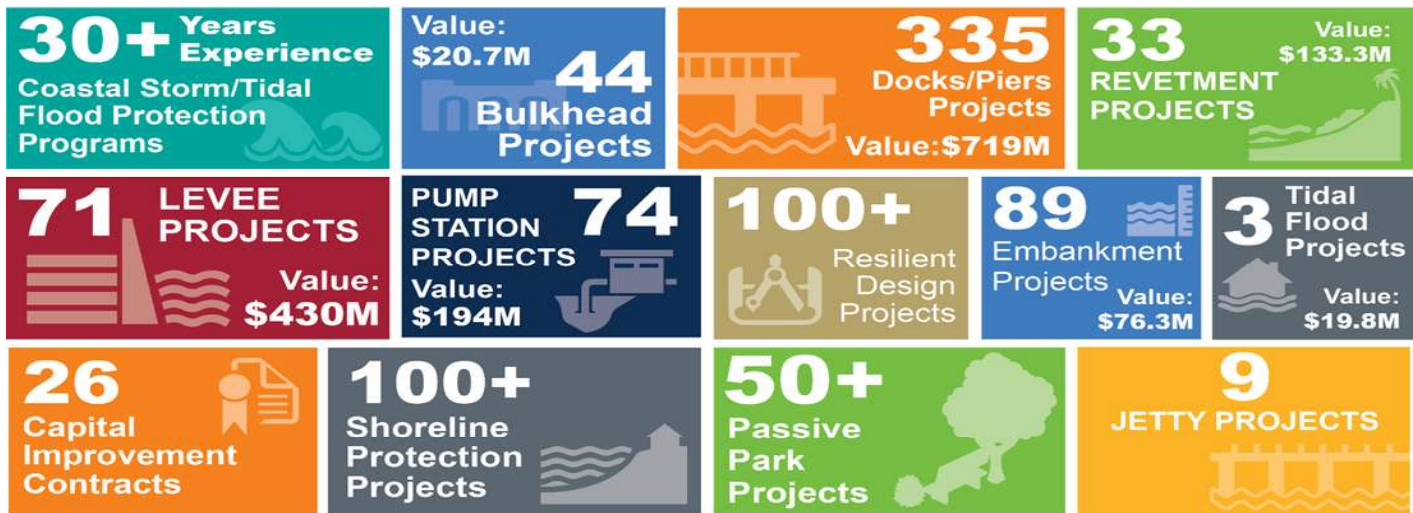
APTIM is a nationally recognized provider of resiliency consulting services: Platform Partner for the 100 Resilient Cities program and subject matter expert (SME) for 25+ jurisdictions under the Housing and Urban Development (HUD) National Disaster Resilience Competition (NDRC). These projects provide insightful practical lessons on evaluation criteria, decision points, policy and program objectives and implementation strategies to consider as part of the risk assessment and resilience plan approach. We offer CEPD 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 10 environmental management firm.

APTIM has developed more than a dozen adaptation plans and hundreds of coastal projects. APTIM’s submits the following **references** for relevant adaptation plans, described in detail in the project examples section.

- ▶ *Town of Longboat Key, Sea Level Rise and Recurring Flooding Adaptation Plan (page 6)*
- ▶ *South Florida Regional Planning Council, Military Installation Resilience Review (page 7)*
- ▶ *City of Delray Beach Sea Level Rise Plan (page 8)*

23 projects are highlighted in this proposal, both in this section and the “Other Information” section. These projects are directly relevant to Captiva but represent only a preview of the depth of relevant experience the APTIM team has in this field.



Project Team Including Subconsultants

Our proposed team commits to dedicating our time and expertise to see this project through completion. APTIM’s multi-disciplinary team comprises knowledge-based engineers, planners, nature-based and hybrid solutions experts, biologists, environmental consultants, surveyors, community engagement professionals, resiliency experts, and specialists augmented by our key subconsultants:



Coastal Vista Design, Inc. (M/WBE) | Landscape Architecture is a Sanibel-based landscape architecture studio established by Leigh Gevelinger in 2016. We have provided landscape architecture services for many commercial and residential projects throughout Lee and Collier Counties.

Sasaki | Landscape Architecture has been guided by the commitment to a collaborative style of design for nearly 70 years. Sasaki's global experience includes award-winning work across a range of scales, disciplines, geographies, and industries.



MatterScan (WBE) | Digital Twins provides capture solutions for today's projects. We possess the resources, the experience, and the capabilities necessary to provide a complete range of digital twin development. We provide our clients with quality reality capture services backed by state-of-the-art equipment and software.

Environmental Science Associates (ESA) | Environmental Science, Nature-Based & Hybrid Solutions, Living Shorelines Formed in 1969, ESA brings more than 50 years of experience in a wide range of environmental services, including climate adaptation planning and resilience solutions; environmental assessments and impact statements; **permitting**, and **compliance**; living shorelines design, **ecosystem restoration and mitigation design**.



AIM Engineering & Surveying, Inc. (AIM) | Local Stormwater and Roadway Design and County Policy Expert Founded in Lee County in 1980, our services include general site civil; parks and recreation; water resources; environmental and permitting; marine and coastal engineering; utilities; transportation planning and design; project development and environment (PD&E) studies; surveying and mapping; geographic information systems (GIS); subsurface utility engineering (SUE); public outreach/involvement.

Team Organization Chart

Figure 2-1 portrays the organization chart for this effort. The chart highlights the **ten key personnel** that will lead project efforts across tasks, their anticipated roles. A summary of their previous experience is outlined in Table 2-1. Additional support staff available to assist with tasks are also outlined within the organization chart and will be instrumental in developing deliverables.

CAPTIVA BAYSIDE ADAPTATION PLAN

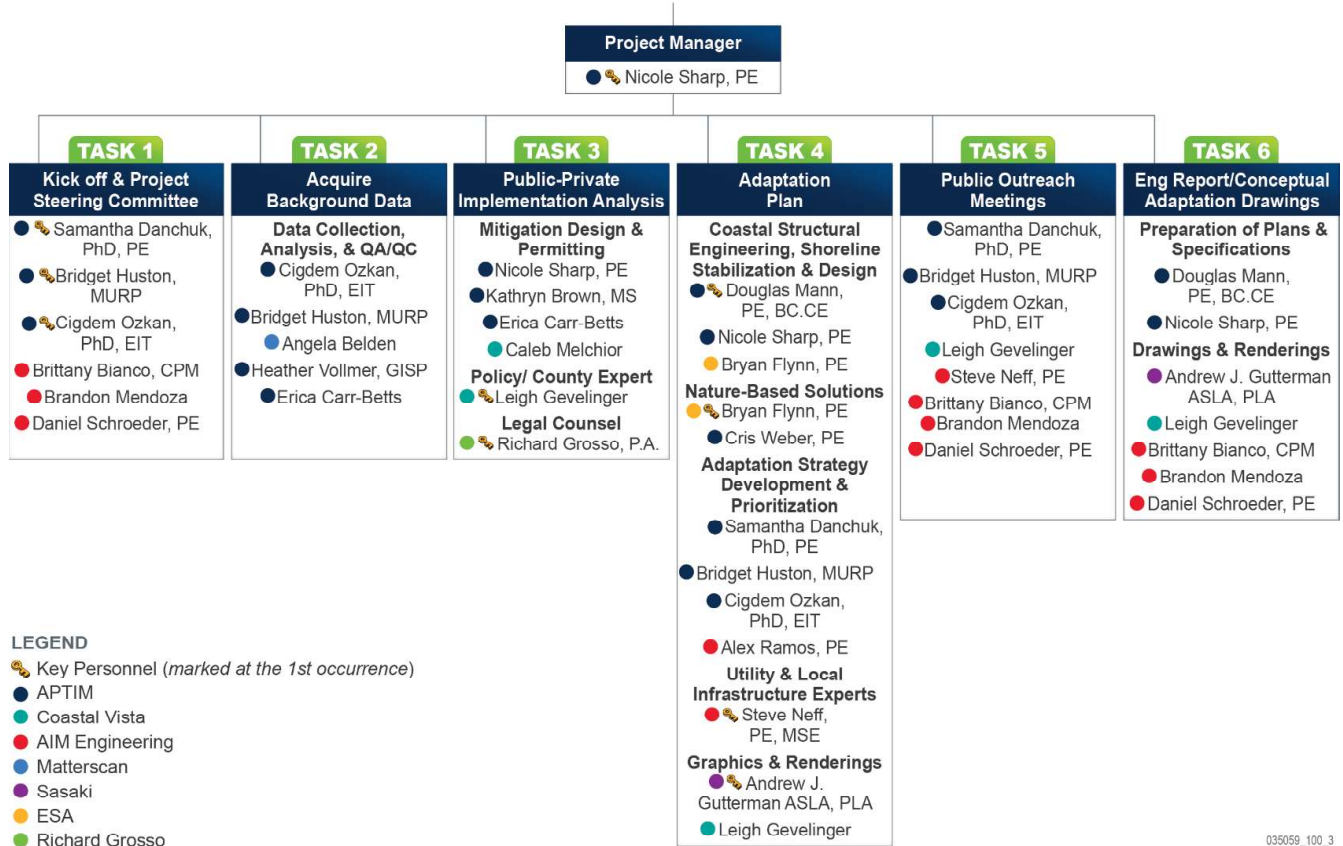


Figure 2-1. Organizational Chart

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Key Personnel and Roles

Nicole Sharp, PE – Project Manager

- ▶ Direct experience managing Captiva’s coastal projects since 2008.
- ▶ Has 15 years of experience, specializing in coastal restoration and modeling.
- ▶ Expertise in planning, design, engineering, specifications, field investigations, construction oversight, and feasibility studies of coastal engineering projects.
- ▶ Extensive experience in planning processes, complex environmental permitting, NEPA, and the review of EAs for projects in sensitive areas.

Samantha Danchuk, Ph.D., PE – Outreach Coordinator and Facilitator | Adaptation Plan Developer

- ▶ 17 years of program/project management and resilient engineering experience.
- ▶ Seven years as Broward County’s Assistant Chief Resilience Officer and Capital Program Administrator
- ▶ Ten years as a coastal resilience engineer with experience developing 10+ adaptation plans

Bridget Huston, MURP – Outreach Coordinator and Facilitator | Data Analyst | Adaptation Plan Developer

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

Cigdem Ozkan, Ph.D, EI – Outreach Coordinator and Facilitator | Data Analyst | Adaptation Plan Developer

- ▶ Eight 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

Douglas Mann, PE, BC.CE – Adaptation Plan and Engineering Report Developer

- ▶ 36+ years of experienced in all aspects of coastal engineering.
- ▶ Experienced in Environmental Resource permitting, and Florida Department of Environmental Protection Coastal Construction Control Line permitting.
- ▶ 2017 recipient of the Florida Shore & Beach Preservation Association Per Bruun Distinguished Service Award

Leigh Gevelinger, PLA – Landscape Architect | County Policy Expert | Conceptual Plan – Coastal Vista

- ▶ 17 years of experience with design-build landscape architecture and construction administration.
- ▶ Since 2010, worked on Sanibel & Captiva Islands and has a strong knowledge of local code, permitting, and construction processes.
- ▶ A deep knowledge of South Florida plants and ecosystem functions

Andrew J. Gutterman ASLA, PLA – Landscape Architect | Conceptual Plan Designer – Sasaki

- ▶ 20 years of professional experience as an ASLA award-winning landscape architect.
- ▶ Keen understanding of natural systems that informs all aspects of the planning and design process.

Bryan Flynn, PE – Nature-Based and Hybrid Solutions, Living Shorelines SME – ESA

- ▶ 20 years’ experience in coastal engineering, hydrographic surveying, permitting, project management, and construction administration.
- ▶ Expertise includes shoreline protection and coastal restoration, coastal monitoring, beach nourishment, inlet processes, and dredging and navigation.

Steve Neff, PE – Local Stormwater Infrastructure and Roads Specialist – AIM Engineering

- ▶ 40+ years of experience dedicated to engineering, construction, and public works.
- ▶ 30+ years of experience in permitting, water quality treatment, and flood mitigation and analysis.

Richard Grosso, P.A. – Environmental Policy Advocate

- ▶ Public interest environmental and land use lawyer with 35+ years of experience dedicated to advocating on behalf of clients seeking to use the law to promote and protect the public interest in preserving our natural resource, communities, and planet.
- ▶ Experienced in state, federal, administrative and civil court, and a member of the Florida Bar.

Table 2-1 Key Personnel and Roles

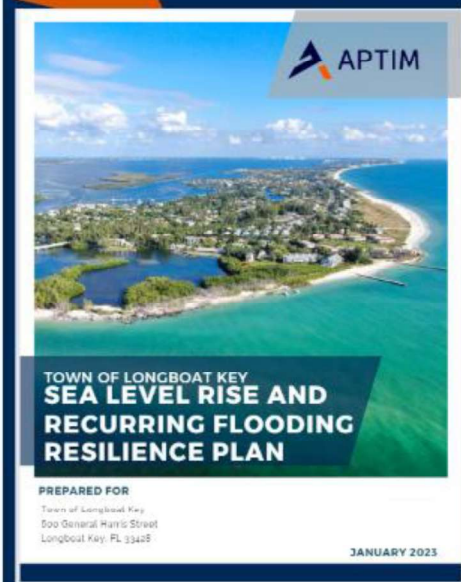


PROJECT EXAMPLES

Island-wide Adaptation Plan

LONGBOAT KEY, FLORIDA | APTIM

PROJECT HIGHLIGHTS



APTIM completed a Vulnerability Assessment and Adaptation Plan for the Town of Longboat Key compliant with Florida Statutes 380.093. Based on the results of the assessment, APTIM was able to quantify and qualify impacts and risk to critical assets and develop an adaptation strategy implementation and funding plan.

APTIM helped facilitate focus group meetings, public workshops, and presentations to the Town Commission.

Client

Town of Longboat Key, FL

Project Dates

August 2019–2023

Project Budget

\$259,936

Relevance/Highlights

- ✓ Bulkhead Elevation and Dune Assessments
- ✓ Vulnerability Assessment
- ✓ Resiliency Strategies
- ✓ Critical Infrastructure Mapping
- ✓ Public Meetings
- ✓ Funded by FDEP Resilience Florida Planning Grant
- ✓ FDEP compliant deliverables

Client Reference

Isaac Brownman
Public Works Director
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL
941.316.1988
ibrownman@longboatkey.org

Project Description

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: conduct comprehensive flood exposure, sensitivity, and risk assessments for island and county, define impacts, develop adaptation strategies to formulate an implementation and funding plan. APTIM led and participated in focus group meetings, public workshops, and presentations to the Town Commission.

Project Successes

- ▶ Performed a community vulnerability assessment that examined historic, existing, and potential natural hazards and their impacts on the physical-built environment.
- ▶ Developed an adaptation plan for the Town fueled by the vulnerability assessment findings.
- ▶ Provided public engagement and town commission support to provide information on the study and to garner support for resiliency initiatives, policy, and the adaptation plan.
- ▶ Developed short- and medium-term resilient capital improvement plans based on conceptual design of recommended adaptation strategies.
- ▶ Identified potential funding sources and included in the adaptation plan based on eligibility of measures.
- ▶ Submit for grant reimbursement on behalf of Town and obtain acceptance of deliverables.

Military Adaptation Plans

KEY WEST, DANIA BEACH, HOMESTEAD, DESTIN, PANAMA CITY, PENSACOLA | APTIM

PROJECT HIGHLIGHTS



APTIM performed a vulnerability assessment of four South Florida military installations across three counties. We identified medium and high risk critical infrastructure for each installation and helped formulate adaptation strategies to address all major vulnerabilities. Continuous stakeholder outreach, working group meetings, and Study Advisory Committee Workshops were held to solicit input and ground-truth results.

Project Description

The South Florida and Northwest Florida Military Installation Resilience Reviews (MIRR) support the long-term resilience of some of the Department of Defense's most significant military installations and the communities that support them.

APTIM is working on these two multi county Military Installation Resilience Reviews alongside other consultants. Both reviews follow a similar scope of work and necessitate similar tasks and deliverables. **The South Florida Military Installation Resilience Review** includes the Homestead Air Reserve Base (HARB), United States Army Garrison-Miami (USAG-Miami), US Naval Surface War Center South Florida Ocean Measurement Facility (SFOMF), and the United States Naval Air Station Key West (NASKW). **The North Florida Military Installation Resilience Review** includes the Eglin Air Force Base, Hurlburt Field, Tyndall Air Force Base, Naval Air Station Whiting Field, Naval Support Activity Panama City, and the Naval Air Station Pensacola.

APTIM performed environmental (flood, wind, heat, lightning, fire), socioeconomic (affordability of housing), and future conditions (age of infrastructure) vulnerability assessments for critical infrastructure, including all water systems and energy infrastructure on all installation locations that could be mitigated through community investments and solutions. APTIM facilitated numerous stakeholder meetings and interviews, working group meetings, and steering committee workshops to collect data and information, ground truth findings, and workshop adaptation strategies. The final phase of the projects was a design-build of approved resilient infrastructure projects. The project team identified recommendations and actions for DOD, stakeholders, and relevant agencies to address shared responsibility of climate risks. Recommendations included responsible parties, timelines of impacts, identification of priorities (short, medium, and long-term), estimated costs, a monitoring plan, appropriate financing mechanisms to implement the recommendations.

Project Successes

- ▶ Completed exposure, sensitivity, adaptive capacity, and risk assessments and associated geodatabase.
- ▶ Identified critical assets to be prioritized for adaptation to prevent potential infrastructure failure proactively and to assign the adaptation funding where it is needed the most.
- ▶ Developed adaptation strategies and workshopped feasibility and implementation for highest risk assets.

Client

South Florida Regional Planning Council

Project Dates

November 2022–January 2023 (Vulnerability Assessment)

Role

Subcontractor to Jacobs

Project Budget

\$184,000

Relevance/Highlights

- ✓ Data collection and analysis
- ✓ Vulnerability assessment
- ✓ Working Group and SAC Workshops
- ✓ Stakeholder interviews
- ✓ Adaptation Planning

Client Reference

Christina Miskis
Project Manager
South Florida Regional Planning Council
1 Oakwood Blvd, Suite 250
Hollywood, FL 33021
(954) 924-3653
cmiskis@sfrpc.com

Seawall Adaptation Plan

DELRAY BEACH, FLORIDA | APTIM

Project Description

APTIM reviewed available water level data, analyze return periods of extreme events, and to determine water level projections for the City of Delray Beach's requested 30-year and 75-year planning horizons. Field investigations were performed to catalogue existing conditions of seawalls, stormwater inlets and outlets, and backflow prevention devices. Analyses of the collected field data were performed to support the City in assessing its vulnerability to future seasonal flooding and to identify options to protect its infrastructure and citizen's property. APTIM outlined capital improvements for 58 public stormwater outfalls, 20 city owned seawalls, and 800 privately owned seawalls. APTIM also recommended that the City of Delray Beach update their existing seawall ordinance to encourage private compliance with the findings of the study. Findings and recommendations were outlined in the 2018 Intracoastal Waterway Water Level & Infrastructure Vulnerability Study. APTIM participated in several public meetings.

