Proposal for Charlotte County

Design - Tiki Point Living Shoreline

Request for Proposal No.20260251 • February 23, 2026 at 3:00 PM

Submitted to Charlotte County

→ The Power of Commitment

Hampton Oaks Business
5904 Hampton Oaks Parkway, Suite F
Tampa, FL 33610
www.ghd.com

February 23, 2026

Charlotte County Purchasing Division
Attn: Selection Committee
18500 Murdock Circle, Suite 344
Port Charlotte, FL 33948-1094

Re: DESIGN - TIKI POINT LIVING SHORELINE (RFP No. 20260251)

Dear Selection Committee

GHD is pleased to submit our qualifications for the Design – Tiki Point Living Shoreline project. We recognize this effort as a high-visibility, regionally important opportunity to deliver a model nature-based shoreline solution along the Harborwalk at the confluence of the Peace River and Charlotte Harbor—approximately 845 linear feet intended to reduce erosion and flood risk, buffer storm impacts, and improve habitat and water quality.

This project is more than a set of plans—it is the next critical step in moving a well-established public-private partnership concept into a permit-ready, constructible design that can be implemented efficiently and transparently. The Jacobs conceptual work and the project's grant framework provide a strong foundation: a seawall-adjacent urban shoreline with existing riprap, naturally recruiting oysters and mangroves, and nearshore conditions where soft sediments and variable depths must be accounted for in a practical, durable design. GHD's team is prepared to carry that foundation forward through 30/60/90/100% design, permitting application packages, independent technical review of monitoring deliverables, and public-facing engagement materials that help build understanding and support.

We also understand the accountability that comes with federally funded work. Our approach is built to support CHNEP and the City of Punta Gorda with consistent coordination, documentation, and deliverable quality—aligning with DEP QA requirements (Chapter 62-160) and the project's Quality Assurance expectations, while ensuring accessible, properly credited outreach products and organized deliverables (including GIS and metadata) suitable for public records.

For over 30 years, GHD has served as a consultant to the Florida Department of Environmental Protection (FDEP) under multiple contracts, giving our team deep familiarity with FDEP SOPs, documentation standards, and review expectations—an advantage for producing QA-consistent deliverables and permit-ready application packages for Tiki Point.

Why GHD is the Right partner for Tiki Point:

→ Living shoreline and hybrid waterfront design expertise

Our Florida-based waterfront team delivers resilient shoreline solutions that integrate habitat function with engineered performance—particularly important for a seawall-adjacent living shoreline intended to extend shoreline protection while improving ecological value.

→ Permitting leadership and grant-ready documentation

We bring deep experience coordinating with USACE, FDEP, and local stakeholders, and we prepare clear, complete permit packages that reduce review cycles. Our team is also experienced in the documentation rigor required for grant-funded projects, including QA-consistent technical deliverables. In addition, GHD's 30+ years supporting FDEP under multiple contracts strengthens our understanding of FDEP SOPs and submittal expectations—helping streamline coordination and reduce rework during permitting and compliance documentation

→ Practical, constructible solutions that reflect site realities

We will "design for settlement" given the soft sediment conditions and incorporate constructability from the start—developing details that are durable and achievable in the field and that align with project preferences for materials and methods.

→ Stakeholder engagement and public education

We will deliver the required two public workshops and outreach products (fact sheets, article, presentation, and educational video) in a way that is easy for the public to understand and clearly tied to project milestones and decisions.

→ Local presence and responsive delivery

With offices across Florida and a team accustomed to frequent coordination and site support, GHD will remain highly responsive to CHNEP, the City, and Charlotte County throughout design and permitting preparation.

Thank you for your consideration. GHD would be honored to partner with Charlotte County, CHNEP, and the City of Punta Gorda to deliver a permit-ready living shoreline design that strengthens coastal resilience, enhances public waterfront amenities, and serves as a replicable model for the region. We look forward to the opportunity to support this important project.

Sincerely,

Melissa Burns, PE
Vice President/Structural Engineer
T: 407 708 6105
E: melissa.burns@ghd.com

Jesse Davis, PE, ENV SP
Project Manager
T: 786.447.7972
E: jesse.davis@ghd.com

Contents

→ Team Proposed for this Project

The Power of Commitment

GHD recognizes and understands the world is constantly changing. We are committed to solving the world's biggest challenges in the areas of water, energy and urbanization.

We are a global professional services company that leads through engineering, construction and architectural expertise. Our forward-looking, innovative approaches connect and sustain communities around the world. Delivering extraordinary social and economic outcomes, we are focused on building lasting relationships with our partners and clients.

Established in 1928, we remain wholly owned by our people. We are 12,000+ diverse and skilled individuals connected by over 160 offices, across five continents – Asia, Australia, Europe, North and South America, and the Pacific region.

Find out more about us at ghd.com

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, advisory, digital and construction services to our clients.

- **We are committed to sustainable development.**
- **We improve the physical, natural and social environments of the many communities in which we live and operate.**

96+ years in operation

135+ countries served

160+ offices worldwide

1.9Ⓑ USD revenue 2024

5 global markets

12Ⓚ people

45+ service lines

- **Providing engineering, environmental, advisory, architecture, digital and construction services**

We rank #30 in the Top 200 Environmental Firms 2024
Ranking published by Engineering News Record (ENR)

- #10 in environmental science
- #13 hazardous waste

A. Background of the Personnel

GHD is proud to present a multidisciplinary team of coastal, structural, civil, and environmental professionals with deep experience in living shorelines, seawalls, and resilient public waterfronts throughout Florida.

A1. Project Manager, Jesse Davis, PE, ENV SP,

brings over 19 years of marine engineering experience, including successful delivery of seawall-adjacent living shoreline projects that must balance constructability, habitat function (e.g., oyster and mangrove elements), stakeholder engagement and multi-agency permitting considerations. Supporting Jesse is a team of technical leads and subconsultants with proven expertise in design, permitting, construction management, and community engagement for complex shoreline and park infrastructure. Please see the following page for more details on our Project Manager's recent experience.

A2. Subconsultants, and other Key Personnel

Colliers Engineering & Design – Surveying and Subsurface Utility Engineers (SUE).

Our team's collective experience includes over 30 completed shoreline and seawall projects in Florida, with a strong record of on-time, on-budget delivery and regulatory compliance. In addition to Colliers Engineering & Design, A.D.A. Engineering (ADA) will support GHD in all post-design services, including constructibility reviews and construction and engineering inspections (CEI). **Colliers Engineering and Design (CED)** is a multi-disciplinary professional services firm with expertise in providing a wide range of professional services including all aspects of Surveying and SUE. They have extensive experience and have been serving the local area since 1984, with eight offices and over 160 employees in Florida. CED has built a great reputation with their clients by focusing on their core values: responsiveness, customer service, quality, accountability, integrity, and safety.

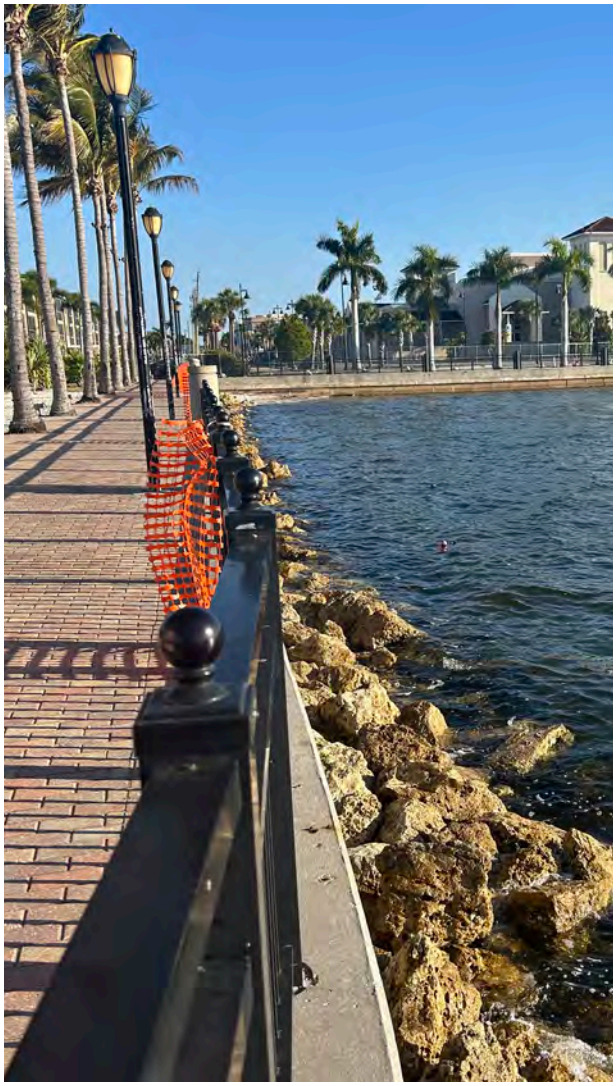
Given their staff location and availability, they will meet the County's expectations for responsiveness and are prepared to immediately provide staff and resources as needed to support this important contract.

The **CED** team is composed of licensed professional geologists, engineers, surveyors, and technical staff with extensive experience on a wide variety of similar contracts. Their services encompass all aspects of public endeavors including local and regional utilities, water resources, parks and recreational spaces, public facilities, roadways, and streetscape design.

A.D.A. Engineering, Inc.* - Constructability Reviews & Construction Phase Services

ADA is a premier engineering and construction management firm with a rich history of delivering innovative solutions in coastal engineering and environmental sustainability by combining engineering expertise with a deep understanding of ecological systems. Since 1981, the firm has consistently delivered professional engineering and construction management services to Municipal, State, and Federal agency clients.

Effective October 1, 2025, GHD has acquired A.D.A. Engineering, Inc., (ADA) and ADA's staff joins GHD's workforce to support projects under the GHD brand. We believe that ADA's long standing local presence and history of project delivery in South Florida, combined with GHD's global network of resources and professionals uniquely positions the firm versus other competitors.



Why Jesse?

- **Experienced.** Lessons learned on over 30+ seawall and living shoreline stabilization projects.
- **Practical.** Hands on experience in all phases of project delivery; field investigations, planning, permitting, design, underwater inspections, and construction.
- **Specialized expertise.** Ocean Engineering degree specializing in marine structures from Florida Institute of Technology (2004). Envision Sustainability Professional (2018).

Project Manager Highlight

Jesse Davis, PE, ENV SP

Jesse has over 19 years of experience in coastal engineering and has provided design, permitting, environmental field assessments, and construction phase services for waterfront development, seawall, and living shoreline projects located throughout the United States (East coast, West coast, and Great Lakes Region), the Caribbean, and South America.

Jesse is ideally suited to manage this project. In addition to his hands-on experience designing and providing construction phase services, he has successfully completed, managed, or is currently managing multi-disciplinary teams for the following waterfront development projects. More details are provided in the project descriptions and Jesse's full resume.

City of Miami
- Morningside and Shorecrest Seawalls and Living Shorelines
- Little River Mini Pocket Park - Seawall, Kayak Launch and Living Shoreline
- Legion Park: Seawall to Living Shoreline Conversion
- South Bayshore Lane Pump Station Outfall Design

Miami-Dade County
- Miami Beach Storm Protection: Planning, Modeling, Permitting and Design Services
- Matheson Hammock Park Marina Seawall Replacement
- County-wide Coastal Model Development

Indian Creek Village
- Top of Seawall Study

University of Florida
- UF Seawall Condition Assessment and Living Shoreline Demonstration

City of Key West
- Bike/Pedestrian Path Concept Study
- Turtle Kraals & C Dock Assessment & Repair Alternatives
- Rest Beach Seawall, SR A1A Shoreline Stabilization

City of North Port
- Jeffrey Lake Seawall Replacement

Ports
- MSC Cruises Terminal Expansion at PortMiami
- Port Everglades Bulkhead Replacement
- Port Everglades Harbor Monitoring Services

Town of Palm Beach
- Mid-Town Seawall Replacement

Marine Corps Air Station Cherry Point, NC
- Seawall Assessment and Living Shoreline Stabilization Project

Lancaster County, VA
- Belle Isle State Park Living Shoreline

Key Project Experience

Fort Pierce City Marina Island Storm Protection

Jesse provided design, permitting, and construction oversight services to reconstruct the City's downtown waterfront after back-to-back impacts from Hurricanes Jeanne and Frances. The project included a 15-acre island breakwater system to protect the marina against 100-yr storm events, 900 LF of seawall, the replacement of the marina docks, and funding through FEMA's hazard mitigation grant program. The innovative network of breakwater islands was authorized by the regulatory agencies as a first of its kind pilot project within the state of Florida with construction finishing in 2015.

The islands have proven successful, with multiple technical awards including. This project was also highlighted by the USACE as an example on how to Engineer with Nature.

This project was also awarded the 2016 ASCE-COPRI Project Excellence Award for large projects.

*See next page for additional information on this project.

Fort Pierce City Marina Island Storm Protection

2016 ASCE-COPRI Project Excellence Award for large projects

Fort Pierce, FL

Client

City of Fort Pierce

Year(s)

2005 - 2015

Term of Engagement

10 years

Project Relevancies

- Seawalls
- Living shorelines
- Public outreach
- State and/or Federal grant funds
- Challenging environmental conditions or unique design requirements
- Innovative solutions or approaches to enhance a project's sustainability or efficiency
- Use of cutting edge technology

The challenge

In 2004, Hurricanes Frances and Jeanne destroyed the marina and damaged the seawall fronting the City's scenic waterfront along the Indian River Lagoon. FEMA's hazard damage mitigation funds needed to be utilized to restore the waterfront and provide protection from a future a 100-yr storm event. Project challenges included minimizing impacts to adjacent resources and obtaining regulatory approvals to fill over 15 acres of open water to accomplish the goals of protecting the area from future storm events.

Our response

The project consisted of constructing a 15-acre island breakwater system to provide wave and current protection. We also reconstructed the marina floating docks and over 900 linear feet of seawall. **The island breakwater system was unique in that it incorporated over 20 acres of environmental enhancements which included 1.28 acres of oyster reefs, 6.26 acres of artificial reef, 2.22 acres of coastal dune habitat, 2.33 acres of shorebird habitat, 8.12 acres of seagrass beds, and 1.54 acres of mangrove habitat.** The project also included the beneficial reuse of 150,000 cubic yards of dredged material.

The impact

The innovative network of breakwater islands was authorized by the regulatory agencies as a first of its kind pilot project within the state of Florida with construction finishing in 2015. The islands have proven successful since then, with multiple technical awards and the Florida Main Street's Honor Award for outstanding public improvement. This project was also awarded the 2016 ASCE-COPRI Project Excellence Award for large projects.

This project was also highlighted by the USACE as an example on how to Engineer with Nature.

→ What sets GHD apart?

Why GHD is the RIGHT choice for this project

A2. Key Personnel

- **Jesse Davis, PE, ENV SP** – Project Manager (19+ years, FEMA/HMGP, Florida coastal projects)
- **Melissa Burns, PE** – Lead Structural Engineer (14+ years, seawall and marine structures)
- **Nancy Zhou, PhD, PE** – Lead Coastal Engineer (10 years, coastal modeling, resilience)
- **Michael Barnett, PE, BC. CE** – Permitting Advisor (former FDEP Bureau Chief, 41+ years)
- **Craig Kruempel** – Environmental Permitting & Resource Surveys (41+ years)
- **Steven Janosik, PE** – Geotechnical Engineer (35+ years, marine foundations)
- **Albert Argudin, CGC** – Constructibility Reviews & Construction Phase Services (48 years of experience overseeing infrastructure projects)
- **Alberto D. Argudin, PE, CGC; LEED AP** – Constructibility Reviews & Construction Phase Services (24 years of professional consulting experience in the construction and engineering industry)
- **Yosef Yip**- Community Engagement (15 Years Stakeholder and Community Engagement)

We are here to serve you

We have built a strong team of qualified professionals with a multitude of expertise.

Waterfront Design

EXPERTS

250+

years of experience

30+

relevant projects

DEDICATED

Resources to meet the County's schedule

B. Resumes

Resumes for all key personnel are included in the ***Appendix A***.
Staff bios are included below.

Victor Tirado, PE
QA/QC

Relevant experience: Over 2 decades of oversight of coastal infrastructure projects ranging from piers to bulkheads, living shorelines, bridges and roadways projects. He has played a QA/QC role for waterfront structural designs, inspections, and structural analyses.

Victor has 21 years of experience in multidisciplinary team management, planning, engineering, and construction. His emphasis is in delivering complex multi-modal transportation and waterfront and marine projects, that range from heavy infrastructure projects to environmental remediation and coastal adaptation projects. Victor has successfully delivered projects that include piers, wharves bulkhead and quay walls, dry docks, large navigation channels, wetland restorations, living shorelines, highway grade separation, bridge and roadways, marine terminal planning, recreational marinas, and site development, among other elements across the world. Victor's international network and skills are an instrumental resource of knowledge in the development of this project. Victor is also a six-year veteran of the United States Navy.

Melissa Burns, PE
Marine Structural

Relevant experience: Florida Professional Engineer with recognized experience in both linear structural design (Bridge) and waterfront structural design (seawall, piers, wharfs). Her expertise lies in integrating proposed structures within existing facilities and conflict solutions in limited areas. Additionally, her expertise lies in leading designs that allow facilities to remain operational during construction.

Melissa is a marine and linear infrastructure structural engineer and project manager. She has 14 years of design and management experience. Her projects have encompassed a wide range of private and public facilities. Projects she's worked on include feasibility evaluations, design, modeling, and computation of structural elements, as well as production detailing of plan sets within all design phases. Melissa works on projects from the preliminary engineering pursuit to the final design of structures for both design-build and conventional projects. She is experienced in both linear infrastructure and coastal projects ranging in complexity from simple structures to multi-phase projects accounting for future-year expansion capacities.

Jon Brent ,PE, SE
Marine Structural

Relevant experience: Inspection and design experience for seawalls and pile-supported waterfront structures; management of maritime and coastal projects; construction support for shoreline infrastrucure improvements including docks, boardwalks, bulkheads, and dune systems.

Jon is a Marine Structural Engineer and Certified Inland Maritime Port Manager with 14 years of design, management, and construction experience in a variety of infrastructure and private facility projects including ports and waterfront structures, high and heavy load cargo terminals, complex drainage and water resources structures, and low-rise buildings. Jon has led the planning, modeling, computation, and detailing of structures for projects subject to a wide range of environmental conditions. Jon's experience also includes facility planning and site layout, 3D modeling and construction drawing development, project specifications, and discipline coordination for new construction, renovations, structural upgrades, and adaptive reuse projects.

Steven Janosik, PE
Geotechnical Engineering & Soil Strengthening

Relevant experience: Experience with geotechnical investigations and settlement analyses; coordination with structural design team; geotechnical engineering design and materials testing, evaluation of seawall failures related to subsidence; and site suitability studies.

Steven has nearly 25 years of experience. He specializes in blending forensic engineering assessments with accompanying expert witness testimony, geotechnical engineering design, and construction materials testing (including threshold inspections of reinforcing steel, pile inspections, and construction vibration monitoring). Steven's forensic engineering expertise is focused on evaluating subsidence-related damage to structures, earthen slope and retaining wall failures, construction vibration damage, and pavement failures. His geotechnical engineering design expertise encompasses sinkhole risk assessment and mitigation, shallow and deep foundation design, pavement design, slope stability analyses, bulkhead and retaining wall design, and site suitability studies.

Nancy Zhou, PhD, PE
Coastal Engineering

Relevant experience: Extensive coastal engineering expertise spanning climate-resilient flood protection, coastal hazard analysis, numerical modeling, and waterfront structure evaluation on major U.S. and international projects.

Nancy has 10 years of professional experience as a Coastal Engineer, working on major coastal and resiliency projects in both the United States and abroad. Her background is rooted in coastal engineering with an emphasis on climate-resilient flood protection systems, coastal hazard and risk assessment, and shoreline stabilization projects. Nancy is experienced in hydrologic and hydraulic analysis, numerical modeling of coastal and oceanic processes, met-ocean data collection and analysis, and the design and evaluation of waterfront and hydraulic structures. Her experience spans feasibility studies and coastal resiliency planning through detailed design, inspection, and environmental impact analysis, supporting complex projects across multiple phases.

Michael Barnett, PE, BC.CE
Permitting

Relevant experience: Extensive marine and waterfront design, over 20 shoreline and seawall projects; numerous seawall replacements (including HMGP-funded); permitting, bid services, public engagement; marine life preservation, benthic habitat surveys.

Michael has over 41 years of experience in coastal engineering. He has led the feasibility, planning, engineering design, permitting, construction, and contract document preparation for beach restoration and nourishment projects, seawalls, living shoreline and muck removal projects in the southeastern US. He has led offshore sand source investigations for restoration and nourishment projects in Florida and managed the construction of a mitigative artificial reef as an element of the Miami Harbor Deepening Project. Michael served as the former chief of the Florida Department of Environmental Protection's (FDEP's) bureau of beaches and coastal systems for nearly eight years.

Jingwei Li, PE
Civil/Stormwater Engineering

Relevant experience: Experience include stormwater master planning, groundwater, and water quality modeling, and extensive experience in environmental assessments and remediation projects.

Jingwei is a professional engineer with nine years of experience, whose primary focus has been on hydrological and hydraulic modeling, groundwater analysis and modeling, stormwater planning, environmental mitigation, water resources and Geographical Information Systems (GIS). She is experienced in analyzing surface water and groundwater data and GIS databases, developing groundwater, hydraulic and hydrological models. Her work history also includes Asset Management, Phase I and II Environmental Site Assessments, Spill Prevention and Countermeasure Control Plans and Stormwater Pollution Prevention Plans. Jingwei possesses skills that give clients confidence that their projects will have an effective outcome.

Craig Kruempel
Resource Surveys and Permitting

Relevant experience: Extensive coastal zone resource planning, permitting, monitoring, and NEPA compliance expertise, including leadership of shore protection, offshore energy, and large-scale reef restoration projects.

Mr. Kruempel has more than four decades of experience providing coastal zone resource planning, documentation, permitting, and monitoring services for public and private sector clients. His expertise includes the development and implementation of comprehensive characterization, monitoring, and restoration programs with a strong emphasis on natural hardbottom and artificial marine habitats, as well as extensive compliance and coordination experience implementing National Environmental Policy Act (NEPA) regulations for federal agency actions. He has served as team leader, principal scientist, and project manager for numerous field investigations, site assessments, and linear projects, including offshore energy proposals, and has overseen shore protection construction efforts such as beach nourishment and dune restoration throughout the southeastern United States. As a consultant to the National Oceanic and Atmospheric Administration, he served as project manager and senior consulting scientist for multiple large-scale reef restoration projects resulting from ship grounding incidents in Puerto Rico and the Florida Keys.

Alberto D. Argudin, PE, CGC, LEED AP
Utilities, Constructability Reviews & CEI

Relevant experience: Experience with design coordination during construction for projects involving drainage outfall capacity increase, resulting in reduced flooding; worked on projects involving seawalls, state and/or federal grant funds, and challenging environmental conditions.