Project Successes

- ▶ Engineers inspected seawalls and stormwater infrastructure and assessed the current conditions in relation to the suggested minimum seawall heights.
- ▶ Recommended raising city owned seawalls and provided a prioritization of seawall repairs and or replacements for Capital Improvement Plan.

Client

City of Delray Beach, FL

Role

Prime

Project Dates

2017–2019

Project Budget

\$198,473.00

Relevance/Highlights

- ✓ Vulnerability Analysis
- ✓ Infrastructure Surveying
- ✓ Strategy Prioritization

Client Reference

Cynthia Buisson, P.E.
Engineering Division
City of Delray Beach
434 S. Swinton Ave.
Delray Beach, Florida 33444
(561) 243-7196
fuentesc@mydelraybeach.com

Chronic Flooding Adaptation Plan

TOWN OF CAROLINA BEACH, NC | APTIM

Project Description

In response to episodic flooding of major Town road from tides, storm surge, and rainfall, the Town retained APTIM to perform an assessment of recurring flooding due to elevated tides and storm surge within the yacht basin along Canal Drive. From the assessment of recurring storms and ongoing and future sea level rise, APTIM provided adaptation recommendations regarding 144 public and private bulkheads and the incorporation of additional backflow valves into Canal Drive's stormwater system. Subsequent to the initial work, APTIM has assisted the Town in providing a cost estimate for implementation of flood mitigation measures including bulkhead raising and stormwater improvements. APTIM has also assisted the Town in local ordinance development regarding bulkhead maintenance, reconstruction, and replacement.



Client

Town of Carolina Beach, NC

Role

Prime

Project Dates

2017-2019

Project Budget

\$42,000

Relevance/Highlights

- ✓ Adaptation Planning
- ✓ Community Engagement
- ✓ Disaster Recovery

Client Reference

Ed Parvin, Deputy Town Manager; Town of Carolina Beach, 1121 N. Lake Park Blvd., Carolina Beach, NC 28428; (910) 465-2766, ed.parvin@carolinabeach.org

Resilient Shorelines Toolkit

BROWARD COUNTY, FLORIDA | ESA

Project Description

Local sea-level projections indicate approximately 2-feet of sea level rise by 2060 and has the potential to exceed 200-days of nuisance tidal flooding per year. Broward County has nearly 292 linear miles of hardened, and 98 miles of natural, coastal shorelines. To create sustainable neighborhoods and address future property risks the County needed to respond immediately. **ESA** assisted Broward County in creating a program that promotes living shorelines and seawall enhancement alternatives to increase coastal resiliency. The program developed shoreline protection solutions that created habitat and increased design elevations to combat sea level rise for a variety of residential and municipal shorelines while preserving viewshed and water access. The case-studies explored four general site conditions: shallow-water, low- and high-wake conditions, and deep-water, low- and high-wake conditions. The ESA Team created renderings, brochures, a technical report with cost estimates and presentations to be used by the County in community outreach events. These documents were designed to lead the resident or community leader through the permitting process and discuss pricing options for different project elements.



Client

Broward County

Role

Prime

Project Dates

May 2019 (completed)

Project Budget

\$90,000 (fee)

Client Reference

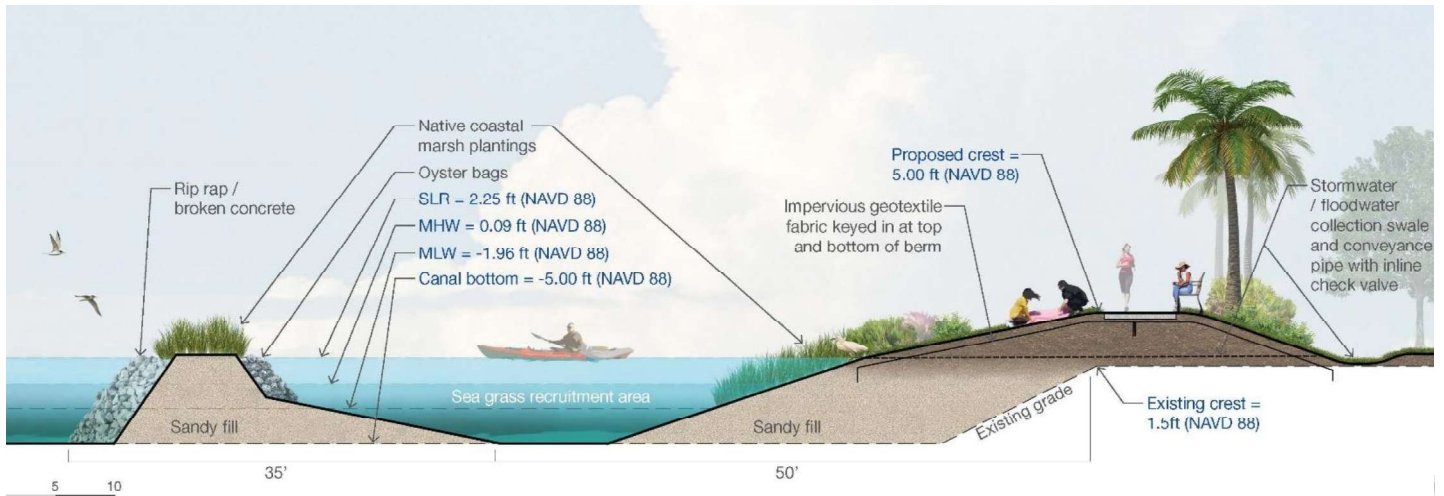
Jennifer Jurado, Ph.D.
Chief Resilience Officer
Broward County

115 S. Andrews Ave.

Ft. Lauderdale, FL

954.519.0316

jjurado@broward.org

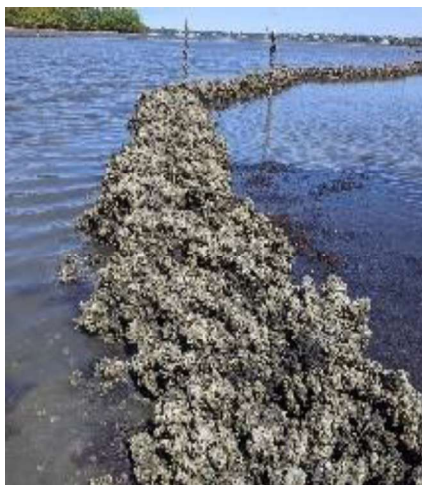


Philippe Park Living Shoreline

PINELLAS COUNTY, FLORIDA | ESA

Project Description

The Philippe Park site is located along the southern shoreline of the park along Old Tampa Bay. To help stabilize the eroded sections of this shoreline and provide another highly visible location for County residents to learn about the benefits of living shorelines, the County requested that ESA provide nature-based shoreline stabilization design options. Multiple options were designed for this area, inclusive of oyster beds, oyster bag arrays, and oyster domes, and offshore



breakwaters depending upon the site's wave energy conditions. All design options were based upon the results of a coastal conditions analysis that utilized modeling data, site specific survey information and coastal design calculations to size the material to withstand the wave energy this site has experienced over the past 100 years. Each treatment also includes the installation of native wetland plants to further stabilize the shoreline behind the various wave energy treatments. The living shoreline also protects critical cultural resources associated with the shell mound in the park.

Client

Pinellas County, FL

Role

Prime

Project Dates

2021 - 2023

Project Budget

\$67,000

Client Reference

Stacey Day, PhD

County Project Manager

(727) 464-4703

sday@pinellas.gov

Jungle Trail Shoreline Stabilization Project

INDIAN RIVER COUNTY, FLORIDA | ESA

Client Indian River County- Kirstin Leiendeckler, Project Engineer
1801 27th Street, Vero Beach, FL 32960 | (772) 226-1327

Date of Initiation / Completion
2019

Project Description The purpose of this project was to re-establish the eroded 4-foot shoulder of Jungle Trail to comply with County roadway specifications to increase the long-term resiliency of the roadway and the ability to provide safe passage to residents. Rock revetment and offshore breakwater designs were evaluated as potential solutions. A hybrid solution was chosen where limestone rip rap was placed to secure the long-term survival of mangroves and other native estuarine species planted along the new berm as an integral part of the shoreline stabilization. ESA provided Engineer of Record and Construction Administration Services.



Haya Park Living Shoreline Project

CITY OF TAMPA | ESA

Client City of Tampa- Karla Price, Project manager
3402 W. Columbus Drive, Tampa, FL 33607 | (813) 274-5134

Date of Initiation / Completion
2021/2022

Project Description ESA coordinated data collection efforts including topographic & bathymetric survey, vegetation, and wetland surveys to inform the permitting and design portions of the project. The purpose of this project was to protect the shoreline and the ancient oaks that were now vulnerable to collapse into the river. The project was phased to maximize grant funding with Phase 1 installing rip rap breakwater sills to dissipate boat wakes. Then fill was placed in Phase 2 to rebuild and revegetate the shoreline.



Southern Lee County Flood Mitigation Plan (SLCFMP)

LEE COUNTY, FLORIDA | AIM

Project Description

AIM Engineering & Surveying, Inc. (AIM) led the efforts on this large regional flood mitigation plan. The primary objective was the development of preliminary concept projects within the study area (southern Lee County) that would provide the ability to substantially mitigate future flooding due to significant storm events such as the combined Invest 92L and Hurricane Irma event. A system-wide approach aided in understanding the regional improvements when implementing concept projects, as well as identifying and mitigating adverse impacts to upstream and downstream components. The objectives of the SLCFMP included the development of a large scale regional hydrologic model for southern Lee County to evaluate the system impact of the collective concept projects for mitigating flood conditions. With data from this model, high-level evaluation reports were prepared for each concept including a preliminary Opinion of Probable cost.

A Project Prioritization Matrix was prepared to assist Lee County in evaluating concept implementation. As part of the regional modeling effort, a future conditions model was developed to look at the impacts of development growth as well as sea level rise. This same model looked at basin storage needs based on new development and evaluated and recommended allowable stormwater discharge rates for these new developments within each watershed basin. Finally, there was a model developed to focus on analyzing a storage/controlled discharge concept for the Crew-Flint Pen area relative to flood mitigation, but also looking at the year-round hydrological effect on this property. Throughout all this effort, coordination with various agencies and stakeholders was an ongoing objective. The project was successfully completed with several concepts being implemented now.

Client

Lee County

Role

Prime

Project Dates

11/2019- 08/2020

Project Budget

\$1.8 million

Client Reference

Luis Molina, Lee County Project Manager

(239) 533-8132 (Office)

(239) 822-7823 (Cell)

LMolina@leegov.com

BIG Arts Landscape Design, Sanibel

SANIBEL ISLAND, FLORIDA | COASTAL VISTA DESIGN

Client Reference Lee Ellen Harder, Executive Director, BIG Arts Sanibel | 90 Dunlap Road, Sanibel, FL | (239) 395-0900 | lharder@bigarts.org

Date of Initiation / Completion
2023 | Ongoing

Project Description The design team preserved the original building footprint which is integral to the history of BIG Arts while expanding the function of the building and the campus. Coastal Vista Design evaluated existing site issues, mapped existing vegetation, and created a 100% native plant design for the BIG Arts Sanibel campus. Our studio created concepts which received positive reviews from the BIG Arts Board and community, then guided the design team through permitting with the City of Sanibel.

City Adaptation Plan

ALBANY, GA | APTIM

Client Reference Derrick L. Brown, Chief Financial Officer, Procurement Division City of Albany - 222 Pine Ave, Suite 260, Albany, GA 31701 | (229) 431-2107 | dbrown@albanyga.gov

Date of Initiation / Completion
2019 | 2020

Project Description APTIM was contracted by City of Albany, GA to develop the City's Resiliency Plan. This project is funded by the Community Development Block Grant for Disaster Recovery (CDBG-DR) and founded on a comprehensive city-wide property survey. APTIM's primary goal is to create a resilient community, equipped to withstand and recover from unexpected weather events. The plan encompasses various elements, from building codes to utilities and flood prevention, all designed to fortify Albany against natural disasters.

Sarasota Bayfront Master Plan

SARASOTA COUNTY, FLORIDA | SASAKI

Project Description

The Sarasota Bayfront Master Plan lays the groundwork to transform a 53-acre, city owned site on the stunning “Cultural Coast” of Florida into a more inclusive and welcoming community waterfront destination. The project delivers a long-term master plan to guide future improvements to the valuable site— establishing a cultural and economic legacy for the region while ensuring open, public access to the Bayfront. The Sarasota Bayfront Planning Organization, a nine-person citizen board, hired **Sasaki** in 2017 to lead this Master Planning effort. Since then, Sasaki and Agency Landscape + Planning have led the process of giving shape to the community’s vision. The site occupies a prime location with sweeping waterfront views and is anchored by several beloved cultural institutions. However, until now, the site has not fully leveraged its inherent potential to serve as a treasured community asset, as it sits covered in surface parking lots that make it 65% percent impervious. The plan, once implemented, will enhance the cultural vitality of the site, provide expanded public open space, improve connectivity to other parts of the city, and offer an economically and environmentally sustainable long-term management strategy.

Client

Sarasota Bayfront Planning Organization

Role

Prime

Project Dates

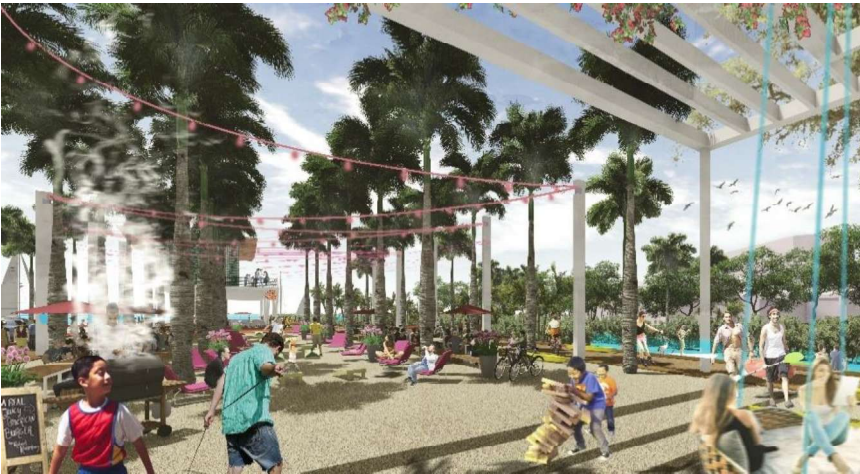
2/2018 - 6/2019

Project Budget

\$850,000

Client Reference

Bill Waddill, Director Sarasota Bayfront Planning Organization
655 N Tamiami Trail Sarasota, FL 34236
bill.waddill@sbpo.org
941.266.1717



RESUMES

NICOLE S. SHARP, PE

PROJECT MANAGER | APTIM



Professional Summary

Ms. Nicole Sharp, PE, is the Coastal Market Lead/Program Manager for the Coastal Restoration & Modeling Team. She has a well-rounded background in coastal management through working in both the public and private sector. She has designed, permitted, and supervised construction of multifaceted coastal projects in Florida, including projects on the West Coast. In 2017, she was awarded the Local Government Award from FSBPA for outstanding leadership for the preservation of Florida’s beaches, especially her involvement with numerous beach and inlet projects that make up Florida’s comprehensive beach management program.

Relevant Experience

Captiva Island Sea Level Rise Analysis and Grant Assistance; Lee County, FL

Project Manager assisting the CEPD with the update of their sea level rise vulnerability analysis necessary for state funding eligibility and additional immediate preparatory actions to support applications for resilience and coastal infrastructure funding. Updated the sea level rise vulnerability analysis for Captiva Island to include sea level rise scenarios for planning horizons 2040 and 2070 based on the National Oceanographic and Atmospheric Administration (NOAA) Intermediate Low and Intermediate High projections. Identified the vulnerabilities affecting CEPD’s jurisdictional area, private property, and the ability for CEPD to fulfill its responsibilities.

Captiva Island Beach Renourishment Project, Lee County, FL

Ms. Sharp assists the Captiva Erosion Prevention District with the overall management of CEPD’s coastal management program. Provided project management, planning, and construction oversight of 2021 Captiva Renourishment Project. EOR for borrow area portion of project and related geotechnical components. Assisting CEPD with required post-construction monitoring of project in addition to reimbursement from FEMA and FDEP. Most recently, performing post-storm assessments following Hurricane Ian and developing rehabilitation strategy with federal and local partners.

Collier County Coastal Storm Risk Management Study; Collier County, FL; Collier County

Senior Co-Project Manager responsible for continued support to Collier County for USACE feasibility study for Collier County. Assisted with coordination and negotiations with USACE staff from multiple districts in addition to providing project support. This support has included review of Tentatively Selected Plan, engineering and modeling, economics and benefit analysis, environmental considerations, and real estate. Services also included review of final model optimization and report prepared for the Agency Decision Milestone meeting.

Education

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

Professional License or Certification

- ▶ Professional Engineer, Florida, License No. 74708, Active

Skills & Experience

- ✓ Coastal Zone Management
- ✓ Coastal Resiliency
- ✓ Shoreline Stabilization
- ✓ Environmental Permitting
- ✓ Public Outreach

Years w/APTIM

- ✓ 9

15

YEARS EXPERIENCE

Collier County Coastal Management Program (Beaches and Inlets); Collier County, FL

Ms. Sharp assists Collier County with their comprehensive beach management program, including beach restoration, inlet management and dredging, and funding assistance. Ms. Sharp was the project engineer responsible for the design and permitting of Collier County's 2013-14 renourishment project. Responsibilities also included the preparation and submittal of Federal and State Joint Coastal Permit. For the 2013-14 project, Ms. Sharp coordinated and conducted the pre-bid and pre-construction meetings and provided construction oversight. She was also the project engineer associated with the Collier County Naples Beach Emergency Berm Restoration Project and Collier County Berm Restoration Project at Naples and Park Shore, both of which were truck haul. Ms. Sharp served as the program manager of the 2023 Collier County Emergency Berm project following the passage of Hurricane Ian. Ms. Sharp led project design, development of construction plans and specifications, and performed construction administration.

Pinellas County Coastal Management Program and Plan, Pinellas County, FL

Senior Coastal Engineer responsible for the review and development of the assessment of multiple coastal structures. Assisted with the historic research of the structures, including design and regulatory documentation, monitoring reports, and other historic documents to review and evaluate the design purpose, design life, general structure performance, and historic maintenance of the structures prior to conducting field inspections. Most recently served as Engineer of Record for the Sunset Beach, Pass-a-Grille Beach, Belleair Beach, and Upham Beach dune repair project following the passage of Hurricane Idalia. Provided dune design, development of specifications and construction plans, review of upland sand sources, and construction administration and oversight for the project in an expedited timeline to protect vulnerable upland infrastructure.