Mr. Argudin has over 48 years of experience overseeing infrastructure projects, specializing in stormwater management, water distribution, sewage collection, transportation, solid waste management, environmental studies, permitting, and construction management. As a Project Manager, he has been responsible for coordinating design, permitting, and construction oversight for municipal, institutional, industrial, commercial, and residential developments. He ensures project schedules, budgets, and regulatory requirements are met while managing multidisciplinary teams to deliver high-quality engineering solutions.

Albert Argudin, CGC
Utilities, Constructability Reviews & CEI

Relevant experience: Experience projects involving seawalls that are funded through state and/or federal grant funds; drainage improvement projects; overseeing CEI projects; seawall raising; design/permitting; and coordinating efforts between multiple disciplines.

Albert Argudin, CGC has 24 years of professional consulting experience in the construction and engineering industry. Albert has served as the project manager for countless roadway and drainage improvement projects throughout Florida. While being diversified in both horizontal and vertical construction projects, he has proven to have the ability and expertise to manage project constraints, such as time and cost, while delivering projects that comply with the construction documents and exceed client expectations.

Yosef Yip, CGC
Community Engagement

Relevant experience: Experience in stakeholder and community engagement informed by urban planning, leading equity-focused partnerships with CBOs and strategic outreach for complex, multi-phase initiatives across transportation, energy, mobility, emergency response, and multimodal projects.

Yosef has more than 15 years of professional experience in stakeholder and community engagement, supported by a strong background in urban planning. He has led the development of strategic outreach plans that foster trust through equity-focused partnerships and improve public understanding of complex, technical projects. Yosef has successfully managed both small- and large-scale initiatives across multiple project phases, demonstrating the ability to coordinate diverse stakeholders while advancing project goals and community outcomes.

Nicholas Fewell, CST
Survey/SUE

Relevant experience: With over 14 years of field and management experience, Nicholas Fewell, brings extensive expertise in leading subsurface utility engineering (SUE) operations for major clients including FDOT, GDOT, Duke Energy, and multiple state and municipal agencies.

Nicholas Fewell, CST I is a SUE manager with over 14 years of field and management experience. He is responsible for leading designating and locating crews to successful completion of assignments. His responsibilities include assisting project managers, serving as client liaison, communicating with utility owners, contacting state “One-Call” systems, and ensuring compliance with all CED safety and subsurface utility engineering operations. Mr. Fewell has worked on various project assignments for numerous various state and local governments/municipalities, such as the City of Charlotte, departments of transportation and other clients such as FDOT, GDOT, LaDOTD, TxDOT, DUKE Energy, Mosaic, Florida Power & Light, TECO Electric, TECO Peoples Gas, Kinder Morgan, Florida Gas Transmission, and Marine and Airport Authorities.

Wyatt Altman, PSM
Survey/SUE

Relevant experience: Survey Project Manager with 15 years of experience leading complex surveying projects, including hydrographic, topographic, and boundary surveys, supported by advanced expertise in digital mapping, LiDAR, and data processing using AutoCAD, Trimble Business Center, and related platforms.

Wyatt is an experienced Survey Project Manager with 15 years of diversified expertise that includes digital imaging and mapping, geodesy, GIS, GPS, photogrammetry, land tenure and cadastral studies, LiDAR, and remote sensing techniques. Mr. Altman as performed hydrographic, ALTA, full topographic, and boundary surveys; subsurface utility locating; and construction layout. He also has expertise performing data processing using AutoCAD, CAice, Trimble Business Center, GeoPAK and Starnet.

11

→ Proposed Management Plan

A. Team Organization

The proposed team assembled for this project has the wide range and depth of experience necessary to effectively address the County's needs. Not only does the GHD Team have the requisite technical capabilities, but all personnel are capable of successfully interacting with the County's staff and management. The strength of the GHD team lies in the expertise and experience of our seasoned professionals. This allows us to efficiently deliver high-quality services in a cost-effective and timely manner.

WHY THE GHD TEAM?

GHD has a broad bench of dedicated and committed staff to support the Charlotte County.

- **80+ maritime and coastal professionals in North America**
- **150+ science and engineering professionals in Florida**
- **4,000+ professionals in North America**
- **12,000+ professionals worldwide**
- **Local regulatory experience and connections**
- **Waterfront design experts**
- **Proven project experience**
- **Practical approach to permitting**
- **Living Shoreline Experts**

QA/QC
Victor Tirado, PE

Project Manager
Jesse Davis, PE, ENV SP

Maritime & Coastal Business Group Leader
Melissa Burns, PE

Field Investigations

Geophysical
John Phillips, PE GHD

Geotechnical Engineering
Steven Janosik, PE GHD
Meeghan Casey, PG GHD
John Phillips, PE GHD

Field Investigations
Nigel Hart, EI GHD
Mustafa Demir, EI GHD

Subsurface Utility Engineering/ Surveying
Wyatt Altman, PSM CED
Nicholas Fewell, CST I CED

Resource Surveys
Craig Kruempel GHD
Jason Garwood GHD

Design Services

Marine Structural
Melissa Burns, PE GHD
Jon Brent, PE, SE GHD
Mohammad Ghiasian, PhD, PE GHD

Coastal Engineering
Nancy Zhou, PhD., PE GHD
Jessica Rakich, PE GHD
Alexandra Baylor, PE GHD

Civil/Stormwater Engineering
Jingwei Li, PE GHD
Ashton Rogers, PE GHD

Environmental Engineering/CAR
Brian Moore, PE GHD
Jeremy Hess, PE GHD

Geotechnical Engineering & Soil Strengthening
Steven Janosik, PE GHD
Meeghan Casey, PG GHD
John Phillips, PE GHD
Robin Moutray, PE GHD

Corrosion Engineering
Jeff Knauer, PE, ME, NACE CP Specialist GHD

Park Planning/Architecture
Tracey Scott, AICP, CNU-A, NCI GHD
Christian Branter, RA GHD

Landscape Architecture
Lucas Piper, PLA, QSD/P GHD

Stakeholder Engagement

Permitting
Michael Barnett, PE, BC.CE GHD
Craig Kruempel GHD

Coordination with Local Stakeholders
Yosef Yip GHD
Lori Coolidge CED

Post-Design Services

Constructability Reviews, and CEI
Albert Argudin, CGC GHD
Alberto D. Argudin, PE, CGC, LEED AP GHD
Marco Biagioni, PE GHD
Xavier Sabando GHD
Waddie D. Ruiz, PE, CGC GHD
Michael Casanova, PE GHD

Legend - GHD's Team

GHD GHD

Colliers Engineering & Design CED

A. Team Organization (continued)

Each phase—site analysis, design, permitting, construction documents, and construction observation—is led by a dedicated technical lead, with the **Project Manager** maintaining overall accountability and direct communication with Charlotte County staff.

1 The process will begin with **site analysis**, including a review of Jacobs conceptual alternatives and agency coordination meetings, baseline ecological assessments, site surveys, condition assessments, hydrodynamic studies, and habitat characterization to inform design decisions.

2 The **schematic design phase** will develop conceptual alternatives that balance shoreline protection, habitat restoration, and community use, followed by a design document phase where selected alternatives are advanced into detailed plans with engineering specifications and ecological enhancements.

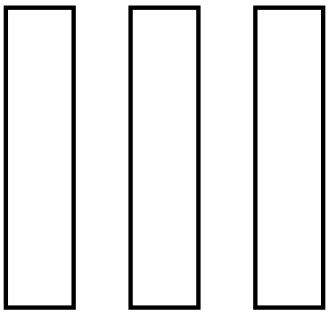
3 During the **permitting phase**, coordination with federal, state, and local regulatory agencies will be undertaken to secure all required environmental and construction approvals.

4 In the **construction document phase**, final technical drawings, bid documents, and construction specifications will be prepared to guide contractors.

5 Finally, the **construction observation phase** will involve on-site monitoring to verify compliance with design intent, permitting conditions, and ecological performance goals, ensuring that the restoration achieves both functional resilience and long-term sustainability.

Roles and Responsibilities of Participants

Roles	Professionals	Responsibilities
Project Manager	Jesse Davis, PE, ENV SP	Single point of contact, responsible for schedule, budget, QA/QC, and client communication.
Technical Leads	Structural, Coastal, Civil, Environmental, Geotechnical	Oversee discipline-specific tasks, coordinate with subconsultants, and ensure technical excellence.
Permitting Lead	Michael Barnett, PE, BC.CE; Craig Kruempel	Manages all agency coordination (FDEP, SWFWMD, USACE, DCR), prepares permit applications, and tracks approvals.
Construction Management	GHD CM/CEI staff	Provides constructability reviews, bid support, and field observation to ensure compliance with plans and specifications.
Survey/SUE	Colliers Engineering & Design	Conducts all required surveys, and utility locates.
Geotechnical Investigations	Steven Janosik, PE	Coordinates with GHD's in-house drill team and laboratory to mobilize to the site and collect/characterize the necessary subsurface data. Coordinates with Colliers and Sunshine 911 to identify potential utility conflicts prior to mobilizing to the site.



→ Previous Experience of Team Proposed for this Project

A. Relevant Work History with Living Shorelines, Coastal Engineering, Stakeholder Engagement, Public Education, and Permitting

Our team has managed projects from concept through construction, **GHD** has delivered over **30 living shoreline, shoreline stabilization, and seawall projects seawall projects** for public agencies in Florida, including municipal parks, FEMA-funded disaster recovery, and coastal resilience upgrades.

Table 1 depicts a brief snapshot of our team's breadth of experience with regard to the specific experience required to successfully complete this project.

Oyster Reef Creation (NOAA/TNC, Hillsborough Bay, FL): Designed and permitted three shallow-water oyster reefs (~0.5 acres) adjacent to a DMMA/spoil island (Spoil Island 2D) under a design-build delivery model, integrating baseline bathymetry/seagrass constraints and stability-based plans/specs to maximize habitat and water-quality benefits in a constrained, multi-partner environment. The constructed reefs were later incorporated into Tampa Bay's standardized oyster restoration monitoring network (including Island 2D sites), reinforcing performance-informed siting/material decisions directly applicable to Charlotte County's living shoreline design and permitting scope.

Matheson Hammock Park Seawall Replacement (Miami-Dade County): A 700-linear-foot FEMA-funded seawall within a historic park integrating living shoreline features. GHD managed phased construction to maintain public access, addressed historic structure proximity and utility conflicts, and achieved FEMA-compliant, 100-year storm protection.

Mid-Town Seawall Replacement (Town of Palm Beach): Designed and delivered 2,700 linear feet of adaptive steel sheet pile seawall along a critical hurricane evacuation route. Through value engineering and precise schedule tracking, GHD met the Town's budget while overcoming utility conflicts and limited existing documentation.

Fort Pierce City Marina Island Storm Protection: A 900-linear-foot seawall and breakwater system for a public marina, funded by FEMA and implemented over a 10-year phased schedule. GHD secured complex regulatory approvals, utilized beneficial dredged material, and delivered an award-winning "Engineer with Nature" project recognized by the USACE.

Legion Park Living Shoreline (City of Miami): Transformed a failed seawall into a resilient living shoreline using FEMA and state grants. GHD expedited design and permitting, mitigated erosion risks, and incorporated ecological restoration and public access improvements.

Collectively, these projects demonstrate GHD's proven capability in designing resilient coastal infrastructure that integrates environmental enhancement, cost and schedule discipline, and innovative shoreline protection tailored to Florida's coastal conditions.

Permitting Experience with Coastal Regulatory Agencies

Our permitting team includes a former FDEP Bureau Chief and staff with decades of experience securing approvals from FDEP, SWFWMD, USACE (including NWP-03), FEMA EHP, and local agencies.

We have successfully navigated complex permitting for disaster recovery, historic resources, and environmental compliance. This includes obtaining agency approvals to convert the Legion Park seawall to a living shoreline within 3 months from NTP.

Table 1. GHD Team Members Involvement in Representative Projects

	Jesse Davis	Melissa Burns	Steven Janosik	Nancy Zhou	Michael Barnett	Brian Moore	Albert Argudin
Morningside and Shorecrest Seawalls and Living Shorelines	✓	✓	✓				✓
Matheson Hammock Park Seawall Replacement and Repairs	✓	✓	✓		✓	✓	
Little River Mini Pocket Park - Seawall, Kayak Launch and Living Shoreline	✓	✓	✓			✓	✓
Legion Park: Seawall to Living Shoreline Conversion	✓	✓	✓		✓	✓	✓
Historic Turtle Kraals and C Dock Assessment	✓	✓	✓	✓		✓	
UF Seawall Condition Assessment and Living Shoreline Demonstration	✓				✓		
Jeffrey Lake Seawall Replacement	✓	✓	✓			✓	
Top of Seawall Study	✓				✓		
Mid-Town Seawall Replacement Design, Permitting	✓	✓	✓		✓		
South Bayshore Lane Pump Station Outfall Design	✓	✓	✓				✓
Port Everglades Bulkhead Replacement	✓		✓	✓		✓	
Port of Palm Beach Bulkhead Cathodic Protection	✓	✓				✓	
MSC Cruises Terminal Expansion at PortMiami	✓				✓	✓	

Approach to Stakeholder Engagement

Putting people at the heart of place

Through our Loveable approach, we are inspiring a new phase in the evolution of community building. An approach that puts people outcomes first, celebrating the varying experiences and uniqueness of place.

By taking time to look at the multi-functional role infrastructure plays in our lives, we can capitalise on existing assets to bring greater social and economic return. Ultimately, this will enable our built environment to better meet the disparate, changing needs of our future communities.

Moving beyond what is liveable

Designing Loveable places means moving beyond tangible metrics of liveability and presumed functionality towards a deeper understanding of how communities interact with place. It's a paradigm shift that looks beyond the 'primary' function of a piece of infrastructure.

GHD's Loveable approach celebrates what makes a place unique, recognising the intangible elements that make us fall in love with the places we live, work and visit. Rather than counting the number of park benches in an area for instance, our approach considers whether people use them and how long they spend there. By taking this approach, we can create vibrant infrastructure that responds to local need and aspiration.

At the heart of what community value

Using a variety of community engagement and behavioural tools, our Loveable approach enables us to collect human-centric data in multiple ways. We then apply the Loveable framework to connect design, form, and function with the lived reality of a place.

This approach is guided by and developed in response to the dual pillars of 'place identity' and 'people's experience'. 'Place identity' celebrates the unique characteristics of place, such as landmarks, areas of social gathering or iconic institutions. 'People's experience' acknowledges the identify of community, the wants and needs of differing demographics, and the rhythms and rituals that play out within a space depending on the time of day or season.

By getting to the heart of what people truly value and want more of, we can build more socially cohesive and desirable communities. This creates added economic benefit; focusing on what people love attracts talent, which in turn attracts investment. Loveable places also lead to elevated environmental outcomes and flow-on socio-economic benefits, such as reduced loneliness and improved community mental health.

"Loveable is about embracing what is different about a place and celebrating those differences. It is about understanding its essence and ensuring that what the community values is at the heart of future planning."

– Michala Lander,
Loveable Lead

Partnering on new solutions

Through meaningful collaboration with our clients, Loveable seeks to harness rich data and new insights to address some of the biggest social and urban planning challenges of our time.

Through Loveable, we will capitalise on existing assets, celebrate the uniqueness of place and foster people's experience to build an inspired and productive future. A future that powerfully connects people with place, enhancing our sense of belonging and enabling our communities to thrive.

ghd.com/FutureCommunities

Our philosophy

Loveable is a solution born out of Future Communities – our commitment to creating thriving places and spaces, together with our clients, that put people first.

Knowing that every community is different, Future Communities helps solve increasingly complex social, cultural, environmental and economic challenges to deliver on our client's strategic ambitions and community aspirations.

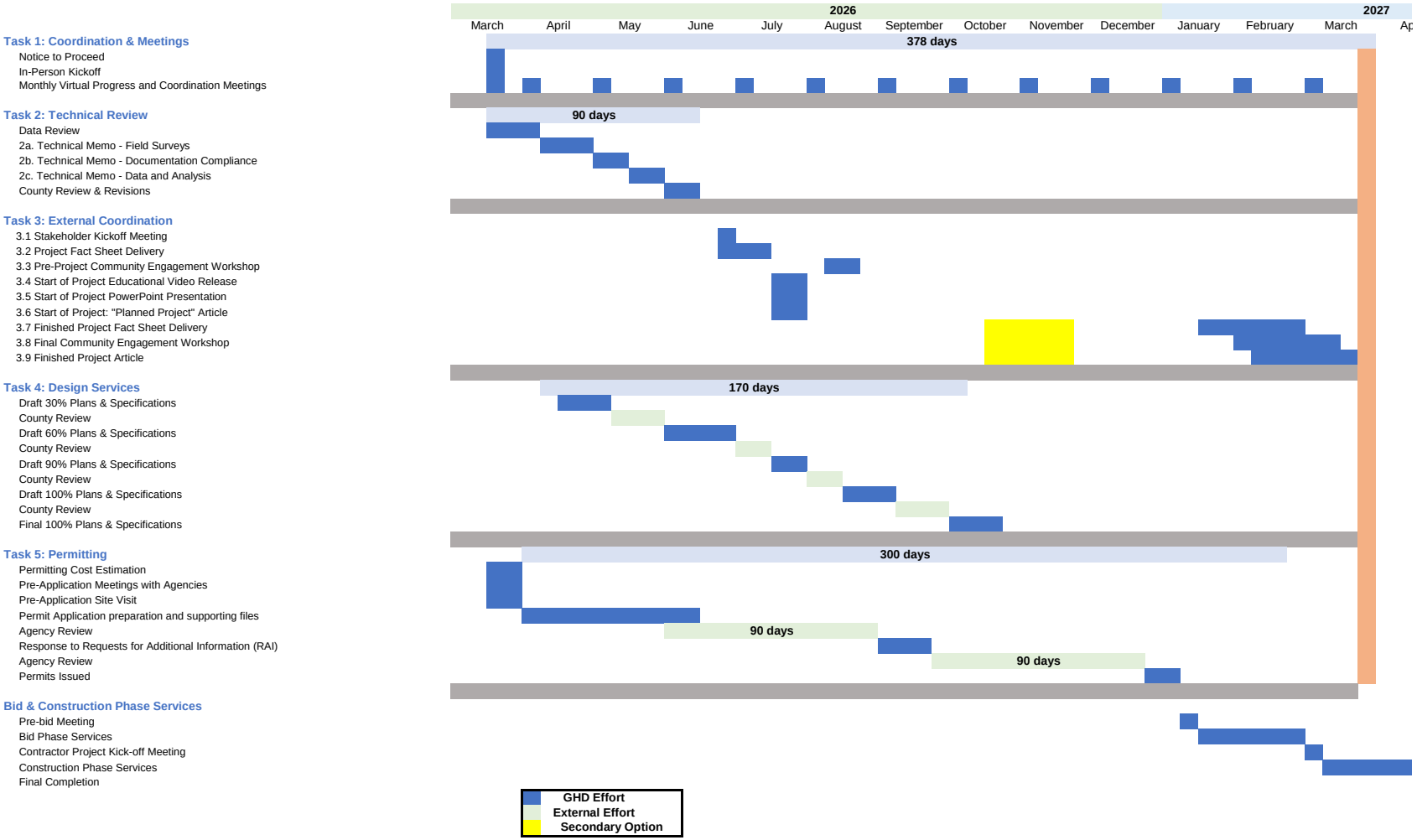
→ The Power of Commitment

IV

→ Project Control

A. Schedule

GHD understands the County's need to restore the shoreline in a timely manner and we are confident we can create a schedule that meets the needs of the County. GHD intends to begin field investigations as soon as possible. GHD employs critical path scheduling, milestone tracking, and regular progress meetings to ensure timely delivery. The Project Manager is responsible for schedule adherence, with support from discipline leads. Our approach includes early field investigations, parallel permitting, and phased deliverables to meet Charlotte County's deadlines. This is demonstrated by our sample project schedule (provided below).



B. Cost

We use detailed cost estimating, value engineering, and continuous budget monitoring. The **Project Manager** and discipline leads review all cost proposals, and our team provides regular updates and recommendations for cost savings without compromising quality or resilience.

The **Project Manager**, in collaboration with the **Project Director**, will oversee all cost control measures, provide transparent reporting, and ensure compliance with budgetary requirements.

Our team has successfully delivered multiple shoreline and coastal restoration projects across Florida within budget by integrating financial monitoring with schedule oversight. This proactive approach ensures that cost variances are identified early and corrective measures are implemented promptly.

Several cost control techniques GHD will use include:

- Preparation of a detailed cost baseline with line-item task allocations.
- Regular budget-to-actual tracking and variance analysis.
- Implementation of earned value management to evaluate cost performance.
- Constructibility and value engineering reviews during design.

GHD incorporates constructability reviews and material sourcing assessments into all of our design projects. Our material and constructability reviews will include the evaluation of eco-friendly and sustainable materials by our team's Envision sustainability professionals (GHD has been a member since 2014 with over 20 professionals certified), suitable staging areas, construction sequencing, evaluation of water depths versus equipment requirements, location of marine resources, maintenance of traffic, and construction phasing considerations to maintain public access. The review will also include evaluating material availability, lead times, and cost data. Many times, these reviews lead to value engineering proposals that save time and money.

C. Recent, Current, and Projected Workload

GHD maintains a robust Florida presence with 150+ professionals statewide and the flexibility to mobilize quickly for this assignment. Our current workload is balanced but our backlog is low, with less than 50% of our team committed beyond the next 90 days. This will enable us to commit senior, project-critical staff from day one—without competing priorities. We actively manage resources across shoreline and disaster-recovery programs to prevent bottlenecks, and our recent delivery record shows we can run multiple coastal restoration efforts in parallel while maintaining schedule discipline. Because our near-term pipeline is lighter, your project will receive priority status, dedicated leadership attention, and sustained technical depth through each phase—from kickoff and field reconnaissance to design, permitting, and construction support.

What this means for you: we can stand up the core team immediately, hold weekly progress touchpoints without over-allocating personnel, and accelerate early milestones (data requests, baseline conditions review, and site mobilization planning) within the first week of NTP—all without pulling staff from other commitments. This staffing posture is designed to de-risk timelines and keep submittals on track.

We have the capacity to meet Charlotte County's schedule and deliverables.

V

→ Present Proposed Design Approach for This Project

1. Proposed Design Methodology

→ Project Background

Tiki Point is a seawall-adjacent urban shoreline along Punta Gorda's Harborwalk where nature-based shoreline features are being advanced to strengthen coastal resilience—reducing flood risk and erosion while improving habitat and water quality at the Peace River/Charlotte Harbor confluence. The project emerged from a collaborative public-private partnership and was supported by prior conceptual work to identify feasible living shoreline alternatives and a defensible implementation pathway. With federal funding secured through CHNEP, this phase focuses on converting the concept into permit-ready, constructible 30/60/90/100% design deliverables.

→ Design Philosophy

GHD's design philosophy for the Tiki Point Living Shoreline is rooted in a simple objective: deliver a permit-ready, constructible 100% design that measurably improves coastal resilience and habitat function while maintaining public waterfront use and meeting grant/QA documentation expectations. This project is intended to implement a nature-based shoreline solution along approximately 845 linear feet at the confluence of the Peace River and Charlotte Harbor, using a living shoreline approach to mitigate flooding risk, reduce erosion, buffer storm effects, and improve habitat and water quality.