Sector 3 Beach and Dune Restoration; Indian River County, FL

Senior Project Manager and Engineer of Record responsible for the Sector 3 Beach and Dune Renourishment Project to restore the beach from damage caused by Hurricanes Matthew, Irma, and Dorian. Efforts have included final permit coordination, development of construction plans and specifications for both dredge and truck haul, and bidding assistance for the County. She has also assisted the County with their easement acquisition strategy in conjunction to assisting the County in their coordination with Federal Emergency Management Agency (FEMA). Ms. Sharp oversees the post-construction monitoring report for permit compliance. Most recently performed storm damage assessments and reporting for FEMA from Hurricanes Ian and Nicole and led the engineering, design, and agency coordination for the post-storm rehabilitation project planned for Winter 23/24.

Broward County Natural Resources Administrator; Broward County, FL*

Ms. Sharp was the Natural Resources Administrator at Broward County and has extensive experience with planning and implementing coastal projects. While at Broward County, she coordinated with state and federal resource agencies (FDEP, Florida Fish and Wildlife Conservation Commission, USACE, USFWS, NMFS, U.S. Environmental Protection Agency (USEPA)), assisted in preparation and review of engineering and environmental analyses (Environmental and Biological Assessments), and presented and participated in public briefings/meetings. Led negotiations with NMFS to develop sound terms and conditions which ultimately lead to issuance of a Biological Opinion with favorable terms and conditions for the projects. She also performed easement acquisitions (including Use Agreements with the State of Florida) required for the Certification of Lands, prepared State grant funding requests annually, and led the negotiation of multiple Project Partnership Agreements (PPA) for maintenance and emergency USACE projects.

**Projects completed with another firm*

SAMANTHA DANCHUK, PHD, PE

OUTREACH COORDINATOR AND FACILITATOR | ADAPTATION PLAN DEVELOPMENT | APTIM



Professional Summary

Dr. Samantha Danchuk is the Program Manager for APTIM’s Florida Resiliency Program. She has **experience in vulnerability and risk assessments, coastal hazard modeling, strategic flood and energy resilience policy, and futureproofed infrastructure engineering**, supporting environmental sustainability and

redeveloping vulnerable regions. Dr. Danchuk also has experience in stakeholder outreach to gain consensus on proposed policies, identify goals and objectives, collect data, lead public forums and focus groups, and interview individuals. She has been at the forefront of resiliency efforts in Florida. She has a **formidable reputation as a trusted source** amongst regional and national climate adaptation networks and is credited as the technical lead for nationally recognized policy and project case studies.

Relevant Experience

Captiva Island Flood Risk Vulnerability Assessment

Project manager and resilience engineer responsible for coastal hazard vulnerability assessment, risk mapping using GIS, resilient capital improvement plan and community adaptation strategy. Supported presentations to elected officials and special committee on sea level rise. Developed materials for public education on risk and coastal processes.

Longboat Key Sea Level Rise Vulnerability Assessment and Adaptation Plan

Project manager and resilience engineer responsible for coastal hazard vulnerability assessment, risk mapping, resilient capital improvement plan and community adaptation strategy. Presented to elected officials and stakeholders and integrated public feedback in deliverables.

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

Project Manager for 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.

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, 73868
- ▶ LEED-Green Associate
- ▶ WEDG Associate
- ▶ Critical Infrastructure Protection, Texas A&M Engineering
- ▶ Facilitation, Natural Resources Leadership Institute

Skills & Experience

- ✓ Project Management
- ✓ Vulnerability/Risk Assessment
- ✓ Community Engagement

Years w/APTIM

- ✓ 2

17

YEARS EXPERIENCE

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

Project Manager for 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.

Broward County Communitywide County Action Plans

Project manager, co-developer and Climate Change Task Force staff liaison. Plans were developed based on Scope 1-3 Greenhouse Gas Emissions Inventories, risk assessments for heat and flooding, Community Energy Strategic Plans, Renewable Energy Action Plans and Heat Mitigation Strategy. Facilitated dozens of workshops for public outreach, delivered training program for employees, staffed task forces, delivered polls and interactive and youth focused engagement throughout project. Supported facilitation and delivery of 12 regional implementation workshops for the South Florida Regional Climate Change Compact. Developed YouTube series and high school curriculum for eLearning of resilience topics.

Sandsprit Park and St. Lucie Inlet South Jetty Martin County, FL

Dr. Danchuk as the coastal resilience program manager completed a sea level rise analysis for the park infrastructure, mapping areas of inundation, providing criteria for design elevations and suggesting flood adaptation strategies for short and long term.

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

Project Manager for 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.

Rebuild by Design US Atlas of Disasters

Responsible for data analytics of climate impacts and federal disaster funding by county and state paired with maps of rated return on investment for resilience investments, energy reliability, social vulnerability and estimation of future damage costs. Supported development of website content, presentations, and visuals to deliver unique analysis of national datasets. Engaged with media outlets, federal agencies, and project developers.

Related Studies

Program Manager/ Coordinator

Adaptation

- ▶ Decision Analysis for A Sustainable Environment, Economy & Society (DASEES), EPA
- ▶ Urban Green Infrastructure Lab, Earth Economics, regulatory tools and incentives and financing

Economics

- ▶ Economic Impacts of Storm Surge and Tidal Flooding, COAST model in Hollywood, International Metropole Project
- ▶ Business Case for Resilience for Southeast Florida- return on investment of regional climate-resilient infrastructure upgrades
- ▶ Dania Beach REMI Modeling- 1st of its kind application for sea level rise adaptation scenarios, basis for above.

Flood Risk

- ▶ Flood Risk Management Study for Tidally Influenced Coastal Areas, USACE- storm surge and sea level rise modeling to inform infrastructure elevations
- ▶ Critical Infrastructure and Future Flood Resilience in South Florida, NOAA, Deltares and Broward, innovative visualization of direct and cascading flood impacts
- ▶ Cascading Effects of Future Flooding Transportation Disruption, NOAA, Deltares, FIU, ICF

BRIDGET HUSTON, MURP

OUTREACH COORDINATOR AND FACILITATOR | DATA ANALYST | ADAPTATION PLAN DEVELOPMENT | APTIM



Professional Summary

Ms. Bridget Huston is a resilience planner and project assistant with experience in vulnerability assessments, applying visualization and climate scenario tools for project evaluation, plan development and implementation, grant proposal and report writing, qualitative and quantitative data collection and analysis, community outreach and engagement, surveying, and educational programming.

Relevant Experience

Captiva Island Flood Risk Vulnerability Assessment

Collected, analyzed, and interpreted data, conceptualized adaptation strategies, and generated assessment reports. Created funding opportunities matrix for adaptation strategies and community education resources.

Longboat Key Sea Level Rise Vulnerability Assessment and Adaptation Plan

Quality Assurance/Quality Control (QA/QC), data synthetization, and technical reporting. Assisted with interpretation of data and conceptualization of innovative adaptation strategies and infrastructure investments.

South Florida Military Installation Resilience Review, South Florida

Collected data for four local military installations across three counties via continuous outreach and research. Analyzed, interpreted, and summarized results from exposure, sensitivity, adaptive capacity, and risk analyses and wrote various technical memos.

Miami-Dade Countywide Resilient Hub Network Strategy Project

Creation of Energy Reliability Vulnerability Assessment and Evaluation Data collection related to energy sector and infrastructure, energy reliability, energy use, demographics, etc., and conducted vulnerability assessment via matrix development and spatial analysis.

Enterprise Portfolio Project Tool

Assisted with data collection and hazard risk scoring methodology, encompassing eleven hazard types including hurricanes, earthquake, sea level rise, and fires hazards. Examined impact of social vulnerability across hazards and geographic scales.

Rebuild by Design Atlas of Disaster

Reviewed Atlas of Disaster reports for each state and provided feedback and edits before final production.

Education

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

Skills & Experience

- ✓ Vulnerability Assessments
- ✓ Technical Writing
- ✓ Spatial Analyses via GIS
- ✓ Data Collection and Analysis
- ✓ Community Outreach

Years w/APTIM

- ✓ 1

8

YEARS EXPERIENCE

CIGDEM OZKAN, PHD, EIT

DATA ANALYSIS & PLAN DEVELOPMENT | APTIM

Professional Summary



Dr. Cigdem Ozkan has eight years of experience investigating innovative solutions to resiliency problems and energy demands through an environmentalist approach. She integrates nature-based solutions with engineered infrastructures to resolve complex environmental challenges.

Relevant Experience

Sea Level Vulnerability Assessment, Captiva Island, FL

Performed QA/QC and assisted with final submission phases. APTIM updated the sea level rise vulnerability analysis necessary for state funding eligibility and additional immediate preparatory actions to support applications for resilience and coastal infrastructure funding.

Sea Level Rise and Recurring Flooding Resilience Plan, Longboat Key, FL

Contributed to final submittal phase of the Resilience Plan report via providing reviews and assisting with updates. APTIM supported the final phase of the development of an adaptation plan to address sea level rise and recurring flooding for the Town of Longboat Key.

South Florida Military Installation Resilience Review

Contributed to final submittal phase via mission critical data set refinement, data analysis & visualization. Performed QA/QC. APTIM identified the risks, hazards, and vulnerabilities of concern as it relates to the ability of the military to carry out its missions on the base that could be mitigated through investments and solutions.

Town of Waverly Stormwater Management Structure Design, Waverly, VA

APTIM was scoped to provide a remedy to repeated, nuisance flooding in the main intersection in the town of Waverly. A wet pond was proposed as the most feasible option to mitigate flooding. Dr. Ozkan was responsible from developing a stormwater model to estimate the drainage volumes that would be diverted to the wet pond area. She utilized ICPR4, CatchmentSIM, and ArcGIS Pro to develop the drainage area and analyze the impacts of the designed wet pond. Designed proposed stormwater collection network and assisted in pond design.

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

Evaluated the vulnerability of the energy infrastructure system to potential hazards and assessed the socioeconomic vulnerabilities related to energy. Conducted data collection and exposure analysis, led Geographical Information System (GIS) efforts, and contributed to building a scoring methodology to determine top priority areas to inform site-selection.

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

- ▶ Engineering Intern, 2021, 73850, Active, Texas, 07/2029

Skills & Experience

- ✓ Energy Resilience
- ✓ Data Collection & Analysis
- ✓ Vulnerability and Risk Assessment
- ✓ Technical Writing

Years w/APTIM

- ✓ < 1

8

YEARS EXPERIENCE

DOUGLAS MANN, PE,

ADAPTATION PLAN AND ENGINEERING REPORT DEVELOPER | APTIM



Professional Summary

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)) as well as marine-related upland structures. He has been involved in the design and construction of boat ramps, marina renovations, and other boating related projects. Mr. Mann is experienced in Joint Coastal permitting, Environmental Resource permitting, and Florida Department of Environmental Protection Coastal Construction Control Line permitting. Mr. Mann was awarded the Florida Shore & Beach Preservation Association Per Bruun Distinguished Service Award in 2017.

Relevant Experience

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

Engineer of record for a structural stabilization (t-head groins, terminal structures, revetment enhancement) and beach nourishment project of the park surrounding the road right of way for the 0.5-mile-long Island B. The linear park provides passive recreational opportunities to resident and guests and has suffered long term erosion of the shoreline and beach gullyng from wave action and untreated stormwater runoff. Engineer of record for a structural stabilization (terminal structures, revetment enhancement, mangrove planter) and beach nourishment project of the park surrounding the road right of way for the 0.5-mile-long Island A. Project manager for park enhancements (bathrooms, roads, parking areas, stormwater improvements, on both islands). All shoreline stabilization was designed and constructed in the immediate vicinity of seagrass resources.

Broward County Shore Protection Project, Broward County, FL

Project manager for the development of the General Reevaluation Report for the second renourishment of the 10-mile-long authorized Segment II shoreline. Consulting engineer on Segment III nourishment. Performed economic analyses, engineering of fill quantities, borrow area design, cost estimating, and permitting of the project. (1999-2004). Project manager for environmental, geotechnical, and surveying services for the implementation of the above project with upland sand source. (2012-2016). Project manager for the long term

Education

- ▶ MS, Coastal and Oceanographic Engineering, University of Florida, 1987
- ▶ BCE, Civil Engineering, University of Delaware, 1985

Professional License or Certification

- ▶ Professional Engineer, Florida, License No. 44046, Active
- ▶ Board Certified in Coastal Engineering by Academy of Coastal Ocean, Port, and Navigation Engineers, ASCE, 2010

Skills & Experience

- ✓ Completed 50 coastal and marine infrastructure projects
- ✓ Stakeholder engagement and advocacy

Years w/APTIM

- ✓ 36

36

YEARS EXPERIENCE

physical and environmental monitoring services (2016- current). Staff engineer for services associated with the construction of 4.5-acre precast concrete unit reef (2014-current).

Martin County Coastal Program, Martin County, FL

Since 2020, APTIM has provided coastal engineering, environmental consulting, and surveying services to Martin County, this has included St. Lucie Inlet, Inlet Management, South Jetty, Navigation, 96th Street Construction Access Bulkhead, Sandsprit Park Boat Ramp Improvements and Stuart Causeway Boat Ramp Improvements. Mr. Mann has been consulting with the project managers to apply sound engineering and regulatory approaches and construction lessons learned to optimize project designs. Served as engineer of record for the 30% design of the Sandsprit Park boat ramp replacement project.

Initial Assessment of Vulnerability due to Sea Level Rise and Recurring Storm Events, Town of Longboat Key, FL

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.

South Lake Worth Inlet Sediment Budget and Seawall Replacement Projects Palm Beach County, FL

Project Manager for the completion of a periodic update to the sediment budget for South Lake Worth Inlet including reviewing beach and inlet survey data, volumetric analyses to quantify the measured volumetric changes north, south and within the inlet's area of influence and participation at TAC meetings. Engineer of record for the design and permitting of new seawalls along 1100 linear feet of seawall on the north and south interior sides of the inlet. Design addresses ADA issues within the park and access to the seawall cap/fishing platform. Design addresses existing high levels of steel sheet pile corrosion through cathodic protection design.

Collier County Marine Engineering Services, Collier County, FL

Engineer of record for multiple boat ramp, dock and replacement projects. At Caxambas Pass Park, 600 feet of bulkhead, dock, and a single boat ramp will be replaced. At Collier Boulevard Boat Ramp Park, designed 250 feet of bulkhead improvements at busy County boat ramp and added a 120-foot-long ADA compatible floating dock, immediately adjacent to mangrove habitat. At Cocohatchee River Park, a new 30-foot-long floating dock will be added to better serve transient jet ski users and kayak users.

City of Deerfield Beach, Beach Management Plan, Deerfield Beach, FL

Engineer of record for the City's Beach Management Plan, which outlines the benefits of maintaining the recreational beach, developed an economic basis for supporting beach preservation within the City limits, identified long term erosional trends and potential storm impacts, and identifies funding strategies to pay for the upkeep of the beach and dune system.

LEIGH GEVELINGER, PLA, LEED AP

LANDSCAPE ARCHITECT | COUNTY POLICY EXPERT | RENDERING DESIGNER | COASTAL VISTA DESIGN



Professional Summary

Leigh Gevelinger is the founder and lead landscape architect of Coastal Vista Design. Gevelinger has over 17 years of experience with design-build landscape architecture services and construction administration. Together with her team,

Gevelinger brings a deep knowledge of south Florida plants and ecosystem functions, with a thorough understanding of the challenges and opportunities of landscape installation and management in south Florida. Gevelinger has worked on Sanibel & Captiva Islands since 2010 and has a strong knowledge of local code, permitting, and construction processes.

Relevant Experience

Numerous Residential/Condominium Shoreline Stabilization Projects – Pre & Post Hurricane Ian – Sanibel, FL

Provided permit plans for City of Sanibel and FDEP seaward of the CCCL on numerous properties. Services: Documentation of existing conditions, designed, permitted, and provided construction administration services for dune and shoreline mitigation planting installation for shoreline stabilization on behalf of property owners. Start Date: Ongoing

Collier County GGG Aubrey Rogers High School

Zyscovich Architects – Arnaldo Delgado, AIA, 305-372-5222, adelgado@zyscovich.com 60 acres / ecological planting for a technology and innovation-focused high school / services: site design, planting design, permitting, construction administration / Start date: 2019 End date: 2023

BIG Arts Sanibel Campus

Lee Ellen Harder, Executive Director, BIG Arts, 239-395-0900, 900 Dunlop Road, Sanibel, FL 2.4 acres / Sanibel native-only planting design for community theatre and arts center / services: planting design, permitting, construction administration / Start date: 2018 End date: 2020.

Paradise Coast Sports Complex

Parker/ Mudgett/ Smith / Architects – W. Jeffery Mudgett, AIA, 239-332-1171, wjm@pmsarch.com 180 acres / botanical garden-style planting throughout a sports facility, focused on native and regionally-adapted planting / services: planting design, permitting, construction / Start date: 2018 End date: Phases 1 + 2 complete 2023, Phases 3-9 ongoing.

Education

- ▶ BLA, Landscape Architecture, University of Wisconsin Madison, 2007

Professional License or Certification

- ▶ Registered Landscape Architect, FL, #LA6667171

Skills & Experience

- ✓ Knowledge of south Florida plants and ecosystems
- ✓ Local Code, Permitting and Construction processes

Years w/Coastal Vista

- ✓ 7

17

YEARS EXPERIENCE

Woodring Road – Living Shoreline Project – Sanibel

Hans Wilson & Associates / Kelley Brothers, Inc. / City of Sanibel Natural Resources Department Services: Provided on-site supervision of mangrove trimming work and mitigation documentation during site construction and installation activities. Maintain current certification of mangrove competency through City of Sanibel & Licensed Landscape Architect. / Start date: April 2022 End date: June 2022

Residential Project – Spartina Stabilization - Captiva Bayside

Windward Construction / Property Owner / Lee County / Residential bayside new construction project – Mangrove mitigation and stabilization of bayside property with spartina per Army Corp requirements. / Services: planting design, permitting, construction administration / Start date: 2019 - End date: May 2023

Residential/Condominium Project – Mangrove Installation Project - Captiva Bayside

Captiva Bay Villas – Mangrove shoreline stabilization – Lee County Services: designed, permitted, and oversaw mangrove mitigation planting installation for shoreline stabilization through Lee County on behalf of property owners. Start date: 2018 End date: July 2018 - December 2018

Bailey Matthews National Shell Museum

Shell Museum & Educational Foundation, 239-395-2233, 3075 Sanibel-Captiva Road, Sanibel, FL 2.2 acres / Sanibel native-only planting design for public attraction and historic Sanibel venue / services: planting design, permitting, construction administration / Start date: 2017 End date: 2020.