GHD will apply a resiliency-first methodology that integrates engineering performance with ecological outcomes and constructability, recognizing that this effort advances an established public-private partnership concept into a design that can be permitted and built efficiently. Our approach is structured to support the RFP deliverables—30/60/90/100% design, permit application package preparation, independent technical review of monitoring deliverables, and stakeholder engagement/public education materials—while coordinating closely with CHNEP and the City of Punta Gorda.

GHD has reviewed the information provided in the County's RFQ and developed a technical approach to successfully and efficiently complete the Project. A summary of this approach is provided in our overall project schedule found in Section IV. Each of these main components is addressed in further detail below.

→ Project meetings and existing data review

A kick-off meeting will be scheduled with GHD and City staff to verify the County's objectives and expectations for the work, review the project scope and schedule for upcoming field investigations, and confirm communications protocols. Since the project schedule is a key element, GHD anticipates receiving from City Staff additional relevant field surveys, studies, and reports that can be used to inform GHD's field investigations.

The following information is specifically requested:

- Record drawings of the existing seawall and adjacent structures
- History of modifications and repairs
- Recent boundary, topographic and bathymetric surveys
- Geotechnical and/or geophysical data
- Utility locates/as-builts
- Condition assessment reports
- Design & performance expectations
- Grant applications/requirements
- Prior agency or stakeholder engagement meeting summaries
- Prior design reports that were not provided as part of this RFP

→ Site investigations

The GHD Team intends to begin field investigations as soon as practical after the Project Kick-off Meeting.

Geophysical/Geotechnical Investigations. Geophysical/Geotechnical Investigations. GHD's project team has completed over 30 similar seawall enhancement and living shoreline projects in the past 10 years. One frequent observation is the presence of voids within the soil behind the existing wall. This can be caused by erosion of sediment along utility channels (called piping) or through/beneath the seawall. Since the Harborwalk is a highly utilized public area, the identification and remediation of any voids is critical to providing a safe long-term waterfront design solution. GHD has the in-house geologists and GPR equipment to determine the spatial and vertical extent of any potential voids (and any existing wall tie-backs) located behind the wall. Geotechnical borings (utilizing GHD's drill rig) will also be strategically located to verify the GPR findings to facilitate an accurate and efficient data collection effort.

Utility Surveys. All existing utilities will be identified and assessed along the seawall and shoreline. These services will include identifying and coordinating with the existing Utility Agency Owners (UAOs), reviewing existing as-built documents, and performing field investigations to verify the spatial and vertical location of the utilities.

Topographic, Bathymetric, Condition Assessment and Debris Surveys. The GHD Team will perform a topographic and bathymetric survey of the Project limits sufficient to satisfy both agencies permitting requirements and GHD design efforts. The survey will also include miscellaneous items that may need to be salvaged and/or replaced during construction activities. A condition assessment and debris survey will be used to assist with final design details and identify visible obstructions that could impact construction activities and lessen the risk of a change order during construction.

Natural Resource Surveys. The State and Federal regulatory agencies require a natural resource survey to be conducted within a 'growing season' window from June 1st – September 30th. Depending on notice to proceed and overall project schedule, the GHD Team may conduct an initial investigation as soon as possible to facilitate structure siting and alternatives analysis.

→ Permitting and design

30% Design. 30% Design. Following the field investigations, and building upon the prior conceptual design work and technical memorandum developed for the Tiki Point at Harborwalk Living Shoreline (including the 2018 Jacobs engineering study and associated concept alternatives), GHD will validate and update the baseline assumptions using the most current survey/monitoring information and stakeholder inputs, then advance the preferred concept to a 30% design level suitable for early agency coordination and public communication.

At 30%, we will (1) confirm the recommended living shoreline approach and limits of work across the ~845 LF reach, (2) refine alignment, segmentation/openings, elevations, and typical sections for the primary nature-based features, (3) identify constructability and access constraints along the Harborwalk/seawall interface, (4) document key design criteria and performance intent (erosion reduction, storm buffering, habitat/water-quality benefits), and (5) establish the permitting pathway and information needs that will be carried into 60% design and completed permit application packages.

Example experience

South Bayshore Lane Pump Station Seawall Outfall Design for the City of Miami

The City of Miami is upsizing an existing drainage outfall that is located within a 15-foot wide easement between two condominium buildings. An existing seawall, constructed in 1965, is located at the outfall terminus into Biscayne Bay. GHD provided geophysical field investigations and expedited 90% design plans and specifications. GHD is awaiting the City of Miami review prior to finalizing the design.

Challenge: The record drawing obtained from the City of Miami did not match field conditions. Thus, GHD performed a GPR survey to determine whether any upland conflicts existed (e.g. tie-backs) and the approximate location of reinforcing, thickness of wall, and concrete cover.

60% Design. 60% Design. Utilizing the existing data review, field investigations, and outcomes of agency coordination, GHD will advance the design to 60% and refine the preferred living shoreline configuration with the objective of minimizing regulatory review iterations and avoiding upland/in-water conflicts. Our resiliency-first approach will (i) reduce transmitted wave energy to the shoreline, (ii) preserve long-term performance by designing for settlement and scour, (iii) avoid/minimize environmental impacts and support habitat function, and (iv) maintain compatibility with public access and the Harborwalk setting..

Design considerations we will include and prioritize:

Wave Climate Management & Shoreline Sheltering. We will apply a project-appropriate exposure and wave-energy evaluation to inform feature sizing, crest elevation targets, and segmentation/openings so the living shoreline provides measurable buffering and erosion reduction while maintaining public waterfront use and aesthetics.

- Crest Elevation & Width Optimization: We will develop alternatives for crest elevation and section width that achieve design targets for safe public use areas, while balancing cost, viewshed, and environmental considerations.
- Footprint and Gap/Opening Spacing. Layouts will be tested to optimize performance across the reach while avoiding navigation/public-use constraints and minimizing impacts to aquatic resources; openings will be configured to support ecological connectivity and reduce unintended scour or erosion.

Structural Stability, Settlement, and Scour Control (Design for Settlement; No Geotextile Preference). GHD will assess subsurface conditions and incorporate settlement allowances into the final section geometry and quantities (e.g., overbuild/sacrificial lift, appropriate base thickness and material sizing, staged placement with survey checks) to preserve intended elevations and performance over time without relying on geotechnical fabric.

The wave sheltering elements ability to mitigate waves will be directly attributed to the system's ability to resist:

- Settlement: Unplanned settlement can lead to larger than expected design conditions. GHD will assess the subsurface soil characteristics and incorporate the anticipated settlement into the final section geometry to preserve design freeboard and performance over time.
- Scour/Washout: Unplanned scour can lead to failure of a coastal protection system and the burial of adjacent natural resources. Therefore, it is important to design a system that resists both extreme event loading and seasonal sediment transport.
- Conducting Hydrologic and Hydraulic (H&H) studies to support grant funded projects as may be required (e.g. through FEMA HMGP).
- Remediation of upland voids to provide a safe long-term waterfront design solution. We will prioritize areas adjacent to highly trafficked walkways or streets.
- Maintaining continuity of service to the public during construction.

Early Stakeholder Input. GHD will coordinate schematic design discussions and support the required public workshops and outreach deliverables so stakeholder feedback is incorporated at logical decision points (e.g., 30% and near 90%) and clearly documented.

Expansion. While Expansion. While we understand the importance of a continuous storm surge and overland flooding barrier, we also understand that a holistic view to a project is key. This means considering the site usage, the proposed elevation, and what the key site constraints are. We have worked for clients in several locations in Florida that have high top-of-wall elevation ordinance requirements that may, potentially, block the view of boaters and beach goers, thereby negating the benefit. To work through this, our team takes an innovative design approach wherebywe design and install a wall that may be extended vertically in the future, without new engineering design or wall replacement. This is done by considering the future loading at the site, both landside and waterside, and sizing the structure as such; however, the top of wall is only constructed to an alternative lower elevation now. Should it be deemed necessary in the future that a higher elevation is desired, the wall may be expanded through an additional cap tied into the existing structure. This type of adaptive design can also be deployed for living shorelines and oyster reefs. The benefits are that it decreases the County's initial capital cost yet allows for future protection with limited additional construction cost. We have implemented this approach on several projects with success.

Permitting. All members of the GHD team have participated in several waterfront projects; therefore, we have relationships with decision–making regulatory personnel who will be involved in this process. This includes staff from the FDEP, Southwest Florida Water Management District (SWFWMD), Florida Fish and Wildlife Conservation Commission (FWC), State Historic Preservation Office (SHPO), USACE, US Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), and US Coast Guard (USCG). As a result, key regulators are already familiar with our expertise and local knowledge, which will facilitate communication and help expedite the review process. Additionally, our team knows what the regulatory agencies require and can help ensure that their concerns are addressed up front.

GHD has reviewed the USACE Nationwide Permits and anticipates that this project may be eligible for authorization under NWP 54 (Living Shorelines) and/or NWP 13 (Bank Stabilization), depending on final feature configuration and impact footprint. Because the Tiki Point project is approximately 845 LF, it exceeds the standard 500-LF threshold for these NWPs; therefore, Corps authorization would require either a District Engineer waiver (based on a written "minimal adverse effects" determination) or an alternative permitting pathway (e.g., an Individual Permit). GHD will coordinate early with USACE (Jacksonville District) and FDEP during pre-application discussions and will refine the design—consistent with project objectives and constraints—to support the most efficient, defensible permitting approach available.

100% Design. The 100% design plans and specifications will be further developed and refined based on liaison with regulatory agencies and feedback from other stakeholders, including the County, on the 60% submittal package.

Bid Phase Services. GHD will prepare a set of plans and technical and environmental specifications, the results of the field investigations, the issued state and federal permits, and a schedule of values for incorporation into the County's 'front end' documents to enable the County to advertise a project ready for construction to prospective bidders. We will ensure document and contractor compliance with any state and/or federal grant procurement criteria.

→ Expertise in regulatory compliance and permitting for coastal projects

GHD GHD brings extensive, hands-on experience navigating the complex regulatory landscape governing coastal construction and shoreline improvements. Our team is highly proficient in securing permits for a wide range of coastal infrastructure projects, including seawalls, bulkheads, retaining walls, drainage systems, and environmentally sensitive shoreline enhancements. We possess in-depth knowledge of the permitting processes and regulatory requirements at the municipal, county, state, and federal levels.

Our coastal design methodology is firmly rooted in a comprehensive understanding of Florida's regulatory framework. This includes the State of FDEP's Environmental Resource Permitting (ERP) process, the USACE's Regulatory Request System (RRS) and Federal regulations, and the Water and Navigation Regulations set forth by Charlotte County. We also stay current with local codes, including the recently updated County's Code of Ordinance (2024-02), ensuring compliance in the design and implementation of seawalls and other shoreline stabilization structures. GHD is also familiar working on projects located in Outstanding Florida Waters and within Aquatic Preserves in Florida and understand the requirements for working in these designated areas.

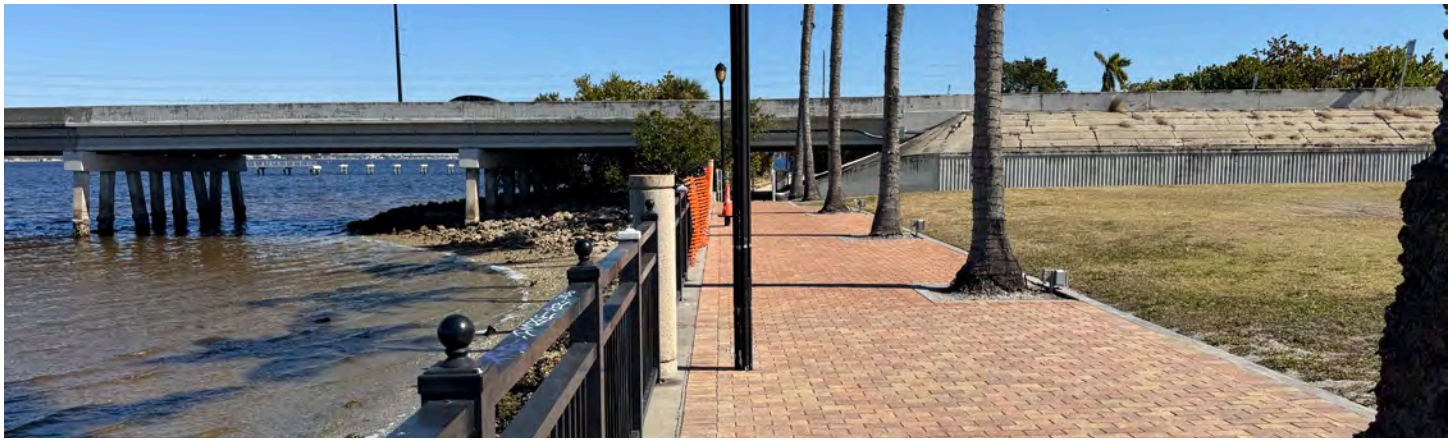
With a strong track record of delivering successful coastal infrastructure projects throughout Florida, the GHD team has established longstanding, productive relationships with key regulatory personnel. These relationships foster direct communication and mutual trust with decision-makers at permitting agencies, enabling us to anticipate and resolve potential issues early. As a result, we are well-positioned to accelerate the permitting timeline, reduce delays, and streamline the approval process for our clients.

Upon completing initial site investigations, we proactively engage with regulatory bodies through pre-application meetings. These early consultations with agencies such as FDEP, USACE, and the Charlotte County Environmental Management Division allow us to outline project scope, discuss potential environmental impacts, and address any preliminary concerns. This strategic engagement sets the stage for more efficient formal application submittals and helps ensure that our projects are well-received during the review phase.

GHD provides comprehensive in-house capabilities for preparing, submitting, and managing environmental permit applications. Our team has successfully secured hundreds of permits for waterfront infrastructure—from local municipal approvals to complex federal authorizations—across diverse jurisdictions in the United States. One recent example of our success includes obtaining regulatory approval for a high-profile project with the City of Miami to convert a traditional seawall into an ecologically beneficial living shoreline at Legion Park. We received the regulatory authorizations and implementation completed in just 3 months, additional details on the project is in Section B: Project Experience.

Each member of our team has a rich background in waterfront design and permitting, bringing decades of cumulative experience to the table. Through this experience, we have cultivated strong working relationships with representatives from a broad spectrum of regulatory agencies, including:

- FDEP
- Environmental Resource Permitting
- Aquatic Preserves Program
- FWC
- SHPO
- USACE
- USFWS
- NMFS
- USCG



2. What problems do you anticipate and how to you propose to solve them?

1. Permitting Complexity and Regulatory Coordination

Problem

Multiple agencies require detailed environmental documentation and compliance with grant standards.

Solution

We will initiate early pre-application meetings and maintain a consolidated permit matrix to track requirements. Our design will adhere to regulatory standards for public waterfront facilities (e.g. FDEP pier elevation and shading criteria) and integrate grant driven criteria, including level of service and flood resilience.

2. Riparian Rights / Ownership

Problem

The project frontage includes a mix of private uplands (hotel parcel), a public Harborwalk easement, and work extending waterward of the seawall where sovereign submerged lands and riparian rights may require specific authorizations; unclear permit applicant authority, access rights, or parcel-by-parcel riparian control could delay permitting and design finalization.

Solution

We will confirm parcel boundaries/riparian lines and easement limits and coordinate with the County during the site investigation phase so permit submittals/approvals are not delayed by last-minute real property questions.

3.Exposure and Wave Climate at a Projecting Corner

Problem

The preliminary design notes greater exposure and deeper conditions near the projecting corner of the seawall, suggesting a localized increase in wave energy.

Solution

We will use site-specific wave/current assessment (scaled to the project budget & needs) to optimize feature orientation, spacing, crest elevations, and stability so that energy reduction and habitat protection are reliable across the full 845 LF reach.

4. Navigation / Marina Interface and Public Use Compatibility

Problem

Marina activity and maneuverability as a constraint influencing design geometry.

Solution

We will coordinate early with project partners to confirm navigational constraints and maintain appropriate setbacks and openings, while ensuring the living shoreline improves aesthetics and supports Harborwalk public usestability so that energy reduction and habitat protection are reliable across the full 845 LF reach.

5. Soft Sediments & Settlement Risk

Problem

The preliminary design alternatives report identified soft, organic nearshore sediments that can drive settlement and loss of crest/control elevations for placed stone/reef features. Stakeholders preference is to avoid geotechnical fabric which removes a common separation approach for weak subgrades.

Solution

We will "design for settlement" by incorporating settlement allowances into lines-and-grades and quantities (e.g., thicker stone leveling/base courses, appropriate stone sizing, overbuild/sacrificial lift to maintain target crest elevations, and segmented features that remain functional with differential settlement), paired with staged placement and survey checks so elevations can be tuned during construction without relying on fabric.

6. Cost Control and Market Volatillity

Problem

Rising material and labor costs can impact budget compliance.

Solution

We will apply value engineering principles and validate our OPC's through marine contractor reviews to ensure realistic pricing. We can also develop a plan that preserves multiple alternatives and bid options to provide the most cost-effective price that meets the County's resilience and environmental goals.

7. Storm Resilience and Future Adaptation

Problem

Increased frequency of extreme weather events and sea level rise.

Solution

The design alternatives will incorporate adaptation elements to improve long-term durability and reduce the need for costly post-storm repairs.

3. Describe Innovative Approaches in Production and Design

→ Constructability Reviews

During the initial stages of every project we perform, our Team conducts a risk assessment and engages early on with proposed contractors to ensure we are addressing all the stakeholders concerns and goals. GHD reviews the design, materials, budgets and schedules to ensure the project is practical and constructable. This same approach was used on a recent project at Matheson Hammock Park.

→ Risk assessment and mitigation

Understanding each site's requirements, constraints, and existing conditions is paramount to the site's successful design and construction. After our initial investigations and review, we will identify site risks before we start the design process. Identified risks may include existing structures such as seawalls in compromised conditions and residential and commercial buildings. These structures pose site access limitations for field investigations (including geotechnical, GPR, and surveys) as well as construction. Our team also makes environmental considerations, noting seagrass, native species, or potentially compromised site materials.

This data will go into the overall project matrix. The matrix considers efficient design groupings and will ensure that the design is dictated by the final construction requirements. For example, a site may have an existing outfall and nearby residential structures. Our proactive design would consider seawall materials that may be installed with low-vibration methodologies (such as the press-in sheet pile method). These methodologies would limit disruption to the public and nearby residents.

Example experience

A 3D Point Cloud was collected and developed for the recent Matheson Hammock Park Seawall Replacement in conjunction with a detailed utility survey. The 3D Point Cloud tool allowed the team to determine a wall alignment with the fewest potential impacts on upland utilities during seawall construction and allow for continuity of service to the existing marina. This information also helped inform the seawall selection type during the early conceptual design phase, noting additional utility rework costs that would have occurred if a different wall type had been designed. GHD will employ this same methodology on this project.

GHD also used 3D point cloud to assess non-traditional construction methodologies including the use of a non-vibratory, press-in method adjacent to the historic buildings, footer, and awnings. GHD was able to confirm this method would not conflict with other site constraints and would reduce vibrations to less than the FDOT specified

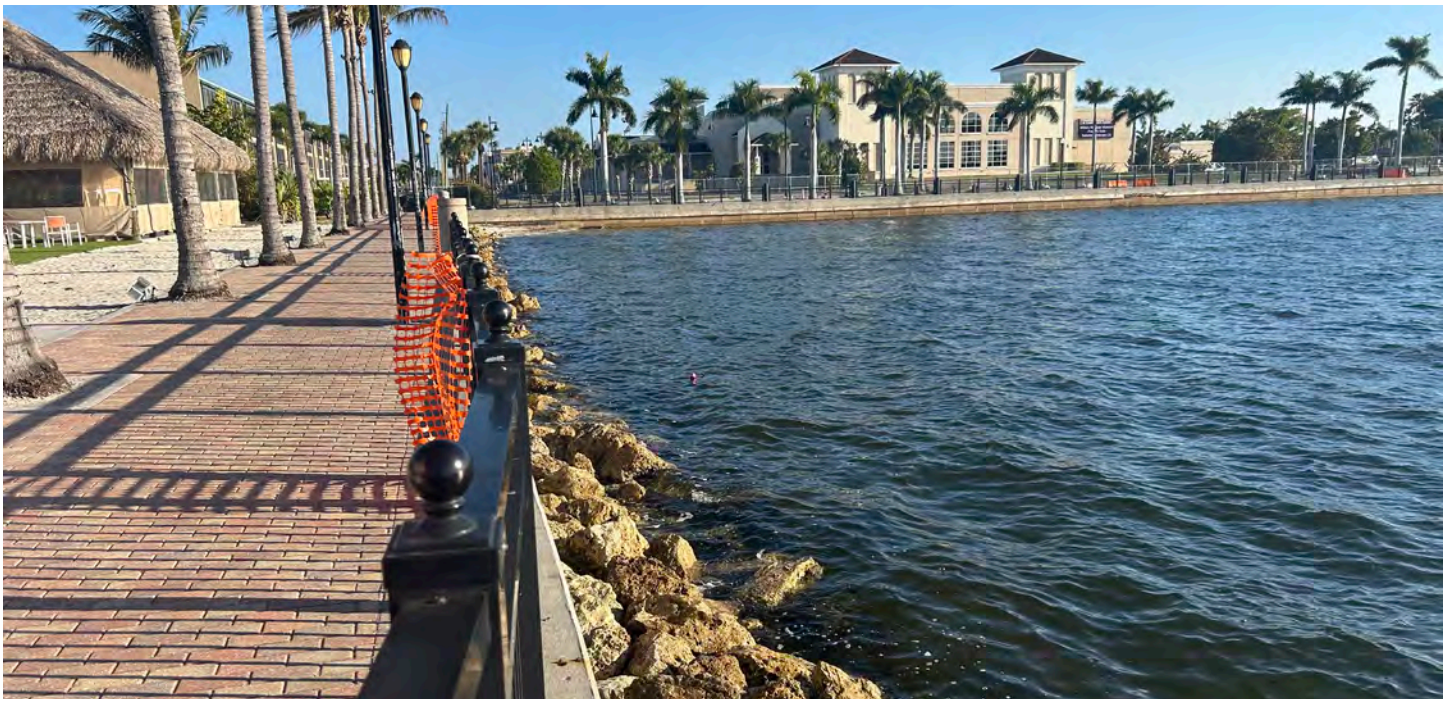
3. Describe Innovative Approaches in Production and Design (continued)

→ **Hybrid Shoreline Solutions:** Combining living shoreline features with traditional seawalls is becoming an increasingly favored strategy for both waterfront properties and public infrastructure to increase resiliency and ecological value. This hybrid approach not only fosters or restores natural habitats, but also enhances water quality, reduces wave impact, and helps prevent shoreline erosion. By incorporating nature-based solutions into conventional coastal defenses, these designs improve resilience—bolstering structural protection, addressing sea level rise, and limiting the discharge of harmful runoff into coastal waters.

For any project situated along coastal areas or inland bays, a key early step is assessing the extent, condition, and type of existing marine resources within the project site. This process will guide the approach for the County's Bayshore Live Oak Shoreline project.