Collier Community Foundation Tree Planting

Naples Botanical Garden (NBG) – Isabel Soto – 239-315-7225, isoto@naplesgarden.org 8 sites / review of existing underserved parks throughout Collier County, site visits to evaluate conditions and identify potential tree locations with Collier Parks & Recreation and NBG staff, site specific tree planting recommendations, mapping and landscape graphics for recommended tree planting / Start date: 2020 End date: 2021

ANDREW GUTTERMAN, PLA, ASLA

LANDSCAPE ARCHITECT | SASAKI



Professional Summary

Andrew brings over 20 years of professional experience as a landscape architect, and his understanding of natural systems informs all aspects of his planning and design process. His background in ecology has helped foster a deep appreciation for the beauty and complexity of the natural world and a strong belief that these qualities can be brought to the built environment in meaningful ways. Andrew's thoughtful approach is characterized by attentiveness to client needs, site conditions, and historical context. His experience spans the full spectrum of project types, with a particular emphasis on creating high quality landscapes in the public realm.

Relevant Experience

- ▶ Imagine Clearwater Master Plan; Clearwater, Florida
- ▶ Bonnet Springs Park; Lakeland, Florida
- ▶ Comprehensive Campus Master; Decatur, Georgia
- ▶ Case Western Reserve University The Nord Family Greenway; Cleveland, Ohio
- ▶ Case Western Reserve University Main Quad Restoration; Cleveland, Ohio
- ▶ Connecticut College Master Plan; New London, Connecticut
- ▶ Copley Square Park Boston, Massachusetts
- ▶ Dartmouth College Collis Center Landscape; Hanover, New Hampshire
- ▶ Dartmouth College Undergraduate Housing Study; Hanover, New Hampshire
- ▶ Dixie State University Campus Master Plan; St. George, Utah
- ▶ Doan Brook Landscape Improvements; Cleveland, Ohio
- ▶ Greenwich Academy Master Plan, Greenwich, Connecticut
- ▶ Holderness School Athletics Center; Plymouth, New Hampshire
- ▶ Monterrey Tec Expedition Blueship Landscape; Monterrey, Mexico
- ▶ Nichols College Master Plan; Dudley, Massachusetts
- ▶ Quinnipiac University South Quad Landscape; Hamden, Connecticut
- ▶ St. Thomas Aquinas Faith-Based Dormitory; West Lafayette, Indiana
- ▶ Tecnologico de Monterrey Queretaro Library; Monterrey, Mexico
- ▶ The Frederick Gunn School Lizzie and Jonathan Tisch Center for Innovation and Active Citizenship Landscape; Washington, Connecticut
- ▶ The Lawrenceville School Campus Master Plan; Lawrenceville, New Jersey
- ▶ The Lawrenceville School Dining and Athletics Center Landscape; Lawrenceville, New Jersey

Education

- ▶ MLA, Landscape Architecture, Harvard University Graduate School of Design
- ▶ BS, Ecology and Evolutionary Biology, University of Connecticut

Professional License or Certification

- ▶ Licensed Landscape Architect: MA, CT, KY, ME, MI, NH, NJ, and RI

Skills & Experience

- ✓ Understanding of ecological systems

Years w/Sasaki

- ✓ 7

20

YEARS EXPERIENCE

BRYAN D. FLYNN, PE

NATURE-BASED AND HYBRID SOLUTIONS, LIVING SHORELINES EXPERT | ESA



Professional Summary

Bryan Flynn has 20 years' professional experience in coastal engineering, hydrographic surveying, permitting, project management, and construction administration. His areas of expertise include permitting, shoreline protection and coastal restoration, coastal monitoring, beach nourishment, inlet processes, dredging and navigation. Bryan has served as the project manager and/or lead engineer on challenging projects involving multiple stakeholders for clients including water management districts, municipalities, ports, inlet districts, private corporations, and federal and state governments in Florida, the Caribbean, Louisiana, Texas, and Delaware.

Relevant Experience

Developing Resilient Shorelines; Broward County, FL

Project Manager. Broward County is addressing sea-level rise by setting seawall design heights and providing residents with design renderings for various seawall enhancement and living shoreline options. ESA was hired to formulate the engineered designs and provide professional renderings to create an informational pamphlet, which also included permitting guidance for Broward County residents. Bryan worked closely with ESA's team of coastal scientists to formulate the design options and then presented this information to the county's Shoreline Resilience Working Group.

Rising Waters Task Force Report; Delray Beach, FL

This project was a planning initiative for the City of Delray Beach. The report included input from several local stakeholders and technical experts. The goal of the report was to raise awareness of the impacts of climate change and sea-level rise on the coastal community. The efforts ultimately will lead to a coastal resiliency/ vulnerability analysis performed for the city.

Audubon Islands Living Shoreline Project; Pinellas County, FL. (Subconsultant to Landon Moore and Associates)

Coastal Engineer. This project, sponsored by Audubon Florida, entailed performing a coastal conditions analysis and wave modeling to guide the design of nature-based shoreline protection options to protect three rookery islands within Pinellas County. Audubon Florida manages three spoil islands—Dunedin-Sand Key, Indian Rocks Beach, and Dog Leg Key—in Pinellas County as critical bird rookeries/nesting habitat. The

Education

- ▶ ME, Civil Engineering, Water Resources, University of South Florida, 2008
- ▶ BS, Ocean Engineering, Florida Institute of Technology, 2000

Professional License or Certification

- ▶ Professional Engineer #70856, Florida; #38926, Alabama
- ▶ Florida Department of Environmental Protection stormwater/ National Pollutant Discharge Elimination System certification #29445

Skills & Experience

- ✓ Shoreline Protection and Coastal Restoration
- ✓ Beach Nourishment
- ✓ Stakeholder Meetings

Years w/AIM

- ✓ 8

20

YEARS EXPERIENCE

islands are subject to wave impacts from both local wind-waves and vessel traffic. ESA compiled wind, wave, tide, storm surge, sea-level rise and bathymetric information on each site. ESA visited each of the islands, collecting submerged aquatic vegetation locations and sediment samples. ESA also collected wind-wave and boat wake measurements by deploying cameras at the three project locations and recording the water surface elevations. ESA applied the 2-D Coastal Modeling System-Wave model to simulate nearshore coastal processes at all three project locations. Extreme wind speeds corresponding to the 10-year and 20-year events were modeled in combination with a range of water levels, which included contributions from tides (e.g., mean higher high water), storm surge, and mid-century sea-level rise. Wave run-up and overtopping, reflection, and transmission coefficients were calculated for each island, which helped in sizing the precast concrete units. Once the shoreline treatment elements were chosen, the maximum scour at each location was also determined using the grain-size distribution from the sediment samples. ESA provided design suggestions and modifications as well as assisting with presentations of the findings to regulatory agencies.

Haya Park Living Shoreline Project; City of Tampa, FL

Ignacio Haya Park was losing shoreline, which endangered several large oak trees that are a signature feature of the Hillsborough River landscape. ESA coordinated survey and geotechnical data collection efforts and performed a tree survey and environmental assessment of the site. Bryan designed and permitted the rehabilitation of previous shoreline stabilization efforts, which included extending stormwater outfalls through the living shoreline features, directing runoff deeper into the river where shoreline scour would not be an issue. Repairs were made to a riprap revetment and wooden stem wall near the Hillsborough Avenue Bridge, and the existing living shoreline was rehabilitated with new larger riprap offshore, fill placement, and additional plantings along shore. The stormwater ditch at the southern portion of the project area was re-contoured to provide additional surface area for wetland plantings, and a sump was created to control sediment.

Sarasota Bay Estuary Program; Sarasota Bay, FL

Coastal Engineer. Bryan provided design and permitting support, cost estimation and feasibility reports for the following Sarasota Bay Estuary Program restoration projects:

- GT Bray Park – stream restoration
- FISH Preserve Phases 3 & 4 – hydrologic and habitat restoration.
- Blackburn Point Living Shoreline Project
- Neville Preserve sediment assessment

Safety Harbor Living Shoreline Stabilization Project; Safety Harbor, FL

The primary objective of this project is to enhance coastal resilience by removing an existing seawall and replacing it with a living shoreline feature. Additionally, the existing spring outfall from the Safety Harbor Resort and Spa will be improved by removing a portion of the pipe to recreate a natural intersection between the spring and the estuarine waters of Old Tampa Bay. The city hired ESA to design and permit the restoration activities and secure grant funding. ESA secured permits and provided bidding support to the city to hire a contractor to remove the existing seawall, headwall, and portion of the outflow pipe, as well as any non-native invasive species or other debris. The contractor provided grading, installation of riprap, geotextile, piping, and clean sand. The city coordinated community volunteers to install oyster habitat and native wetland/transitional plants along the top of bank. The spring pool was planted with estuarine-dependent marsh grass and transitional plants surrounding the area.

STEVE NEFF, PE

LOCAL STORMWATER INFRASTRUCTURE AND ROAD SPECIALIST | AIM ENGINEERING & SURVEYING



Professional Summary

Mr. Neff's lengthy career has been dedicated to the Engineering, Construction, and Public Works sectors; having spent 30+ years with the City of Cape Coral in various roles, including Public Works Director. His role with the City required extensive interaction with the City Manager and City Council, as well as various Department Heads, governmental agencies, and consulting firms. His experience gives him a profound understanding of various areas of public and corporate interests, including contract management, team building, negotiations, budget planning, and public presentations; all of which he has channeled into his role as Contract Manager/Project Director for AIM on numerous projects and multiple task-based/continuing services contracts.

Relevant Experience

Jordan Marsh Water Quality Treatment Park Design & Permitting; City of Sanibel

Project Director for the design, engineering, and permitting of this water quality treatment park located on a portion of public and private conservation land on Sanibel Island. The park was designed as a multi-purpose surface water treatment facility and will maximize opportunities for water quality improvement and storage, as well as provide expanded recreational opportunities and an improved habitat for residents and visitors.

Southern Lee County Flood Mitigation Plan; Lee County

Project Manager. AIM was responsible for preparing a flood mitigation plan in response to the significant flooding that took place in Lee County as part of Invest 92L and Hurricane Irma in 2017. Several concept plans were developed to reduce/mitigate the County's future flood potential south of the Caloosahatchee River. A 3D regional watershed model was developed for this effort, and up to 40 concept projects will be modeled to determine the benefit of the proposed concepts. AIM also provided Engineer Opinions of Probable Costs as well as a prioritization matrix for the preliminary concepts.

Post Irma Flooding Analysis; Lee County

Project Manager. AIM provided a high-level evaluation of drainage for three large watersheds in east Lee County immediately south of the Caloosahatchee River. The Orange River, Hickey's Creek, and Bedman Creek watersheds experienced flooding because of intense rainfall from Irma. AIM collected data relative to high water elevations, impediments to flow, and a high-level review of systems. A summary was provided and included potential short-term relief activities as well as possible needs for further studies of more significant long-term beneficial projects.

Education

- ▶ BS, Civil Engineering, Purdue University, Indiana, 1978

Professional License or Certification

- ▶ Professional Engineer, Florida #33205, 1983

Skills & Experience

- ✓ Contract Management
- ✓ Negotiation
- ✓ Budget Planning
- ✓ Public Presentations

Years w/AIM

- ✓ 6

46

YEARS EXPERIENCE

Wild Turkey Strand Surface Water Diversion; Lee County

Project Manager. This project involved implementation of restoration activities to reclaim agricultural lands and enhance wetlands. AIM was tasked with evaluation of existing conditions; topographic survey; environmental assessments; and surface water analysis to prepare plans, documents, and permit applications for proposed enhancements; as well as assisting with the bidding and construction phase. Enhancements include wetland flow ways, ponds to provide dry season refugia, and uplands; reducing flow that was being forced west to residential areas and redirecting through the County-created and restored ecosystems and is configured to maintain suspected inflows.

Gator Slough/Yellow Fever Creek Interconnect; Lee County Natural Resources

Project Manager on this contract for hydrologic and water quality modeling and preparing plans and specifications for the restoration of the upper reaches of the Yellow Fever Creek Watershed. The project included a stormwater pumping system, wetland hydro-period restoration, control structures, water quality enhancements, and rehydration of a creek system, as well as aerial photography and photogrammetry, survey, engineering, planning and design, construction services, permitting, and coordination with government agencies.

West Marsh Preserve Design & Permitting; LA-MSID

Project Manager. This project included evaluation, design, permitting, and construction phase services for the creation of a 206-acre surface water storage and treatment wetland facility serving the Orange River Basin in CEPD. The project also involved the preservation and enhancement of existing wetland and natural areas and is being constructed as part of a partnering agreement between LA-MSID and FDOT. In exchange for their participation, FDOT received compensating water quality storage and fill embankment material for SR 82 improvements.

RICHARD GROSSO, P.A.

ENVIRONMENTAL POLICY ADVOCATE | RICHARD GROSSO LAW



Professional Summary

Richard Grosso, President of Richard Grosso, P.A., in Plantation, FL, is a widely recognized lawyer and advocate, with 37 years of experience as a public interest litigator, appellate lawyer, advocate and counselor in the areas of federal and Florida

environmental, land use, constitutional, property rights and related governmental and administrative law. He offers services throughout Florida and in Washington DC.

Mr. Grosso is a former Law Professor at the Shepard Broad College of Law at Nova Southeastern University in Ft. Lauderdale, Florida, where he taught in the areas of environmental, energy, land use, administrative, appellate practice and federal and state constitutional law. He is the former Executive Director and General Counsel of the Everglades Law Center, Inc., (ELC) a public interest law firm which represents citizens and environmental interests in environmental and land use matters concerning the Florida Everglades, Florida Keys and the south Florida ecosystem in general. He is also a former Legal Director for 1000 Friends of Florida, and attorney for the Florida departments of Community Affairs and Environmental Regulation. Over his 37 – years as a practicing lawyer, he has represented numerous public interest clients and the state of Florida in federal and state administrative and judicial proceedings. He frequently appears as an advocate before local governments, state and federal agencies, and other bodies concerning land use and environmental issues, and as a practicing attorney in state, federal, and administrative tribunals.

Mr. Grosso has worked extensively on the local, state and federal policy, legal and agency decision-making aspects of the Comprehensive Everglades Restoration Plan, cutting edge "carrying capacity" land use planning in the Florida Keys, climate and sea level rise sustainability issues in south Florida and a wide variety of environmental and land use issues throughout Florida. Richard's work and analysis has been quoted or referenced in the New York Times, the Washington Post, Forbes, Politico, National and Florida Public Radio, in almost every major news media in Florida, and other newspapers and blogs across the country and around the world.

Education

- ▶ JD, Florida State College of Law, 1986
- ▶ BS, Political Science, Florida State University, 1983, Pi Sigma Alpha Honor Society Vice President, Government Studies Association
- ▶ AA, Miami-Dade Community College, 1981 - Dean's List

Professional Licenses or Certifications

- ▶ Bar Admission, Supreme Court of the United States
- ▶ Bar Admission, United States' District Court for the Northern District of Florida
- ▶ Bar Admission, United States' District Court for the Middle District of Florida
- ▶ Bar Admission, United States' District Court for the Southern District of Florida
- ▶ Bar Admission, State of Florida, 1986

Skills & Experience

- ✓ Environmental Law
- ✓ Environmental Permitting
- ✓ Land Use Matters

37

YEARS EXPERIENCE

Relevant Experience

Richard Grosso, P.A. President Plantation, FL

Jan. 2018- present; Consultation and representation of public interest clients in land use, environmental and related governmental matters before local, state and federal agencies and state and federal courts and administrative tribunals.

Shepard Broad College of Law, Nova Southeastern University, Ft. Lauderdale, FL

Professor of Law – 2007 to 2021; Assistant Professor of Law 1998 - 2007 Directed the law school's land use and environmental law practice clinic, where he represented clients in judicial and administrative litigation and government advocacy and supervised and mentored law student clinical practice. Taught constitutional law, land use, environmental, energy and administrative law and appellate practice.

Everglades Law Center, Inc., Ft. Lauderdale, FL

Executive Director\General Counsel - March 1996 to December 2010; Responsible for administrative and legal activities of non-profit, public interest law firm which represents clients in litigation, appeals and administrative advocacy on major legal cases and public policy decisions impacting the south Florida ecosystem. Extensive state and federal trial and appellate practice on cases of significant precedential value. Lectures and writes frequently on legal and policy issues concerning environmental and land use law and policy. Clients included federal, state and local environmental organizations.

1000 Friends of Florida, Tallahassee & Ft. Lauderdale, FL

Legal Director - August 1990 to March 1996; Responsible for all legal activities of growth management advocacy NGO.

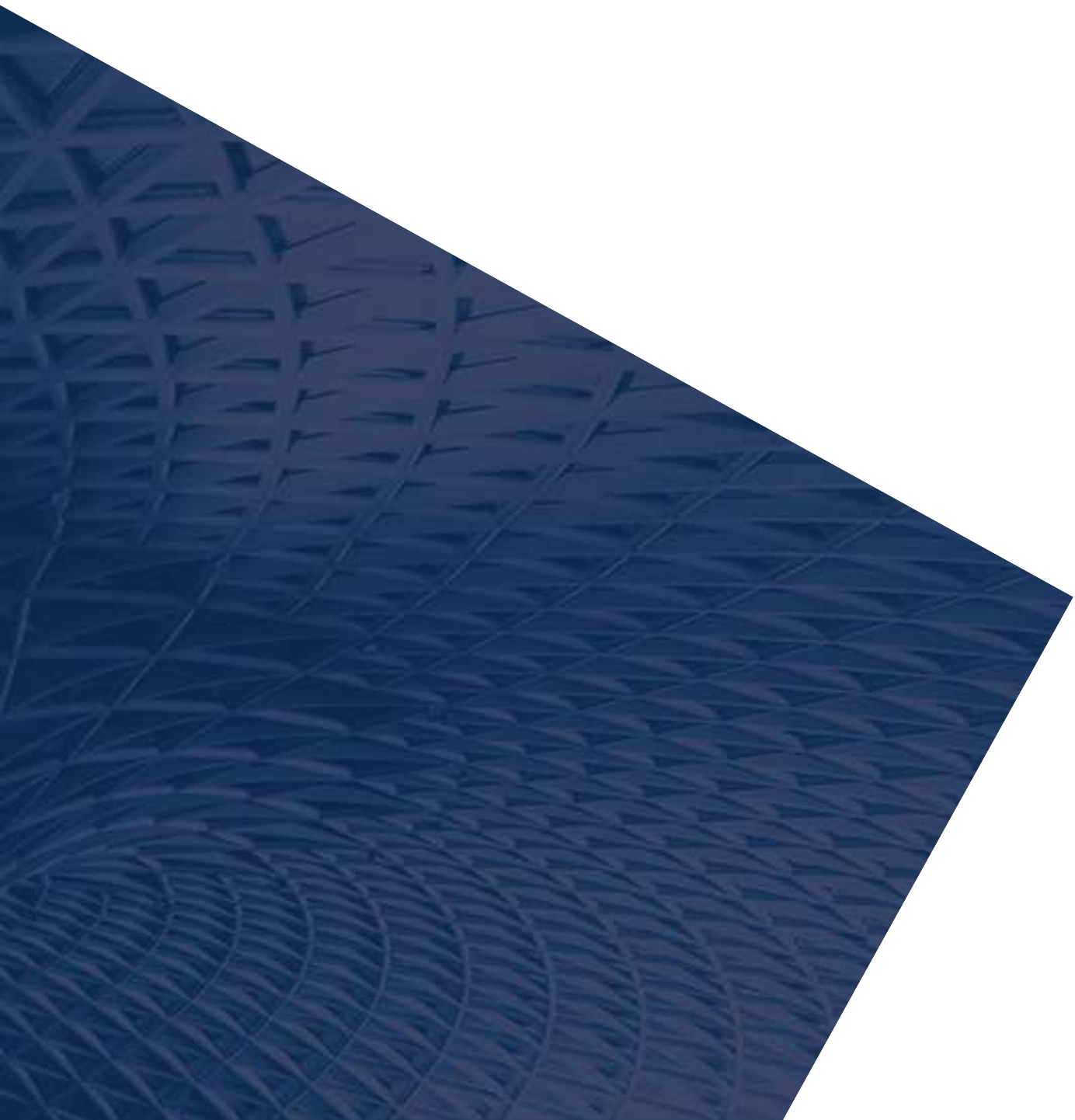
Florida Department of Community Affairs, Tallahassee, FL

Assistant General Counsel - June 1989 to August 1990; Represented state agency in administrative challenges to local government comprehensive plans and policy plans of regional planning councils.