- **GHD partnered with SIMS and the Reef Design Lab in 2018 to design Living Seawall tiles** that are now installed across multiple continents. These tiles can be installed on both new and existing walls. The tile forms are 3D printed and cast by the contractor on site. As a designer of these innovative tiles, GHD has the unique experience and ability to provide customized solutions that meet both the ecological and aesthetic expectations of the County and its stakeholders. GHD also works with several other vendors that provide Living Seawall solutions; including KindDesigns whom has 3D printed seawall options.
- **GHD is currently designing a nearshore segmented reef breakwater system** and is evaluating the use of two different material types; quarried limestone boulders and SEAHIVE units developed by the University of Miami (UM). The SEAHIVE unit sections will be developed using physical model tests at UM's Sustain Laboratory.
- **Mangroves.** The key to installing mangroves and native vegetation for coastal restoration is planting in the correct location and at the correct elevation. The transitional upland coastal strand can also be planted with native species, such as railroad vine, beach creeper, and spartina to assist in stabilizing the upland sediments.

→ **Adaptive Design:** While we understand the importance of a continuous storm surge and overland flooding barrier, we also understand that a holistic view to a project is key. This means considering the site usage, sea level rise, proposed elevation, and what the key site constraints are. Every project requires GHD to consider the future loading at the site, both landside and waterside, and sizing the structure as such; however, the top of wall is only constructed to an alternative lower elevation now. Each design must consider a range of coastal processes, including the effects of severe storms and elevated water levels, sea level rise, winds, tides, and currents.



VI

→ Present Examples of Recently Accomplished Similar Projects

A. Relevant Project Examples

GHD understands the unique challenges facing the County and recognizes the importance of thoroughly understanding the City's preferences and needs for project delivery and efficient communication. We have provided the projects listed on the next page in the table to demonstrate our qualifications and our staff's breadth of experiences, along with detailed project summaries within this section.

Rendering examples

GHD has extensive experience in providing design and consulting services for with renderings across North America. Our expertise encompasses a wide range of services and here are some examples below.

City of Miami - Legion Park, Seawall to Living Shoreline Conversion

Scope: Failed seawall conversion, FEMA/State grant, rapid agency coordination (3 month approvals).

Schedule/Cost Control: Expedited stabilization, minimized upland impacts.

Challenges/Solutions: Erosion, stakeholder engagement, ecological enhancement.

Delivery: Living shoreline, habitat restoration, public access.

Miami-Dade County PROS - Matheson Hammock Park Seawall Replacement

Scope: 700 LF seawall, FEMA HMGP, historic park, living shoreline integration.

Schedule/Cost Control: Delivered within FEMA budget, phased construction to maintain public access.

Challenges/Solutions: Historic building proximity, utility conflicts, adaptive wall elevation.

Delivery: Met 100-year storm protection, FEMA compliance, stakeholder aesthetic requirements (preserve sightline, oolitic limestone facade, preserve oyster covered riprap).

Relevant Experience

Similar Projects

	Seawalls	Living Shorelines	Public Outreach	State and Federal Grant Funds	Challenging Environmental Conditions or Unique Design Requirements	Innovative Solutions or Approaches to Enhance a Project's Sustainability or Efficiency	Construction Phase Services
Oyster Reef Creation (Nature-Based Shoreline Habitat)	✓				✓	✓	✓
Morningside and Shorecrest Seawalls and Living Shorelines	✓	✓		✓	✓	✓	
Matheson Hammock Park Seawall Replacement and Repairs	✓		✓	✓	✓	✓	✓
Little River Mini Pocket Park - Seawall, Kayak Launch and Living Shoreline	✓		✓	✓	✓	✓	
Legion Park: Seawall to Living Shoreline Conversion	✓	✓	✓	✓	✓	✓	
Living Seawall Tile Design - SIMS + Reef Design Lab	✓	✓	✓		✓	✓	✓
UF Seawall Condition Assessment and Living Shoreline Demonstration	✓	✓			✓	✓	
Jeffrey Lake Seawall Replacement	✓				✓		
Indian Creek Top of Seawall Study	✓		✓	✓		✓	
Mid-Town Seawall Replacement Design, Permitting	✓		✓		✓	✓	
South Bayshore Lane Pump Station Outfall Design	✓			✓	✓	✓	✓
Historic Turtle Kraals and C Dock Assessment	✓		✓		✓	✓	✓
Port Everglades Bulkhead Replacement	✓				✓	✓	
Port of Palm Beach Bulkhead Cathodic Protection	✓				✓	✓	
MSC Cruises Terminal Expansion at PortMiami	✓				✓	✓	✓

Oyster Reef Creation (Nature-Based Shoreline Habitat)

Tampa, FL

Project highlight

- Nature and habitat-based solution
- Water quality improvement
- Local environmental permitting

Client
NOAA (Client) in partnership with Audubon of Florida
2900 Oak Avenue
Tampa, FL 33133

Year(s)
2013-2015

Term of Engagement
2 Years

Value
~$250k

Project Relevancies

- Living Shoreline Incorporating Oyster Habitat
- Challenging Environmental Siting Conditions
- Incorporated stakeholder engagement and constructability reviews early

Mission
GHD was retained to deliver a nature based shoreline habitat project that maximizes oyster reef acreage in a constrained estuarine setting to support water quality improvement and shorebird foraging/nesting habitat, while producing permit ready, construction-ready engineering deliverables suitable for design build execution.

The Challenge

This project was implemented adjacent to Port Tampa Bay's Spoil Island 2D dredged material placement area (DMMA/spoil island complex), a setting characterized by restricted access, sensitive ecological resources, and operational constraints typical of working waterfronts. Key challenges included:

· Maximizing habitat footprint (three reefs totaling ~0.5 acres) while fitting within shallow intertidal/subtidal zones and avoiding/working around sensitive resources (e.g., seagrass/mangroves).

· Designing reef features to remain stable in an exposed estuarine environment where wind waves and vessel wake energy can drive shoreline erosion and structural displacement.

· Meeting construction constraints in a restricted bird sanctuary environment with seasonal and protected species considerations influencing means/methods and sequencing.

Our response
To meet aggressive design build delivery needs, the team translated habitat objectives into permit ready, constructible engineering deliverables while coordinating closely with agency, nonprofit, and implementation partners and managing scope to stay aligned with a defined budget and schedule.

· Stakeholder/partner coordination: Coordinated within a defined multi partner team structure that included NOAA as project lead, Audubon of Florida, regulatory agencies (including FDEP), protected species observers, and a marine contractor — to ensure design decisions reflected permitting constraints, constructability realities, and environmental compliance expectations.

· Baseline data integration to refine footprint and elevations: seagrass mapping, sediment sampling, and bathymetry were used to support siting, avoidance/minimization, and constructible geometry.

· Budget aware design optimization: Managed design scope and material

selection to balance habitat maximization with defined project budget constraints, prioritizing approaches that achieved the greatest habitat footprint per unit cost while maintaining performance and constructability under design build delivery.

· Engineering design for stability and longevity: a documented design basis included wave/stability considerations and material sizing/gradation requirements to help ensure reef persistence under design storm conditions.

· Design build readiness: translated design criteria into buildable plans and specs and aligned details with marine construction means/methods (e.g., barge based access and placement), supporting efficient mobilization and field execution.

· Permitting support in a multi stakeholder context: produced permit-ready deliverables appropriate for agency review in a sensitive, restricted-access shoreline habitat setting where interagency coordination and compliance are critical.

Our response

· Habitat creation at scale: constructed three shallow-water oyster reefs totaling ~0.5 acres to improve ecological function and nearshore productivity in Hillsborough Bay.

· Demonstrated a replicable model for working waterfront "nature-based" restoration: The project showcased how to move from goal (maximize reef area) to built outcome in a constrained estuary—using a structured design and implementation process that later monitoring efforts used as part of a broader evidence base for what works in Tampa Bay oyster restoration.

· Nature based resilience co benefits: oyster reef features provide habitat complexity and can reduce near-shore energy while supporting water quality benefits consistent with oyster reef ecosystem services.

· Transferable relevance to Charlotte County living shoreline delivery: demonstrated end to end capability to develop permit-ready engineering plans for a nature-based shoreline solution, informed by field constraints and implemented under a schedule-driven delivery approach.

The Impact

· **Habitat creation at scale:** constructed three shallow-water oyster reefs totaling ~0.5 acres to improve ecological function and nearshore productivity in Hillsborough Bay.

· **Demonstrated a replicable model for working waterfront "nature-based" restoration:** The project showcased how to move from goal (maximize reef area) to built outcome in a constrained estuary—using a structured design and implementation process that later monitoring efforts used as part of a broader evidence base for what works in Tampa Bay oyster restoration.

· **Nature based resilience co benefits:** oyster reef features provide habitat complexity and can reduce near-shore energy while supporting water quality benefits consistent with oyster reef ecosystem services.

· **Transferable relevance to Charlotte County living shoreline delivery:** demonstrated end to end capability to develop permit-ready engineering plans for a nature-based shoreline solution, informed by field constraints and implemented under a schedule-driven delivery approach.

Morningside and Shorecrest Seawalls and Living Shorelines
Miami, FL

Project highlight
- Preservation of scenic views
- Continuity of service to marina
- Sensitive and historic upland structures
- Design to highlight habitat and biodiversity

Client
A.D.A. Engineering, Inc.
8550 NW 33rd St.
Suite 202
Doral, FL 33122

Point of Contact
Albert Argudin Jr, CGC
Vice President
T: 786.382.9046
E: aargudinjr@adaeng.net

Year(s)
March 2024 – Ongoing

Term of Engagement
Ongoing

Value
$190,000

Project Relevancies
- Seawalls
- Living shorelines
- State and/or Federal grant funds
- Challenging environmental conditions or unique design requirements

Mission
The City of Miami (City) called on GHD to plan how to raise or replace six seawalls in the area. The seawalls are 750 linear feet and have top of cap elevations of ~3.5 feet NAVD-88. Our team was also tasked with designing new paths along the public right-of-way (ROW).

The challenge
One challenge that we face is the compressed timeline required for the project. The work on the six seawall locations is funded through multiple grants and bonds that require construction to begin by the end of 2024. We also need to ensure that our design helps promote biodiversity.

Our response
GHD's in-house equipment (ground penetrating radar, geotechnical drill rig, and laboratory) and expertise will provide turn-key services to facilitate timely and cost-efficient field investigations, design, and permitting.

We are conducting above and below-water inspections using the ASCE Manual of Practice 130 (waterfront facilities inspection and assessment) rating system. The system will assist us in systematically documenting inspection findings and recording the relevant attributes of any defects. We'll also use our findings to estimate information like the remaining design life of the seawalls. The damage observations at each region will provide critical inputs into a basic structural analysis (BSA) that will be used to determine whether the seawall is capable of being raised or requires replacement. Should the BSA determine the seawall is capable of being raised, GHD will perform ground-penetrating radar (GPR) and material testing to locate any conflicts tiebacks the material properties of the existing seawall panel and cap.

The Impact
GHD's coastal and structural engineers are working to provide Miami two design options. We will also give them an opinion of probable construction cost for each of the 6 seawalls. The opinion will advise Miami about whether to raise or replace the existing seawalls. Our services will also provide living shoreline enhancements, including shoreline stabilization using native plantings and mangroves.