Florida Department of Environmental Regulation, Tallahassee, FL

Assistant General Counsel - December 1986 to June 1989; Duties included trial and appellate work as well as advisory duties relating to environmental permitting. Heavy emphasis in administrative law and inverse condemnation defense. Extensive trial and appellate practice.

TAB 3 PROJECT APPROACH



Project Approach

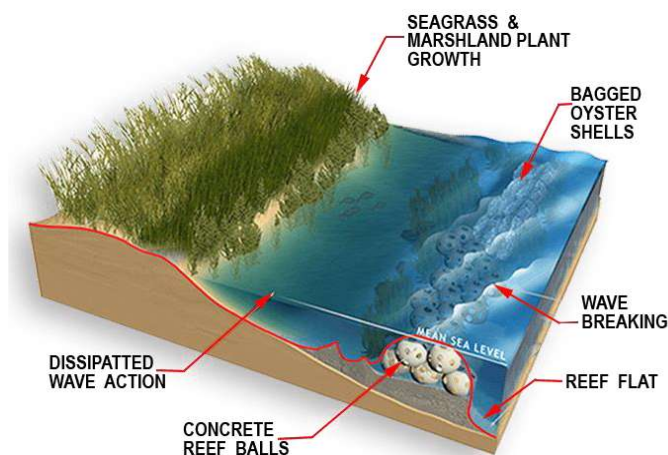
APTIM acknowledges and has a comprehensive understanding of the Project, its scope of work, and goals. APTIM affirms that we can meet the stated project schedule of November 30, 2024, for the services included in this document. We are fully prepared and dedicated to delivering our final product to CEPD.

Project Management | APTIM uses a proven project delivery and control system that is customized and scaled to clients' individual needs and capacity. The system supports project administration and daily review and analysis of project performance. APTIM will apply **quality assurance/control procedures** to check for data completeness, accuracy, consistency, transparency, and relevance throughout the project.

Ground-Truthing Data | We will coordinate efforts with multiple stakeholders and experts to ground truth data, assumptions, and the feasibility and applicability of proposed actions. We found this step to be essential during the vulnerability analysis and have budgeted time for the local architect and flood mitigation experts to vet data.

Grant Compliance | The APTIM team has successfully completed projects in compliance with the Resilient Florida Grant Program within six coastal counties- Manatee, Sarasota, Lee, Broward, Miami-Dade, and Monroe Counties. The key is to communicate findings and interests with the state early in the project.

Commitment to Nature-based and Hybrid Solutions | We are committed to implementing the principles outlined in the "Goal and Guiding Principle Document for Captiva & Sanibel Coastal Adaptation Planning." We will base our strategies on the best available scientific information and technical expertise. Our goal is to develop an adaptation plan that balances the preservation of critical ecosystems, infrastructure, and economic interests while enhancing the resilience of Captiva Island. We will utilize emerging NBS technologies where applicable, feasible, and



Nature-Based Solutions (NBS)
Source: <https://ewn.erd.c.dren.mil/>

permissible.

TASK 1: Kick off and Project Steering Committee

The APTIM team will assist CEPD with coordinating logistics and communications necessary for hosting a kick-off meeting within the first month of the project. APTIM will also host three steering committee progress meetings at the following key project milestones:

- 1. March 2024 | Commencement of Task 4 (Adaptation Plan):** Steering Committee Members will be briefed on the findings of the background data compilation and public- private implementation analysis.
- 2. June 2024 | Completion of Task 4 (Adaptation Plan):** Steering Committee will be able to review the draft plan and provide insights, edits, and recommendations.
- 3. September 2024 | During the course of Task 6 (Engineering Report and Conceptual Adaptation Drawings):** The APTIM team will present conceptual plans for prioritized projects to obtain feedback.

The APTIM team will also hold monthly meetings between our project team and CEPD staff to provide progress updates, review outstanding items, and discuss next steps. Prior to each meeting, the APTIM team will prepare meeting materials including invites, sign in sheets, agendas, presentations, and will be responsible for all logistics and coordination. Meeting notes will be recorded at meetings and provided to CEPD. APTIM has a productive long-term relationship with CEPD, and our project manager and team stand ready to continue providing high quality service and frequent attendance at meetings to support project delivery.

TASK 2: Acquire Background Data

Key APTIM team members will be responsible for acquiring all necessary background data for the development of the Adaptation Plan. Research conducted during this task will focus on **assessing the feasibility, effectiveness, and localized fit of potential adaptation strategies**. The **local experience** of the APTIM, Coastal Vista, and AIM team members positions our larger team to be able to **expedite this data collection process** and provide unique and vetted perspectives. Our team is familiar with the local landscape, flooding projections and bayside dynamics, and neighborhood designations and compositions, and also has experience with nearby implementation of successful and innovative adaptation strategies that incorporated nature-based solutions. APTIM will leverage existing data to streamline our analysis and minimize duplication of effort while incorporating any additional data sources to fill in any data gaps including seagrass and mangrove maps, wetland and general surveys, geotechnical sampling. We will achieve this by **organizing outreach, and requesting data from local agencies, utilities, and organizations**.

The vulnerability assessment relied on available, vetted, datasets and reports to represent a few infrastructure types, and APTIM believes that to better tailor strategies additional surveying and data collection for **as-built seawall height survey data, comprehensive stormwater data, and official data for electrical transformers and utility boxes**, would be advantageous.

TASK 3: Public-Private Implementation Analysis

Captiva Island faces a unique challenge in terms of implementing adaptation projects due to the extensive privately owned land on the island's bayside. To address this complexity, the Public-Private Implementation Analysis is a critical component of the Captiva Bayside Adaptation Plan. We recognize the need for easement collections and outreach to confirm likely participation by private property owners for a successful implementation analysis. Our team seeks to provide a comprehensive understanding of the challenges, opportunities, and considerations related to implementing climate adaptation projects on privately owned lands. **Identifying Ownership and Jurisdiction** | Public-private implementation analysis begins by clearly identifying the ownership and jurisdiction of different areas on the Island's bayside. Distinguishing between publicly owned lands, privately owned properties, and identifying the sovereign submerged areas is essential for the determination of authority and the type of projects can be implemented.

Strategic Analysis | A central focus of the public-private implementation analysis is to assess the strategic options for implementing the adaptation projects. Key considerations will include funding mechanisms, permitting requirements, the roles of various entities or agencies, and the unique challenges posed by Captiva's proximity to state-owned aquatic preserves and conservation lands.

Policy Considerations | Policy considerations and authority will be of paramount importance with the public-private implementation analysis. Our approach will involve a comprehensive examination of CEPD's authority to implement projects on privately owned lands. Additionally, our environmental policy advisor, **Richard Grosso, P.A.**, will address the requirements for public projects on private lands, ensuring full consideration of implications and process.

Stakeholder Engagement, Incentives, and Standards | To encourage the implementation of climate adaptation strategies on private lands, our approach will delve into potential incentives. These

*Having conducted the **vulnerability assessment** for Captiva Island, the APTIM team has a strong head start and has already collected relevant background data. Such data included critical infrastructure and other assets, LiDAR, flood elevations, and a comprehensive list of both privately- and publicly owned seawalls and roadways.*



Living shorelines application on a private property in Captiva Bayfront (Coastal Vista)

incentives may encompass financial or regulatory measures. Stakeholder engagement and community involvement will be pivotal aspects of our approach.

TASK 4: Adaptation Plan

APTIM's experience with coastal planning and design paired with our recent experience assisting CEPD in developing Captiva's Sea Level Rise Flood Vulnerability Assessment, positions us to produce a comprehensive, locally customized, accessible, and detailed Adaptation Plan. The following describes our team's approach and initial perception of the necessary elements to be included in the plan.

*APTIM led the Resilient Florida compliant **vulnerability assessment** necessary for state grant funding that will serve as the basis for the adaptation plan.*

Prioritization of Adaptation Needs | We will prioritize adaptation needs based on the indicated at-risk infrastructure of the vulnerability assessment and a minimum existing capacity to adapt, ensuring that the most critical areas of concern are addressed in the adaptation plan. This will be done in consultation with Steering Committee members and community members and in accordance with statutory requirements.

Identification of Adaptation Strategies and Prioritization of Projects | Adaptation strategies will target the identified vulnerabilities from the recent assessment, including the evacuation route, the bayfront shorelines and seawalls and recurrent flood risks in the floodplain. We will meticulously curate a **comprehensive suite of adaptation strategies** that represents a blend of both structural and non-structural measures, with a **pronounced emphasis on nature-based and hybrid solutions** where applicable. Adaptation strategies will address tidal flooding and high frequency surge events, potential overwash along the low-lying bayfront shorelines, sea level rise inundation and future drainage restrictions associated with sea level rise.

Potential Strategies



Living Shoreline with Resilient Engineered Features | A vegetated shoreline habitat would reduce wave damage to infrastructure and mitigate erosion along bayfront properties and shared community infrastructure while providing ecosystem services. A resilient living shoreline may also incorporate impermeable barriers to mitigate tidal flooding where feasible. Since the **bayfront shoreline is privately owned**, visualization of options of a bayfront living shoreline and assessment of its performance, potential impacts and benefits would support outreach to obtain shoreline owners' support for implementation prior to advancing the permitting process. APTIM can perform hydrodynamic modeling using DELFT3D+SWAN to evaluate the performance, benefits and impacts of bayfront living shoreline alternatives on adjacent upland, shorelines and wetlands. Model results will assist in the refinement of strategy.



Minimum Shoreline Elevation Policy for Bayfront Properties | Setting construction standards would ensure that shoreline adaptations mitigate the effects of tidal flooding and sea level rise by preventing flood trespassing onto roads and across properties. The implementation of such a policy requires a **partnership with private property owners** and community engagement. The APTIM ELEVATE tool can extract accurate seawall heights along the island. This cost-effective method precludes the need for mobile LiDAR or land surveys of individual seawalls for planning purposes.



Mangrove Adaptation Plan | Mangroves located near Captiva provide various ecosystem services to the island including shoreline protection from storm and hurricane winds, waves, and floods and erosion prevention. The tangled root systems of the mangroves stabilize sediments, and their filtration system helps to improve water quality. A Mangrove Adaptation Plan would protect and sustain the mangroves near the island in order to secure these services support the island in the future. Model mangrove sustainability and shoreline erosion with sea level rise will be performed utilizing NOAA's *Sea Level Affecting Marshes Model (SLAMM)*. This modeling will simulate potential impacts of long-term sea level rise on mangrove wetlands and shorelines.



Resilient Dune Strategy | The strategy would help protect landward property from damage and flooding, increase coastal storm protection, help minimize the effect of sea level rise, and provide erosion control. The strategy may include filling gaps in existing dunes, increasing the elevations of low dunes or adding walkovers or other features to mitigate storm surge and flood risk through dunes.

Feasibility Analysis | The adaptation plan will include a **robust feasibility component**, encompassing a comprehensive funding analysis and implementation strategy analysis. Adaptation strategies will be evaluated based on previous analyses, existing data and coordination with the CEPD. If feasible, adaptation strategies will be developed to derive co-benefits for community resilience including water quality improvements. Costs of adaptation strategies will be estimated based on libraries developed as part of the U.S. Army Corps of Engineers South Atlantic Coastal Study or recent project costs.

Prioritized Projects for Each Asset Class | A list of projects will be generated as defined in subsection 380.093(2), F.S. Based on the findings of the analysis, APTIM recommends that coastal infrastructure be adapted to resist flood elevations of at least **3.5 feet NAVD**. Without this level of protection, evacuation routes, 27% of roads, the fire station, two water treatment facilities, the post office, the library and up to 70% of building footprints are at risk of some flooding in the near to mid-term. The implementation strategy will incorporate a pragmatic roadmap, outlining **clear milestones and timelines** for the successful execution of the proposed projects.

Recognizing the pivotal role of policy in facilitating effective adaptation measures, our plan will include a set of comprehensive **policy recommendations**. Adaptation strategies concerning beach and shore restoration and erosion control will be **recommended for incorporation within the Comprehensive Beach and Shore Program**. To guide private adaptation and increase the likelihood that the community has

systemic resilience to flooding, a **new policy regarding tidal flood barriers** along shorelines and enhancement of green infrastructure along the waterfront will be recommended. Assets identified for hardening, elevation, or **physical adaptation** to mitigate flood risks will be accompanied by detailed plans ready for subsequent design, permitting, and construction. The optimized sequencing of measures and anticipated funding sources will be clearly outlined in the plan.

ACTIONS BY IMPLEMENTATION TIMEFRAME

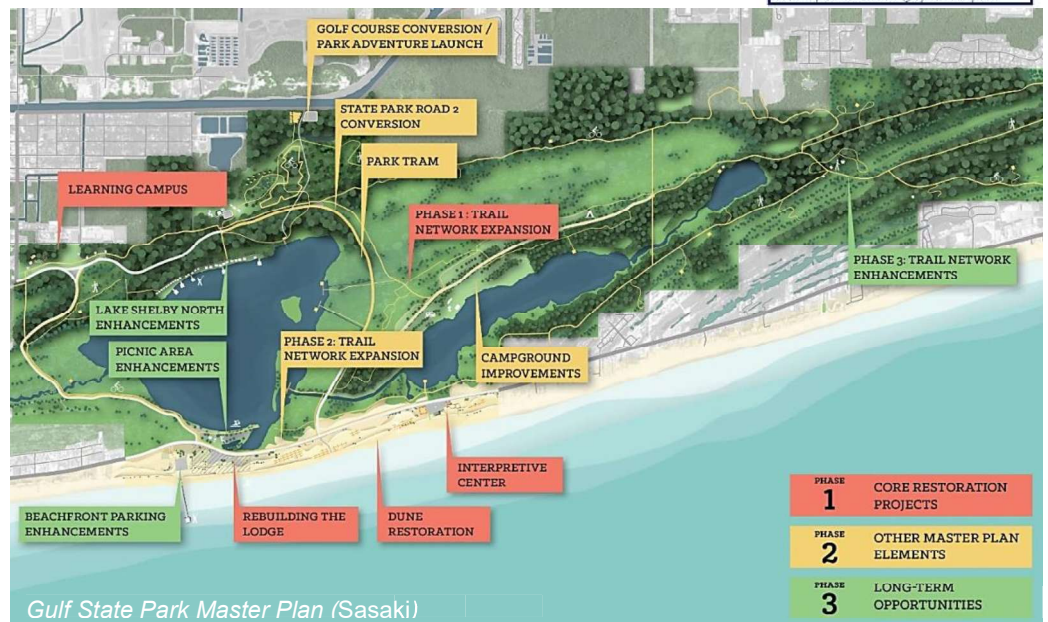
Near Term (0-5 Years)	Mid Term (5-10 Years)
Action 1: Install and Maintain Tide Valves	Action 3: Integrate Lift Stations and Stormwater Pumps into Capital Program
Action 2: Implement Tidal Flood Barrier Policy	Action 8: Flood-proof Vulnerable Electrical Equipment at Lift Stations
Action 6: Monitor Infiltration and Corrosion of Utility Assets	Action 9: Increase Resilience of Dune System
Action 7: Amend Stormwater Management Strategy	Action 10: Maintain Access and Evacuation Routes
Action 15: Evaluate Opportunities to Integrate Green Infrastructure	Action 11: Maintain Condition of Roads Experiencing Tidal Flooding and Seepage
Action 16: Adopt Policy Map Showing Sea Level Rise Projections	Action 12: Maintain Beach Access Points
Action 17: Continue to Support Resilience Standards in Policies	Action 13: Increase Water Quality Monitoring Near Septic Systems
Action 18: Consider Adaptation Needs in Evaluation of Redevelopment Impacts	Action 14: Plan for Mangrove Adaptation
Action 19: Encourage Private Adaptation	Long Term (>20 Years)
Action 20: Maintain or Improve Community Rating System Grade	Action 4: Evaluate Performance of Dry Retention Areas, Wet Detention Areas and French Drains
Action 21: Conduct Community Outreach	Action 5: Install Road Berm and Pump Stations
Action 22: Prepare for Intergovernmental and Stakeholder Coordination	
Action 23: Encourage Floodproofing of Electrical Charging Stations and Battery Storage Equipment	
Action 24: Prioritizing Recovery Projects After Storm	
Action 25: Schedule Proposed Projects Based on Urgency, Funding Availability and Potential for Bundling	

Timeframes

Now
Near term represents planning horizon for urgent priorities and existing risks that should be addressed in next 5 years.

2040
Mid term planning horizon affords time to address future risks anticipated by 2040. Policies initiated in near term are assumed to be fully implemented.

2070
Long term planning horizon affords time to address future risks anticipated by 2070. Critical infrastructure installed today will need to be replaced at end of 50 year life cycle.





TASK 5: Public Outreach Meetings

APTIM understands the critical role that meaningful local input plays throughout the adaptation plan process. We will organize and facilitate four bimonthly public outreach meetings throughout Tasks 3, 4, and 6, during **February, April, June, and August 2024**. The purpose of the public outreach meetings will be to educate the public, present the proposed strategies for Captiva’s bayside vulnerabilities, and to gather community- specific input to refine the assumptions used when assessing the feasibility of presented strategies. APTIM

will meet with residents and community leaders to understand local experiences with severe weather and to pinpoint community goals for customizing and prioritizing adaptation strategies. Our team will integrate on-demand immersive virtual platforms into outreach. APTIM understands the need for providing access to project information throughout the project and will provide online resources, video recordings and opportunities for virtual interactions to increase participation and gain consensus at key decision points in the project.

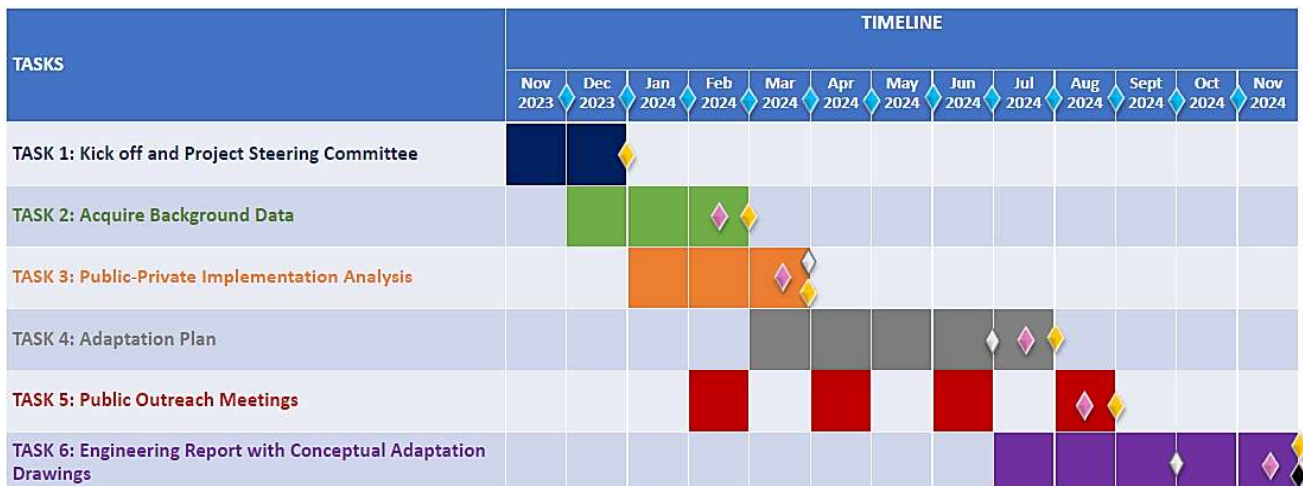
TASK 6: Engineering Report with Conceptual Adaptation Drawings

Living shorelines and nature-based solutions will be the key components of our approach achieving the goal of floodproofing the island and preserving the natural shorelines of the Bayside. As the APTIM team, we recognize the significance of providing numerous design alternatives, including as many as **10-15 Conceptual Adaptation Drawings and renderings** for the CEPD and stakeholders to choose from. Additionally, a thorough **Engineering Report and Plans** at the 30%, 60%, 90%, and final design stages to get the input from the CEPD, and tailor the design based on the input from CEPD and the public outreach. Engineering Plans will include plan, profile, and cross-sectional views of the design, including typical sections where applicable. To this end, we have assembled a team of experienced Florida-registered Professional Engineers and Adaptation Professionals, locally experienced and globally recognized landscape architects. **30%, 60%, 90% design checkpoints allow for rigorous quality control by our team of experts.** Additionally, they ensure that the evolving project designs align with the objectives, thereby minimizing the risk of deviations that could lead to increased costs or timeline delays. We will also deliver a comprehensive list of applicable regulatory requirements for each of the asset adaptations identified as most critical.

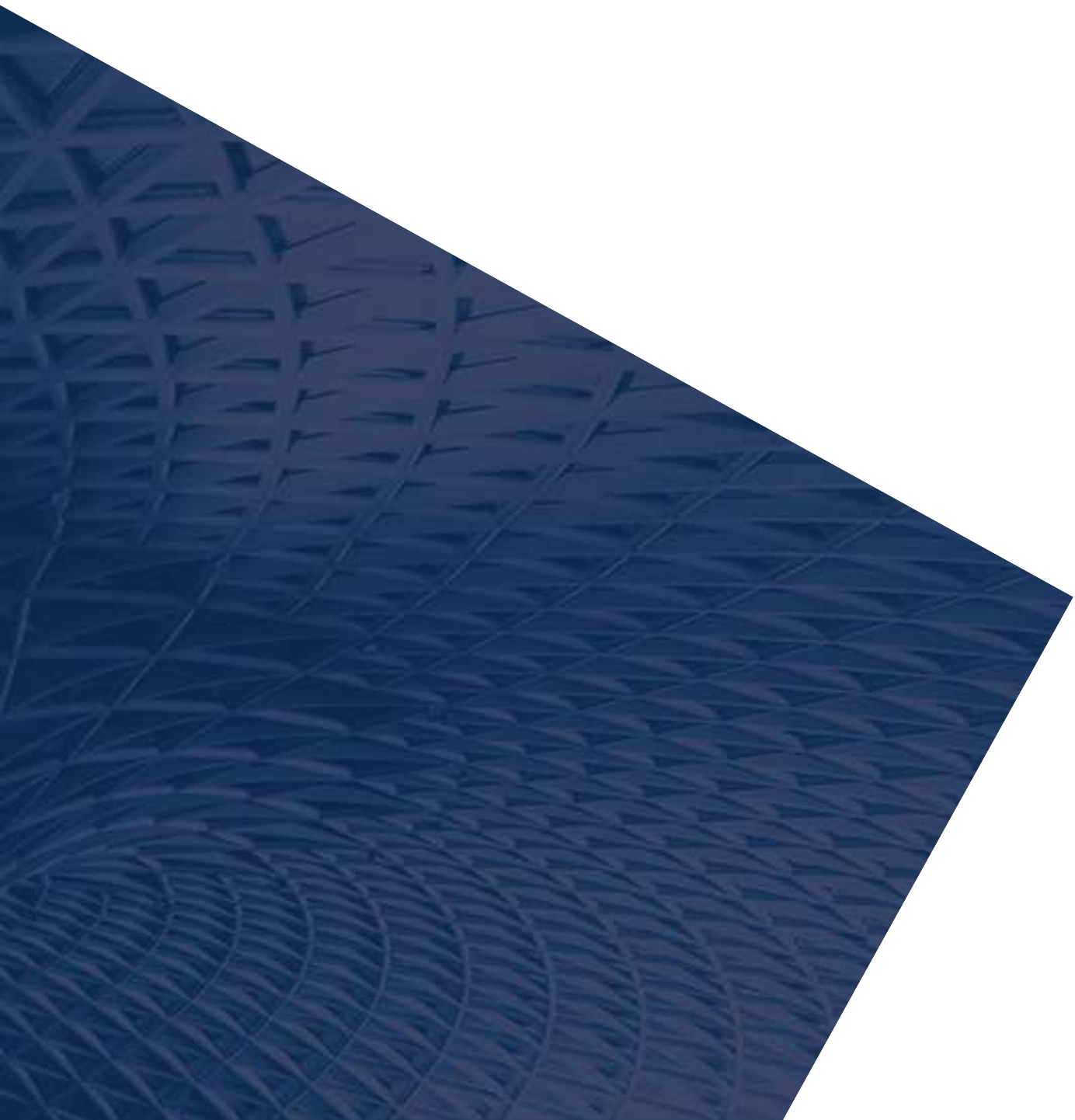
Construction Cost Estimates will be developed in tandem with the design plans, offering CEPD insights into the projected costs at each stage of the projects. This is aimed to empower the CEPD to make informed decisions, and allocate resources optimally as directed in the grant work plan.

Proposed Activity Schedule

APTIM has prepared a timeline (Figure) that adheres to the proposed project duration within the RFQ from contract execution and spans across approximately 12 months (November 2023- November 2024)



TAB 4 OTHER INFORMATION



Other Information

Understanding of Adaptation Plans | APTIM excels in identifying and prioritizing critical infrastructure and assets, working collaboratively to develop prioritization mechanisms that align with unique needs. Our approach emphasizes the development of tailored resilience strategies, including evaluating the benefits and costs of implementing these strategies to ensure they are economically feasible and address the objectives of unique localities and landscapes. APTIM understands the importance of engaging in collaborative planning, centering public participation to shape resilience plans that resonate with local communities and stakeholders.

We are equally committed to translating strategies into action. Our seasoned experts provide the technical prowess needed to assist in developing and updating the internal documents and manuals of municipalities and communities, ensuring they align seamlessly with recommended adaptation strategies and flood resilience initiatives. APTIM has developed strategies in the past that encompass the management of shorelines, stormwater and public assets, preparing for redevelopment, supporting community engagement and planning for future capital investments.

When implementing plans, APTIM provides a description of each proposed implementation strategy with lists of key focus areas and relevant stakeholders to support implementation. Strategies are then organized and prioritized by planning horizons which include current conditions, mid-term, and long-term. To further support implementation, APTIM provides a schedule of resilience projects, preliminary costs as well as a breakdown of the anticipated return on investment.

Adaptation Planning for Public and Private Shorelines and Sovereign Submerged Lands |

Private adaptation requires action and consent from property owners who will decide how much to invest and when to maintain their assets. Much of the vulnerable infrastructure along Captiva is privately owned and would require private adaptation. Repeat disruption or incompatible projects could occur without coordination. Through policy and providing planning guidance, CEPD could support private adaptation. While adaptation focuses heavily on physical resilience strategies and actions, the support and implementation of resilience policies is critical to guiding private adaptation. Examples of recommended actions to ensure resilience standards are supported include:

- ✓ Continue to require review of permit applications for proximity to at-risk areas and require flood risk mitigation measures to be included in application.
- ✓ Continue to require drainage permits for redevelopment.
- ✓ Continue to update comprehensive plan for consistency with Peril of Flood legislation.

Our team has experienced working with residents to encourage and gain consensus on various strategies so that implementation can commence across private land. To achieve harmonizing of adaptation measures, localities must purchase right of ways for road adaptation, and easements for living shorelines.



Understanding of Engineering Reports and Creation of Conceptual Design Drawings|

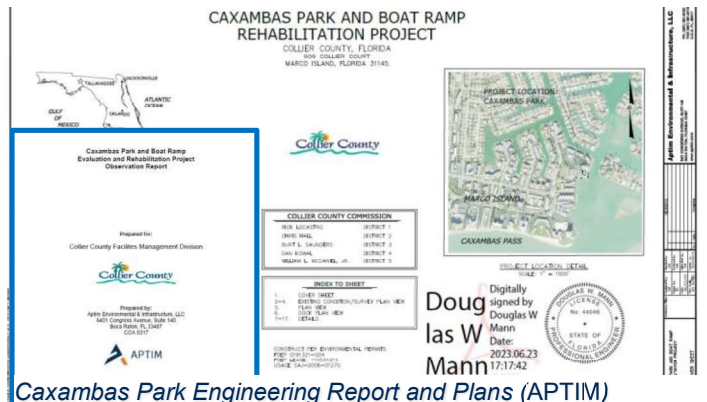
Our team’s understanding of Engineering Reports and Creation of Conceptual Design Drawings are best illustrated with our successfully completed project reports and design drawings shown below.



Sarasota Bayfront (Sasaki)



Broward County - Developing Resilient Shorelines (ESA)



Caxambas Park Engineering Report and Plans (APTIM)

Experience Identifying and Assessing Nature-Based and Hybrid Solutions

Our team has developed and successfully implemented numerous nature-based and green-gray adaptation strategies as shown in below images. Our experts conduct a detailed suitability assessment using GIS based living shoreline suitability models and considering the roles coastal tidal flooding, sea level rise, and level of coastal erosion. In our experience working on nature-based and hybrid solutions, we have found that a comprehensive multi-layer approach that employs both nature-based solutions such as oyster-based habitats, and hard structures like nearshore breakwaters work best in providing multiple layers of protection to the shorelines while improving water quality, supporting wave attenuation, and restoring the ecosystems.

COMPARING THE THREE DESIGN CONCEPTS



	IMPERVIOUS SURFACE	SOFT EDGE (LINEAR FEET)	HARD EDGE (LINEAR FEET)	NATURAL AREAS: MANGROVE & OTHER HABITAT (ACRES)	SEA LEVEL RISE + RESILIENCY ACCOMMODATION
EXISTING CONDITIONS	65%	2,399	3,262	4.5	
SHIFT THE HORIZON	29%	6,316	1,755	13.5	TIERED LANDSCAPE
BRIDGE THE DIVIDE	29%	4,524	3,130	6.6	GREEN ROOF
THE VILLAGE + THE ISLAND	34%	5,370	2,972	12.1	FLOODABLE COASTAL LANDSCAPE

The Sarasota Bayfront Master Plan (Sasaki)

We are enthusiastic about utilizing emerging technologies (examples shown on the bottom right) Our proposed adaptation strategies will employ the use of 3D printed concrete blocks, habitat panels along sea walls and other waterfront infrastructure, and flood-proof glass walls along the shorelines where the unobstructed view is desired. These cutting-edge technologies will not only enhance resilience but also maintain visual aesthetics while safeguarding the bayside shores. Our living shoreline experts have vast experience in design and permitting of nature-based applications.

Familiarity with Non-Structural Strategies

The team has ample experience with recommending and implementing non-structural strategies, including policy amendments and administrative actions. Policies such as tidal flood barrier requirements and providing a minimum elevation for barriers help to encourage adaptation. Our team has experience with developing strategies based on the following recommendations:

- ✓ Operating and maintaining stormwater management infrastructure to control flooding and provide environmental benefits.
- ✓ Setting resilient redevelopment standards in zones of future land use element
- ✓ Adding resilience needs to roadway priority project rankings.
- ✓ Mitigating for corrosion and roadbed failure.
- ✓ Planting salt tolerant vegetation in inundation areas.
- ✓ Requiring tidal flood barriers of minimum elevation to prevent inundation of common property/ streets (no gaps in barrier)
- ✓ Implementing incremental adaptation by private property owners
- ✓ Allowing natural adaptation of wetlands and avoiding conflict with flood protection measures



The Sarasota Bayfront Master Plan (Sasaki)



Broward County Living Shorelines (ESA)



Artificial Reefs/ Reef Balls



FENEX flood-proof glass walls, Ft. Lauderdale



nit, low-carbon concrete, Boca Raton, FL



University of Miami – SEAHIVE design




Design - Living SeaWall, Miami, FL




1Print, Pompano Beach, FL

Completed Projects for Clients | The following project vignettes illustrate our team’s experience in adaptation and resilience plans, living shorelines, green infrastructure design and additional relevant projects for clients in the United States, Florida, and other regions of the United States, on islands including barrier islands, and for state and local government clients.


Captiva Flood Vulnerability Assessment | APTIM

Client CEPD	Date of Initiation / Completion 2022 / 2023
<p>Description/Services: APTIM conducted an island-wide vulnerability assessment for the Captiva Erosion Prevention District (CEPD) necessary for state funding eligibility. Flood and sea level rise scenarios were mapped to determine the on and off island critical infrastructure that would be exposed and impacted and to identify high risk assets. APTIM identified vulnerabilities affecting CEPD’s jurisdictional area, private property, and the ability of CEPD to fulfill its responsibilities based on exposure, sensitivity, and risk to flood hazards.</p>	
	


Sanibel Causeway Shoreline Stabilization Project | APTIM

Client Lee County	Date of Initiation / Completion 2017 / 2022
<p>Description/Services: The purpose of the stabilization project was to address the erosion of the San Carlos Bay and Pine Island Sound shorelines of Sanibel Causeway on Island B and address the storm water runoff from the causeway road, which was impacting the upland infrastructure, destabilizing the shoreline while taking into consideration adjacent seagrass habitats and the recreational areas used by the public.</p>	
	


Ohio Creek Flood Resiliency Adaptation Strategy | APTIM

Client City of Norfolk	Date of Initiation / Completion 2016 / 2018
<p>Description/Services This project reestablished the eroded 4-foot shoulder of Jungle Trail complying with County roadway specifications to increase the long-term resiliency of the roadway and the ability to provide safe passage to residents. Rock revetment and breakwater designs were evaluated as potential solutions. A hybrid solution was chosen- limestone rip rap was placed to secure the long-term survival of mangroves and other native estuarine species along the new berm as an integral part of shoreline stabilization.</p>	
	

Mallory Square Master Plan | Sasaki

Client City of Key West, FL	Date of Initiation / Completion 2022 / Ongoing
<p>Description/Services: Sasaki led in-depth conversations with city officials, business owners, performers, vendors, and the broader community to develop a visionary master plan for Mallory Square. The plan introduces significant shade elements all driven by a cultural and ecological narrative that utilizes lush planters and stone blocks carve out shaded seating areas and flexible spaces.</p>	
	

Pellicer Flats Mitigation Bank | APTIM

Client LRA Hammock Beach, LLC	Date of Initiation / Completion 2012 / 2016
<p>Description/Services: APTIM was contracted for design and permitting, survey and data collection, modeling and mitigation planning to establish the Pellicer Flats Mitigation project. APTIM staff coordinated with agencies to permit the restoration of mangrove and marsh shorelines along a series of restored mosquito ditches. APTIM supported the application of the Uniform Mitigation Assessment Method during mitigation design, negotiations during pre-application meetings, and developed plans and specifications.</p>	
	

West Marsh Preserve Design, Permitting, & Construction Phase Services, Lehigh Acres, Florida | AIM

Client Lehigh Acres Municipal Services Improvement District	Date of Initiation/ Completion 2013 / 2021
<p>Description/Services AIM provided design, permitting, surveying, and construction phase services for this</p>	

multi-phase project involving the creation of treatment wetlands to provide water quality treatment and additional surface water storage capacity in the LA-MSID Able Canal (Orange River) basin for large storm events. AIM conducted a Digital Terrain Model (DTM), environmental assessment, hydraulic modeling of the system in conjunction with the existing Harns Marsh facility to optimize operation and performance.

Bonnet Springs Park| Sasaki

Client Lakeland, FL

Date of Initiation / Completion 2021 / 2022



Description/Services: Sasaki led the design effort to transform a 168-acre former industrial and agricultural brownfield in Lakeland, Florida into Bonnet Springs Park. The major natural features of the park include the remediation of the polluted brownfield, resilient stormwater treatment strategies, the restoration of the park’s namesake Lake Bonnet, wetlands and sand seep spring, and the protection and restoration of a mature live oak grove. New landscape amenities are designed to extend the visitor experience.

Gulf State Park Master Plan & Implementation | Sasaki

Client The University of Alabama

Date of Initiation / Completion 2016 / 2018

Description/Services: The project includes five key elements—enhancing the visitor experience, building a research and education center, constructing an interpretive center focused on dune ecology, rebuilding a lodge at Gulf State Park, and restoring the dunes. The master plan provides the context and overarching vision for the park, building on its unique assets to help the park become an international model of environmental and economic sustainability and demonstrating best practices for outdoor recreation.



Collins Park Revetment Rehabilitation | APTIM

Client PPG Industries, Inc.

Date of Initiation / Completion 2019 / 2020



Description/Services: APTIM conducted a site investigation to evaluate the current condition of the revetment and to develop repair alternatives to restore the revetment. Design criteria included wind speed, wave height, current speed, ice forces, storm surge, and overtopping were considered based on the 100-year storm event impacting the Kill van Kull. The design includes 2-foot diameter armor stone over a geotextile with a 2:1 slope. The top of the revetment elevation varies between +8’ NAVD and +13’ NAVD, and ties into the proposed upland grade.

Residential Backwater Valve Installation Program, New York | APTIM

Client Governor’s Office of Storm Recovery

Date of Initiation / Completion 2022 / Ongoing

Description/Services: APTIM helped implement the Residential Backwater Valve Installation Program, which provides free resiliency audits, elevation certificates, and backwater valve installations to low-income New Yorkers living in the 100-year or 500-year floodplain. The program includes identifying home resiliency strategies, cost estimates, and financing options; and helping program participants understand options and determine what strategies are right for them.



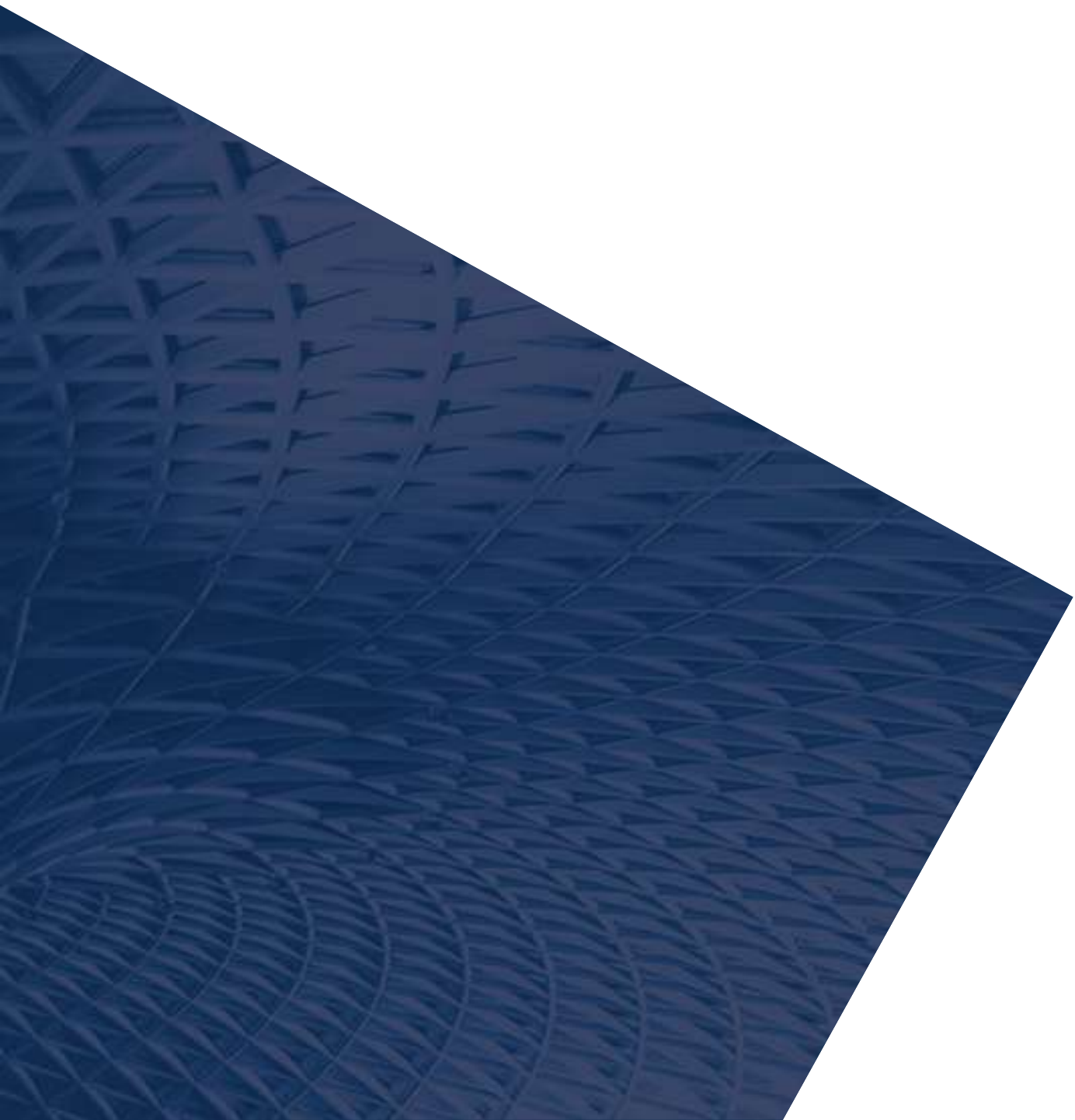
EPA Sea Level Rise and Water Supply Adaptation | APTIM

Client Governor’s Office of Storm Recovery

Date of Initiation / Completion 2022 / Ongoing

Description/Services: APTIM assessed the vulnerability of Massachusetts coastal communities to storm surge, saltwater intrusion and projected sea level rise. This work was performed using a surface water model HEC-RAS/HEC-HMS and a storm surge mode SLOSH. EPA then requested additional work to determine the predicted storm surge for different categories of hurricanes and sea level rise scenarios at locations in Connecticut and Virginia.

TAB 5 COST BREAKDOWN ACROSS TASKS AND SCHEDULE PROPOSAL



Cost Breakdown Across Tasks & Proposed Schedule

A. Detailed Budget Per Task

The APTIM team is willing and able to meet time and budget requirements of this contract.

APTIM and our sub-consultants, Coastal Vista, AIM Engineering, Matterscan, Sasaki, ESA, and Richard Grosso are proud of our history of maintaining long-term client relationships. APTIM has worked with many of our coastal clients for over 20 years by meeting time and budget requirements, Captiva Island being one of our long-term clients. We are committed to working with CEPD and continuing the development of our relationship to ensure all projects and tasks are completed on schedule and within budget.

Table 5-1 illustrates APTIM's comprehensive breakdown of anticipated pricing across tasks. The estimated cost for the project scope is \$500,000, which includes Kick-Off and Project Steering Committee, Acquiring Background Data, Public-Private Implementation Analysis, Adaptation Plan, Public Outreach Meetings, and Engineering Report with Conceptual Adaptation Drawings. This estimate is based on our experience and accounts for the level of detail and stakeholder involvement required for this project.

Task	Estimated Cost
Task 1 - Kick off and Project Steering Committee	\$41,305
Task 2 - Acquire Background Data	\$28,070
Task 3 - Public-Private Implementation Analysis	\$85,417
Task 4 - Adaptation Plan	\$162,192
Task 5 - Public Outreach Meetings	\$34,810
Task 6 - Engineering Report with Conceptual Adaptation Drawings	\$148,206
Total	\$500,000

Table 5-1 Proposed Budget per Task

Accounting Controls and Budget Management

The APTIM team utilizes advanced project management and accounting software that provide project managers continual access to project budgets, schedules, and resources. Reports are issued weekly to project managers and directors of the business. This system helps with expenditure management and helps ensure the project team is on track to complete the required scope within the contracted budget. We continuously evaluate our progress to determine if the expenditure of the budget matches the expected timeline of the project.

The work plan includes any necessary meetings with employees, the steering committee, and the public. APTIM acknowledges that no additional costs or fees will be paid, including but not limited to travel costs, per diems, telephone charges, facsimile charges, and postage charges.

Development of Achievable Schedule

For each task assignment, time will be taken up front to make sure the APTIM team understands the task needs. A detailed work plan with appropriate staffing will be designed to fit within CEPD’s budget and timeline. The schedule can be updated per the decisions made during kick-off meeting, steering committee meetings, public outreach, and by focusing on the most critical elements required to complete the task assignment.

Our proposed schedule meets the requirements set forth in the FDEP grant and the budget equals the total available funding amount awarded through the grant and committed by CEPD as match.

We have used CEPD’s proposed project timeline provided to develop our proposed schedule shown on the next page. Considering that the Project Timeline provided in the FDEP Grant Work Plan indicates an end date of 4/30/2025, APTIM’s proposed schedule provides CEPD an additional 5 months to prepare for FDEP submittals. We stand ready to be flexible and adaptable to CEPD’s needs and directions, including support with FDEP deliverables.

Schedule Management

Once the schedule is developed, the APTIM team will work with CEPD to track performance and ensure we are meeting interim deliverable deadlines. We will inform CEPD if there are any new developments that may affect the schedule positively or negatively. Our experts can provide monthly progress updates integrated with billing details. Monthly reporting summarizes work progress for the preceding month, anticipated work for the following month, and highlights any critical issues affecting the project schedule and budget.

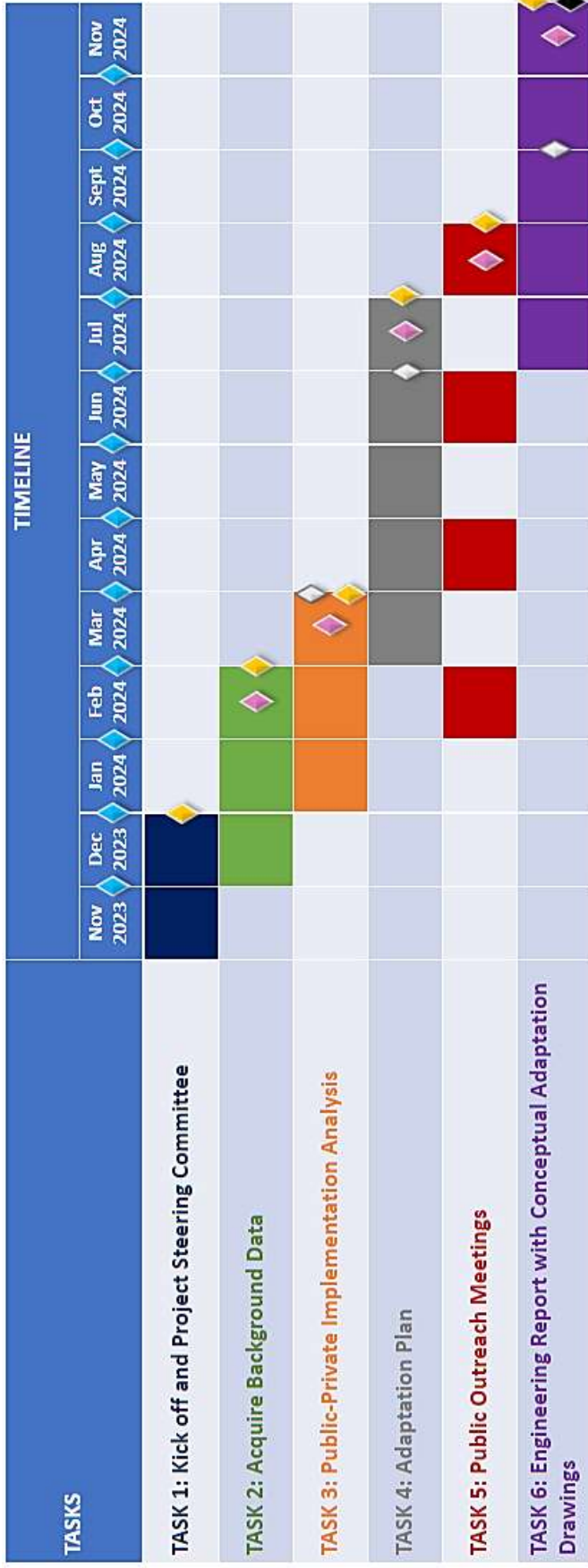
Our project approach is detailed in Tab 3, and detailed deliverables for each phase are listed on the next page.

B. Other Services

APTIM team may use the additional services listed in **Table 5-2** to complete the tasks in a timely manner. This table reflects the hourly rates and titles associated with staff available to provide additional services for this project.

Additional Services	Staff Title	Rates
Easement Collection Services	Outreach Professional	\$90/hour
Environmental & Physical Surveys	Surveyor	\$160/hour
Circulation Modeling for Permitting	Modeler	\$170/hour

Table 5-2 Hourly Rates and Titles for Additional Services



- Legend**
- Draft Grant- Compliant Deliverables Submitted to District
 - Final Grant- Compliant Deliverables Submitted to District
 - Steering Committee Meetings
 - Monthly District Progress Meetings
 - Project Completion (Nov 2024)

Task 1 Deliverables:

- ▶ Meeting agendas to include location, date, and time of meeting(s)
- ▶ Meeting sign-in sheets with attendee names and affiliation
- ▶ A copy of the presentation(s) and any materials created for distribution at the meeting(s)
- ▶ A summary report of committee recommendations

Task 2 Deliverables:

- ▶ A technical report to outline the data compiled and findings of the gap analysis.
- ▶ A summary report to include identified data gaps and actions taken to rectify them.

Task 3 Deliverable:

- ▶ A written implementation analysis

Task 4 Deliverable:

- ▶ Final Adaptation Plan

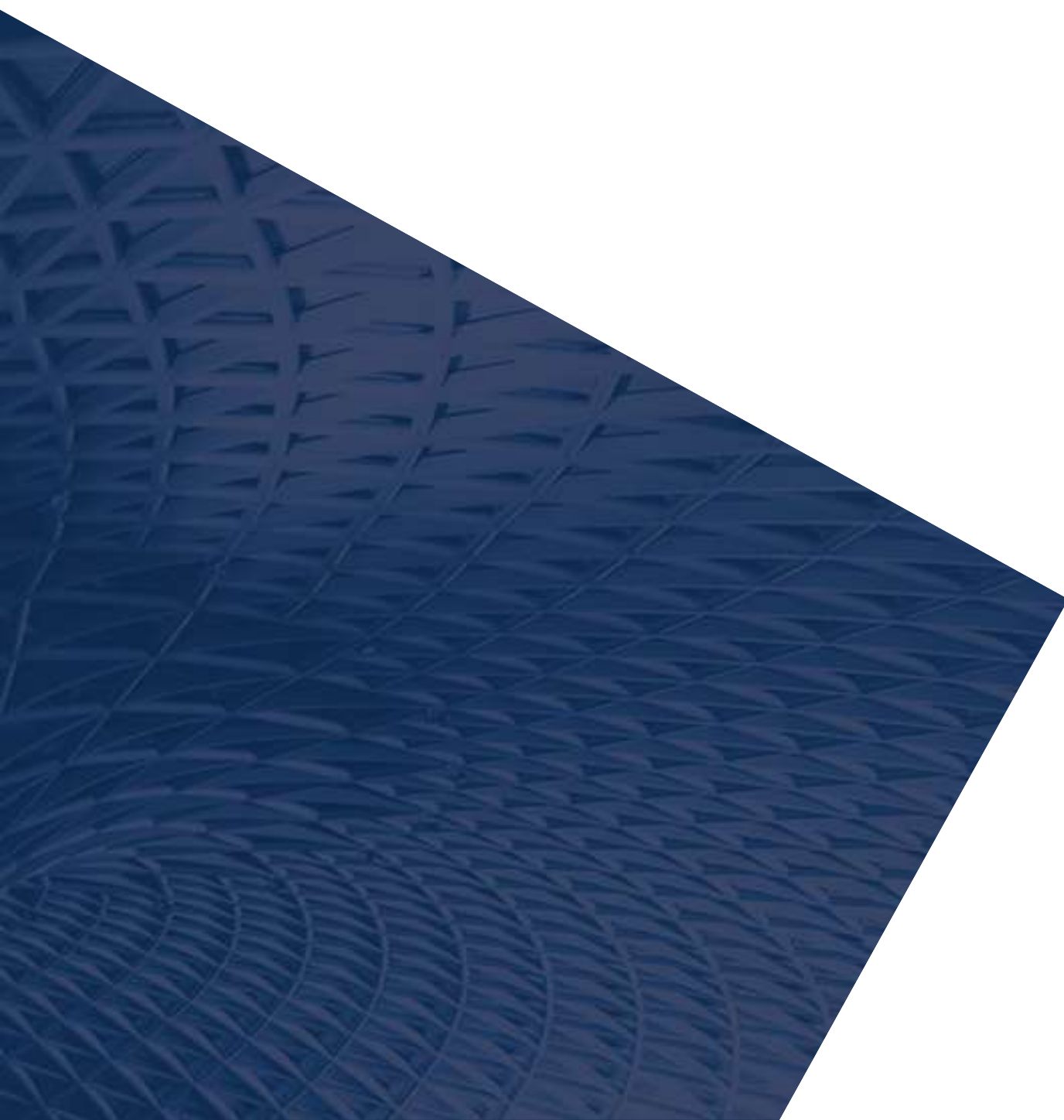
Task 5 Deliverables:

- ▶ Meeting agendas to include location, date, and time of meeting.
- ▶ Meeting sign-in sheets with attendee names and affiliation
- ▶ A copy of the presentation(s) and any materials created in preparation of or for distribution at the meetings, as applicable.
- ▶ A copy of the file or weblink of the video or audio recording from the meetings, if applicable; and
- ▶ A summary report including attendee input and meeting outcomes.

Task 6 Deliverables:

- ▶ An Engineering Report including conceptual drawings for priority assets or specific parts or portions of the critical and other assets which are most vulnerable, where physical adaptations are possible and recommended.
- ▶ A list of applicable regulatory requirements for each of the asset adaptations identified as most critical.

TAB 6 CORPORATE INFORMATION



Corporate Information

(1) A list of the officers and directors of the entity.

- ▶ Wade Bass
- ▶ Greg Coffman
- ▶ Steve Downey
- ▶ Mark Fallon
- ▶ Daniel Gray
- ▶ Todd Kindler
- ▶ Katherine Kolibas
- ▶ Bradley Lowe
- ▶ Margaret Phillips
- ▶ Mick Williams
- ▶ William Deane Jr.
- ▶ Alan Weakley
- ▶ Mike Ramage
- ▶ Ulrika Messer

(2) The number of years the person or entity has been operating and, if different, the number of years it has been providing the services, goods, or construction services called for in the bid specifications (include a list of similar projects).

- ▶ 2002 (22 years)
- ▶ Please refer to Tab 2 – Relevant Experience for our list of similar projects

(3) The number of years the person or entity has operated under its present name and any prior names.

- ▶ Aptim Environmental & Infrastructure, LLC since 12.31.2018 (4.5 years)
- ▶ f/k/a Aptim Environmental & Infrastructure, Inc.,
- ▶ f/k/a CB&I Environmental & Infrastructure, Inc.
- ▶ f/k/a Shaw Environmental Inc.

(4) Answers to the following questions regarding claims and suits:

a. Has the person, principals, entity, or any entity previously owned, operated or directed by any of its officers, major shareholders or directors, ever failed to complete work or provide the goods for which it has contracted? If yes, provide details;

No

b. Are there any judgments, claims, arbitration proceeding or suits pending or outstanding against the person, principal of the entity, or entity, or any entity previously owned, operated or directed by any of its officers, directors, or general partners? If yes, provide details;

Aptim Environmental & Infrastructure, LLC and its affiliates have been and may from time to time be named as a defendant in legal actions claiming damages in connection with engineering and construction projects, technology licenses and other matters. These are typically claims that arise in the normal course of business, including employment-related claims and contractual disputes or claims for personal injury or property damage which occur in connection with services performed relating to project or construction sites. Contractual disputes normally involve claims relating to the timely completion of projects, performance of equipment or technologies, design or other engineering services or project construction services provided by us. We do not

believe that any of our pending contractual, employment-related personal injury or property damage claims and disputes will have a material effect on our future results of operations, financial position or cash flow. Attached herewith is a list of matters and claims from the past five (5) years involving or relating to the bidding entity (Aptim Environmental & Infrastructure, LLC), and/or its officers, directors, and employees, that may be responsive to one or more of the questions in Tab 6, Section 4, subparts (a) through (d).

c. Has the person, principal of the entity, entity, or any entity previously owned, operated or directed by any of its officers, major shareholders or directors, within the last five (5) years, been a party to any lawsuit, arbitration, or mediation with regard to a contract for services, goods or construction services similar to those requested in the specifications with private or public entities? If yes, provide details;

No

d. Has the person, principal of the entity, or any entity previously owned, operated or directed by any of its officers, owners, partners, major shareholders or directors, ever initiated litigation against previous clients or been sued by previous clients in connection with a contract to provide services, goods or construction services? If yes, provide details

No

e. Whether, within the last five (5) years, the owner, an officer, general partner, principal, controlling shareholder or major creditor of the person or entity was an officer, director, general partner, principal, controlling shareholder or major creditor of any other entity that failed to perform services or furnish goods similar to those sought in the request for competitive solicitation;

No

f. Credit References (minimum of three), including name, current address and current telephone number; and

See attached

g. Financial statements for the prior three years for the responding entity or for any entity that is a subsidiary to the responding entity.

See attached

Aptim Environmental & Infrastructure, LLC

Matter Name	Type of Incident	Date of Incident	What was the initial circumstance for this action?	Jurisdiction	Final Outcome
Landfill Gas Collection System Expansion [Audit No. 2 40-59636-218] Hartfield, Vernon A.	Wage and Hour Alleged Employment Discrimination	2018 2018	The Division of Labor Standards Enforcement issued a Notice of Investigation regarding compliance with apprenticeships. Vernon Hartfield filed a lawsuit alleging racial discrimination in violation of the Title VII of the Civil Rights Act of 1964. Mr. Hartfield contends that he was denied job opportunities within his own department and was overlooked for a position in another department. Mr. Hartfield's employment at the Flint Hills site in Port Arthur, TX was terminated in a reduction in force on about May 12, 2017.	CA Labor Commissioner's Office U.S. District Court for the Southern District of Texas	Resolved Resolved
Bryant, Hilary and Akenyemi Johnson [NYCHA]	Alleged Employment Discrimination	2018	NYCHA Construction Project Manager Hilary Bryant filed a complaint with the New York City Housing Authority alleging race and national origin discrimination against current Aptim Environmental & Infrastructure, Inc. employee James Ohnigian. Mr. Ohnigian is the NYCHA Consultant & Acting Executive Project Manager assigned to the NYCHA Capital Projects, Project Management Department Team 3.	New York City Housing Authority Department of Equal Opportunity	Resolved
1. Elias Jorge "George" Ictech-Bendeck v. Progressive Waste Solutions of LA, Inc., et al.; 2. Larry Bernard, Sr. and Mona Bernard v. Progressive Waste Connections, APTIM Corporation, AND Parish of Jefferson; 3. Savannah Thompson v. Louisiana Regional Landfill Company, Aptim Corp., Parish of Jefferson, IESI LA Corporation; 4. Nicole M. Landry-Boudreaux v. Progressive Waste Connections, APTIM Corporation, AND Parish of Jefferson; and 5. Schauburg, Seth v. Progressive Waste Connections, APTIM Corporation, and Parish of Jefferson; 6. Addison, Frederick, et al. v. Progressive Waste Solutions of LA, Inc., Aptim Corp., et al.; 7. Anderson, Charles et al. v. Progressive Waste Solutions of LA, Inc., Aptim Corp., et al.; 8. Brunet, Michael, et al. et al. v. Progressive Waste Solutions of LA, Inc., Aptim Corp., et al.; 9. Winningkof, Mary Ann, et al. et al. v. Progressive Waste Solutions of LA, Inc., Aptim Corp., et al.; 10. Calligan, Rickey, et al. v. et al. v. Progressive Waste Solutions of LA, Inc., Aptim Corp., et al.; 11. Griffin, Regenia, et al. et al. v. Progressive Waste Solutions of LA, Inc., Aptim Corp., et al. 12. Fleming, Deborah, et al. v. Progressive Waste Solutions of LA, Inc., Aptim Corp., et al. 13. Gambino, Craig, et al. v. Progressive Waste Solutions of LA, Inc., Aptim Corp., et al. 14. Rantz, Edward, et al. v. Progressive Waste Solutions of LA, Inc., Aptim Corp., et al. 15. Brown, Debra Phelps, et al. v. Progressive Waste Solutions of LA, Inc., Aptim Corp., et al.; 16. Green, Geneva, et al. v. Progressive Waste Solutions of LA, Inc., Aptim Corp., et al.	Alleged Negligence	2018 and 2019	Multiple Petitions for Damages filed against several defendants relating to alleged noxious odors emanating from the Jefferson Parish, Louisiana Landfill. These companion cases arise out of the same set of facts and circumstances.	24th JDC for the Parish of Jefferson, Louisiana	Ongoing

Matter Name	Type of Incident	Date of Incident	What was the initial circumstance for this action?	Jurisdiction	Final Outcome
Grant, Kevonigh J. v. Aptim Environmental & Infrastructure, LLC and Witt O'Brien	Alleged Negligence	2019	Kevonigh Grant filed a lawsuit in the Superior Court of the Virgin Islands relating to an alleged vehicle accident on 11/1/18 involving alleged APTIM employees and an APTIM vehicle.	Superior Court of the Virgin Islands, Division of St. Croix	Resolved
O'Reilly Plumbing and Construction, Inc. v. Lionsgate Disaster Relief, LLC, Witt O'Brien, Aptim Environmental and Infrastructure, Inc., and AECOM [LIT]	Alleged Negligence	2019	This is a breach of contract and negligence action by a second-tier subcontractor, primarily against Aptim subcontractor Lionsgate, but also naming Aptim and Program Manager Witt O'Brien under a negligent hiring theory.	Superior Court of the Virgin Islands, Division of St. Croix	Ongoing
Samuel, Edward v. Aptim Environmental & Infrastructure, LLC	Alleged Negligence	2019	Edward Samuel filed a lawsuit in the Superior Court of the Virgin Islands, Division of St. Croix alleging negligent roof repair, which led to water inside the house, then a slip-and fall injury.	Superior Court of the Virgin Islands, Division of St. Croix	Resolved
Allco, LLC & Allco Virgin Islands, LLC v. Aptim Environmental & Infrastructure, LLC f/k/a Aptim Environmental & Infrastructure, Inc. and Jonathon Hunt	Alleged Contract Breach/Dispute	2019	Allco is an Aptim subcontractor on the USVI STEP (roofing) program. Allco's project work is complete. Certain items are "disputed" under the subcontract and will be paid upon resolution.	19th IDC for the Parish of East Baton Rouge, LA	Resolved
Gier, Damon, et al. v. Atlas Elevation Group, Inc., et al.	Alleged Negligence	2019	Plaintiffs filed a Complaint against Atlas Elevation Group, Inc., CB&I n/k/a McDermott International, Inc., et al. regarding the RREM program and repairs to Plaintiff's home for damages caused by Superstorm Sandy. Plaintiff alleges that CB&I was hired by NJDCA as one of its program managers and was negligent in failing to ensure that all program requirements were met in all planning, construction and payment events.	Superior Court of New Jersey, Mercer County	Resolved
Bettencourt, Anthony [CA DIR]	Wage and Hour	2019	Anthony Bettencourt filed a claim with the California Department of Industrial Relations alleging that he was paid straight time for overtime for 325.30 hours during the period from February 26, 2016 through August 10, 2018, in the amount of \$9,331.09. He also contends he was not paid final wages when due so seeks a \$12,622.80 penalty for 30 days of wages. His total claim is for \$21,953.89.	California Department of Industrial Relations	Resolved
Sikorski, Damion [CA DIR]	Wage and Hour	2019	Damion Sikorski filed a claim with the California Department of Industrial Relations alleging that he was paid straight time for overtime and is owed various penalties under CA law. Sikorski's total claim is \$51,245.73.	CA Department of Industrial Relations	Resolved
Bush, Dillon L. v. Aptim Environmental & Infrastructure, LLC, Greenwich Insurance Company, Sedgwick Claims Management Services, Inc., Donlen Trust and Noel M. Soto	Auto	2019	Our driver, Noel Soto, stated while he was pulling out on to Gauthier Road, he partially went in the ditch, leaving his truck partially in the road with no lights. Another driver, Dillon Bush, was traveling on Gauthier Road in a SUV and, after applying his breaks, hit Soto's vehicle. A witness confirmed Soto's truck was partially in the ditch and partially on the road with no lights, that he heard the crash and Mr. Bush's SUV was traveling at a high rate of speed with no lights on. Both drivers confirmed that they did not need medical attention. Mr. Soto was given 2 citations--improper turn and suspended driver's license.	14th Judicial District Court- Parish of Calcasieu, Louisiana	Resolved

Matter Name	Type of Incident	Date of Incident	What was the initial circumstance for this action?	Jurisdiction	Final Outcome
Avalon Funding Corporation v. Aptim Environmental & Infrastructure, LLC	Alleged Contract Breach/Dispute	2019	Avalon Funding is a lender to Aptim subcontractor Lions Gate (LG) with regard to the USVI STEP program. The two entered into a factoring agreement and Avalon apparently advanced funds to LG in return for ownership of LGs project receivables. As an initial matter there is disagreement as to what is owed to LG for work on the project. There is also an undisputed amount owed to LG. In addition, Avalon's course-of-dealing included "estoppel agreements" which purported to list amounts owed by Aptim and to bind Aptim to make those payments by a date certain without any right of setoff, etc.	Superior Court of the State of California, County of Orange	Resolved
Riverside County LFG Coil System Expansion Wage Claim [Audit No. 40-67085-267]	Wage and Hour	2019	The Division of Labor Standards Enforcement issued a Request for Payroll Records and a Notice of Investigation regarding compliance with apprenticeship requirements.	California Labor Commissioner's Office	Resolved
Heacock, Anthony [CA DIR]	Wage and Hour	2019	Anthony Heacock filed a claim with the California Department of Industrial Relations alleging that he was paid straight time for overtime and is owed various penalties under CA law.	CA Department of Industrial Relations	Resolved

Matter Name	Type of Incident	Date of Incident	What was the initial circumstance for this action?	Jurisdiction	Final Outcome
<p>1. Blankenberg, James v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 2. Brewer, Ryan v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 3. Duckworth, Joseph v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 4. Esteves, Edgar v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 5. Ford, Steven v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 6. Forrett, Ian v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 7. Fralick, Michael v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 8. Kinnicutt, Travis v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 9. Kliegl, Daniel v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 10. Ledrew, Christopher v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 11. Lewis, Douglas v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 12. Neizil, Jacob v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 13. O'Dell, Fredv. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 14. O'Neal, Joshua v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 15. Rahder, Andrewv. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 16. Whitman, Richard v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.; 17. Witten, Nicholas v. Campbell Development, LLC, Aptim Environmental & Infrastructure, Inc., et al.;</p>	<p>Alleged Negligent Misrepresentation</p>	<p>2019 and 2021</p>	<p>Multiple suits in the Superior Court of the Virgin Islands alleging that defendants engaged in intentional or negligent misrepresentation or misrepresentation by interference, fraud, breach of contract, negligence by Defendants Witt, O'Brien, APTIM, AECOM, Navigation and Patriot in contracting with the Campbell Defendants, and that Virgin Islands Housing Finance Authority improperly contracted with Defendants O'Brien, APTIM and AECOM. These companion cases arise out of the same set of facts and circumstances and were initially filed as one lawsuit in 2019 and severed in 2021.</p>	<p>Superior Court of the Virgin Islands, Division of St. Croix</p>	<p>Resolved</p>
<p>Fenster, Trudy v. Witt O'Brien, LLC, Aptim Environmental & Infrastructure, LLC, Lionsgate Disaster Relief, LLC and Virgin Islands Housing Finance Authority</p>	<p>Alleged Negligence</p>	<p>2020</p>	<p>Trudy Fenster filed a lawsuit in the Superior Court of the Virgin Islands, Division of St. Croix alleging negligent roof repair and negligent hiring.</p>	<p>Superior Court of the Virgin Islands, Division of St. Croix, USVI</p>	<p>Ongoing</p>
<p>DSW Homes v. Aptim Environmental & Infrastructure, LLC and Jonathon Hunt</p>	<p>Alleged Contract Breach/Dispute</p>	<p>2020</p>	<p>DSW is a pay-when-paid subcontractor on the USVI STEP (roofing) program. DSW's project work is complete. Aptim has yet to be paid by HFA for much of the work performed by DSW and we, therefore, argue payment is not due.</p>	<p>19th Judicial District Court for the Parish of East Baton Rouge, Louisiana</p>	<p>Resolved</p>
<p>United States of America ex rel. Scionti Construction Group, LLC v. Aptim Environmental & Infrastructure, LLC</p>	<p>Alleged Contract Breach/Dispute</p>	<p>2020</p>	<p>A second-tier subcontractor filed a Miller Act claim with an unjust enrichment count.</p>	<p>U.S. District Court-USVI-Division of St. Croix</p>	<p>Resolved</p>

Matter Name	Type of Incident	Date of Incident	What was the initial circumstance for this action?	Jurisdiction	Final Outcome
Nathaniel Phillips, Tesroy Phillips and Three In One LLC v. Woodforest Construction, LLC, Allco, Aptim Environmental & Infrastructure, LLC, Virgin Islands Finance Authority and Witt O'Brien	Alleged Contract Breach/Dispute	2020	This is a claim for nonpayment by Phillips, who claims to have been a labor broker for a third-tier subcontractor Woodforest Construction (hired by Allco). The other plaintiff also claims nonpayment by Woodforest, purportedly due under a joint venture agreement.	U.S. District Court-USVI-Division of St. Croix	Ongoing
Allen, Mark	Alleged Whistleblower/Retaliation	2020	LDAR Technician Mark Allen filed a whistle blower claim with OSHA alleging that APTIM terminated his employment in retaliation for his action in raising safety concerns at client's (Targa) premises. Aptim Environmental & Infrastructure employed Allen as an LDAR Technician from October 1, 2019 until February 7, 2020. APTIM terminated his employment after the client denied him access to their site due to performance problems	OSHA	Resolved
Hurlocker, John v. Aptim Services, LLC	Wage and Hour	2021	John Hurlocker submitted a notice to the CA Labor and Workforce Development of his intent to file an action under the Private Attorneys General Act of 2004 ("PAGA"). He also filed a lawsuit in federal court in northern CA, alleging federal and state law class and collective claims on behalf of similarly situated employees who were paid straight time overtime. The claims are asserted against Aptim Services, LLC (notably, not his employing entity) for violations of the CA Labor Code and federal law. Specific state allegations include failure to pay wages, failure to provide compensation for missed meal and rest periods, violating record keeping requirements, unlawfully collecting, receiving, or withholding wages and failure to pay wages promptly following termination of employment. Aptim Environmental & Infrastructure, LLC employed Mr. Hurlocker as a Scientist V at Humboldt Bay in Eureka, CA from 5/20/14 through 7/31/18 and from 11/3/2018 until APTIM terminated his employment on 9/15/19 in a reduction in force at the end of the project.	U.S. District Court-Northern District of California	Resolved
Patriot Response Group, LLC v. Aptim Environmental & Infrastructure, LLC, Domingo Camarano, Jonathon Hunt and Lissa Metoyer	Alleged Contract Breach/Dispute	2021	Patriot Response Group, LLC filed suit against APTIM for nonpayment of funds from work in the USVI.	19th Judicial District Court for the Parish of East Baton Rouge, Louisiana	Resolved
Hunt, Guillot & Associates, LLC v. Aptim Environmental & Infrastructure	Alleged Contract Breach/Dispute	2021	Hunt, Guillot & Associates, LLC filed suit against Aptim Environmental & Infrastructure alleging breach of contract, unjust enrichment, quantum meruit, suit on sworn account and violation of Texas Government Code Section 2251 in relation to work completed after Hurricane Harvey.	District Court of Harris County, TX	Ongoing
William Grit vs Koch Remediation and Environmental Services, LLC, Aptim Environmental and Infrastructure Inc. f/w/a CBI Environmental and Infrastructure Inc, Kennedy Jenks Consulting	Alleged Negligence	2021	William Grit alleges Aptim f/w/a CB&I failed to test wells on his property from 2014-2018 resulting in personal harm.	District Court of Shawnee County, Kansas	Ongoing

Matter Name	Type of Incident	Date of Incident	What was the initial circumstance for this action?	Jurisdiction	Final Outcome
Chitolie, Allan, d/b/a Chitolie Trucking Services v. Aptim Environmental & Infrastructure, LLC	Alleged Contract Breach/Dispute	2022	Allan Chitolie, d/b/a Chitolie Trucking Services filed suit against Aptim Environmental & Infrastructure, LLC alleging unpaid invoices in the amount of \$110,000.	Superior Court of the Virgin Islands, District of St. Croix	Resolved
Pitts, Valerie	Alleged Discrimination/Retaliation	2022	Valerie Pitts dual-filed a charge of discrimination with the Equal Employment Opportunity Commission and the Louisiana Commission on Human Rights alleging discrimination on the basis of race (African-American) and gender (female) and retaliation in violation of Title VII of the Civil Rights Act of 1964. Ms. Pitts contends that she was forced to resign due to a hostile working environment after receiving two written warnings from her managers. Aptim Environmental & Infrastructure, LLC employed Ms. Pitts as an administrator in the GOHSEP Hurricane Ida recovery project from June 20, 2022 through July 8, 2022. She resigned her employment following discipline based upon performance failures.	Equal Employment Opportunity Commission	Resolved
Entergy New Orleans v. Coastal Protection and Restoration Authority, Great Lakes Dredge & Dock Company, Louisiana, Aptim Corp., et al.	Alleged Negligence	2023	Entergy New Orleans filed suit against CPRA, Great Lakes Dredge & Dock Company, APTIM, GeoEngineers, and Southern Shores Engineering due damage to Entergy's pipeline that allegedly resulted from the "block shift" that occurred during construction of Marsh Containment Area No. 2 on the Golden Triangle Project. Aptim retained by CPRA to design the Project; Southern Shores was the engineer of record for the Project and a sub to APTIM; Geo was a sub to APTIM as the geotechnical engineer on the Project and Great Lakes was retained by CPRA to construct the project.	19th Judicial District Court for the Parish of East Baton Rouge, Louisiana	Ongoing



Aptim Environmental & Infrastructure, LLC

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Baton Rouge, LA 70802

Charter #: 35251103 D
Year and State of Corporation: 2002 - LOUISIANA
Type of Business: Environmental
Name of Parent Company: Aptim Corp.
Tax I.D. #: 77-0589932

Executive Officers:

Allen Weakley - President
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Financial Operation:

Dawn Aydell, Director, Accounting
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Aptim Environmental & Infrastructure LLC
CONSOLIDATED FINANCIAL STATEMENTS
December 31, 2022 and 2021
With Independent Accountant's Review Report

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