Matheson Hammock Park Seawall Replacement and Repairs Miami, FL

Project highlight
- FDEM HGMP project
- Preservation of scenic views
- Continuity of service to marina
- Sensitive and historic upland structures
- Ooltic tile wall treatment to match existing park/South Florida Aesthetic

Client
Miami-Dade County Parks, Recreation & Open Spaces Department (PROS)
275 NW 2nd Street
5th Floor, Suite 553
Miami, FL 33128

Point of Contact
Duane Kopp, PE
Construction Manager 2
T: 305.755.7954
E: duane.kopp@miamidade.gov

Year(s)
2021 – Ongoing

Term of Engagement
Ongoing (design and permitting completed)

Value
$494,231

Project Relevancies
- Seawalls
- Public outreach
- State and/or Federal grant funds
- Challenging environmental conditions or unique design requirements
- Innovative solutions or approaches to enhance a project's sustainability or efficiency
- Use of cutting edge technology

Mission
GHD was recruited to replace a seawall on the upland side of a marina to combat sea level rise. This project includes the replacement of approximately 700 linear feet of seawall on the upland side of a marina to mitigate sea level rise and sunny day flooding events that limit public enjoyment of the iconic Matheson Hammock Park (Park). The seawall replacement project is the first component of a broader plan to mitigate frequent flooding and enhance the resiliency of the Matheson Park and its critical and historic infrastructure, which has been open to the public since 1930.

Matheson Hammock Park includes a 243-slip marina, restaurant, large wading lagoon and beach, mangrove trails, and numerous historic buildings and structures constructed of Miami's politic limestone.

The challenge
Critical design and construction challenges include providing a solution that minimizes vibration and impacts to a historic building, maintaining power and water access to the marina facilities during construction, planning accommodations for future park projects, and developing alternatives that provide 100-yr storm protection (per the FEMA Hazard Mitigation Grant funding guidelines) while preserving scenic view sheds and accessibility.

Our response
GHD performed a hydrology and hydraulics study to determine an optimum wall alignment and cap elevation that provides the appropriate level of protection and adhere to the FDEM HGMP grant requirements. The structural analysis will consider all challenge components to provide for a resilient and adaptable wall design. Our team reviewed several alignments and wall alternatives to determine the best solution for the client and meet the global goal of the project.

The expandable wall elevation is a key component of the project. It is assumed that the wall design life will outlive current sea level rise projections. Therefore, to allow for an interim wall height, GHD designed for a full future height wall loading that may expand on immediate construction at a later date. This allowed the park to preserve its scenic view shed. GHD also included customized flood gates to avoid reconfiguring ADA access to the marina docks.

The Impact
Our selected design will protect the Park's infrastructure from a 100-yr storm event. The seawall will also meet the guidelines of FEMA's Hazard Mitigation Grant Funding Program.

Little River Mini Pocket Park – Seawall, Kayak Launch and Living Shoreline

Miami, FL

Project highlight

- Preservation of sensitive historic species
- Consideration of aesthetic and practical area use
- Continuity of service to marinaSensitive and historic upland structures

Client
City of Miami
444 SW 2nd Ave
Miami, FL 33130

Point of Contact
Marisol Martinez Salazar, MBA-PMP
Project Manager
T: 305.416.1219
E: marmartinez@miamigov.com

Year(s)
October 2023 – Ongoing

Term of Engagement
Ongoing

Value
$250,000

Project Relevancies

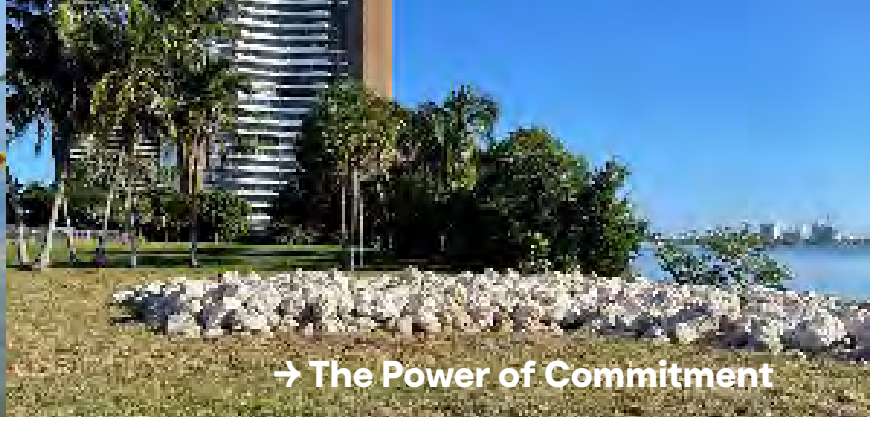
- Seawalls
- Public outreach
- State and/or Federal grant funds
- Challenging environmental conditions or unique design requirements
- Innovative solutions or approaches to enhance a project's sustainability or efficiency

Mission
The City of Miami (City) needed to build a new seawall in Little River. The City called on GHD to review another consultant's seawall design. The design needed to extend the seawall to provide flood protection across the park's entire shoreline. The design also needs drainage improvements to accommodate a future pump station and upsized outfalls. Our team needed to develop construction plans and specifications for a new seawall, kayak launch, and mangrove shoreline along the Little River.

The challenge
The project site contains historic mangroves and weak subsurface soil conditions 30 feet below the existing grade. It also includes a highly organic and compressible peat layer within the upper 10 feet.

Our response
GHD mobilized our in-house drill rig to confirm that the weak subsurface conditions extended along the entire proposed seawall alignment. We re-designed the seawall to provide greater overall stability and constructability. Our efforts resulted in a smaller overwater footprint to decrease the time required to obtain regulatory authorizations. GHD made design changes that included changing the seawall type from a concrete pile and panel to a steel sheet pile wall. This design change minimized the potential for sediment transport into the Little River Canal by extending the pile tip elevations to below the weak subsurface soil conditions, which does not require excavation of these soils or removal of the existing wall during construction. Furthermore, the steel sheet pile could be installed within 18 inches of the wet face of the existing wall to facilitate a more timely regulatory review.

The Impact
GHD is working alongside the City and the regulatory agencies (such as DERM) to develop a design change that meets the City's waterfront design guidelines, provides the public with access to a kayak launch, and retains the historic mangroves and natural living shoreline.



Legion Park: Seawall to Living Shoreline Conversion

Biscayne Bay, Miami, FL

Project highlight
- Erosion protection
- Preservation of native species
- Rapid agency coordination

Client
City of Miami
444 SW 2nd Ave
Miami, FL 33130

Point of Contact
Keith Ng
Project Manager
T: 305.619.2368
E: keithng@miamigov.com

Year(s)
December 2022 – Ongoing

Term of Engagement
Ongoing

Value
$112,000

Project Relevancies
- Seawalls
- Living shorelines
- Public outreach
- State and/or Federal grant funds
- Challenging environmental conditions or unique design requirements
- Innovative solutions or approaches to enhance a project's sustainability or efficiency

Mission
Convert a failed seawall into a living shoreline that promotes biodiversity in Biscayne Bay.

The challenge
The City of Miami (City) engaged GHD in December 2022 to perform a third-party engineering assessment of a partially constructed seawall. The City wanted to learn how to stop the newly-excavated uplands from eroding. Prior to GHD's involvement, the City's contractor got approval to excavate the adjacent uplands as part of installing 24ft precast concrete seawall panels. The excavation created a deepwater pool that was tidally connected to Biscayne Bay. The pool allowed seasonally high water levels and waves to start eroding the uplands.

Our response
GHD completed our engineering assessment within two weeks. To assess the seawall, GHD performed a drone aerial and high-resolution 3D point cloud survey to document the existing conditions of the site. We engaged stakeholders from Division of Environmental Resources Management (DERM), the Florida Department of Environmental Protection (FDEP) and the US Army Corp of Engineers (USACE) to develop a plan that would stabilize the eroding uplands using living shoreline techniques. The plan also included protecting adjacent mangroves during construction. We recommended that Miami remove the panels and stabilize the excavated uplands.

The impact
GHD worked alongside the City, the regulatory agencies (DERM, FDEP, and USACE) and the contractor to develop an expedited stabilization plan. The plan seeks to protect existing mangroves within the project area, stabilize the eroding shoreline, provide habitat and promote biodiversity within Biscayne Bay The regulatory agencies approved our plan to stabilize the site in March of 2023.

GHD provided the following in-house services on this project:
- Coastal, structural and geotechnical engineering
- Geotechnical sample collection & characterization at GHD laboratory
- Environmental sample collection and analyses
- Construction phase services

Living Seawall Tile Design - SIMS + Reef Design Lab

Sydney, Australia

Project highlight
- Nature based solution
- Preservation and support for sensitive local species habitat
- Aesthetic and practical design

Client
Sydney Institute of Marine Science (SIMS)
19 Chowder Bay Road
Mosman NSW 2088

Point of Contact
Kate Parsons
Development Manager
T: +61 427 697 868
E: kate.parsons@sims.org.au

Year(s)
2018 - 2024

Term of Engagement
6 years

Value
Not applicable

Project Relevancies
- Seawalls
- Living shorelines
- Public outreach
- Challenging environmental conditions or unique design requirements
- Innovative solutions or approaches to enhance a project's sustainability or efficiency
- Use of cutting edge technology

Mission
SIMS mission is to help seawalls support biodiversity as much as they protect our society. The goal of the project was to use the seawalls in Sydney to increase the ecological value of artificial structures within the marine environment and promote biodiversity through the creation of living seawalls. Typical seawalls inhibit biodiversity. Special tiles installed turn typical seawalls into living seawalls, by mimicking naturally occurring microhabitats and promote a range of marine species such as oysters, seaweed, mussels, barnacles, chitons and more. The living seawalls also attract filter-feeding organisms that absorb and filter out pollutants from the water. As part of a pro bono effort, GHD partnered with SIMS and the Reef Design Lab to assess the living seawalls as part of SIMS' Living Seawalls Initiative (www.ims.org.au/research/flagship-projects/living-seawalls). Our team took on assessing the strength and structural integrity of the concrete tile designs and their in-situ fixings.

The challenge
GHD needed to blend ecological concepts and creative engineering to develop a functional affordable, adaptable, and scalable method to enhance existing seawalls. We needed to assess the design of a particular panel configuration and advise on modifications so that they would be suitable for operational use over a defined design life in a harsh marine environment.

Our response
We got to work analyzing the living seawalls. Our analysis included determining typical meteorological wave and passing vessels wave conditions, deriving impacts loads from these waves, wake formulating destructive testing of sample tiles to establish engineering criteria, interpreting destructive testing results, numerical modelling of typical tiles, and studying what materials will support

Photo credential: www.livingseawalls.com.au/design

Charlotte County
Engineering Design Consultant Services Bayshore Live Oak Park Shoreline Restoration

the walls' longevity. GHD designed an anchor arrangement suitable to support the installation of the living seawall tiles for a 50-year design life. We included fatigue and durability considerations. The anchor design also considered the anchor locations and safety of the installers, operators, other personnel, and nearby swimmers.

The Impact

Our efforts helped to increase the ecological value and biodiversity in Sawmillers Reserve, Milson's Point, Clontarf, and Fairlight where the living seawall tiles we helped with were installed. After the success of earlier projects, GHD subsequently assisted SIMS and Northern Beaches Council with a renewal concept design to install living seawall tiles on a proposed concrete stormwater culvert adjacent to the Fairy Bower Sea Pool at Manly, NSW, Australia.

Photo credentials from @livingseawalls Instagram

Top right - www.instagram.com/p/CmiX-iLpxDl/?igsh=dG9nMmIxd20yMzZ2

Bottom left - www.instagram.com/p/BqZgVNQBk_u/?igsh=eWxhbGkycmt2dGhv

UF Seawall Condition Assessment and Living Shoreline Demonstration

Ponce Inlet, FL

Project highlight

- Preservation natural aesthetics and habitat
- Nature-based shoreline improvement and erosion mitigation

Client
Greenacres Ponce Inlet, LLC/
The Randolph Company

Point of Contact
Carter Randolph, PhD
Managing Director, The Randolph Company
T: 513.891.7144
E: carter@therandolphcompany.com

Year(s)
2018 - Ongoing

Term of Engagement
Ongoing

Value
~ $29,000

Project Relevancies

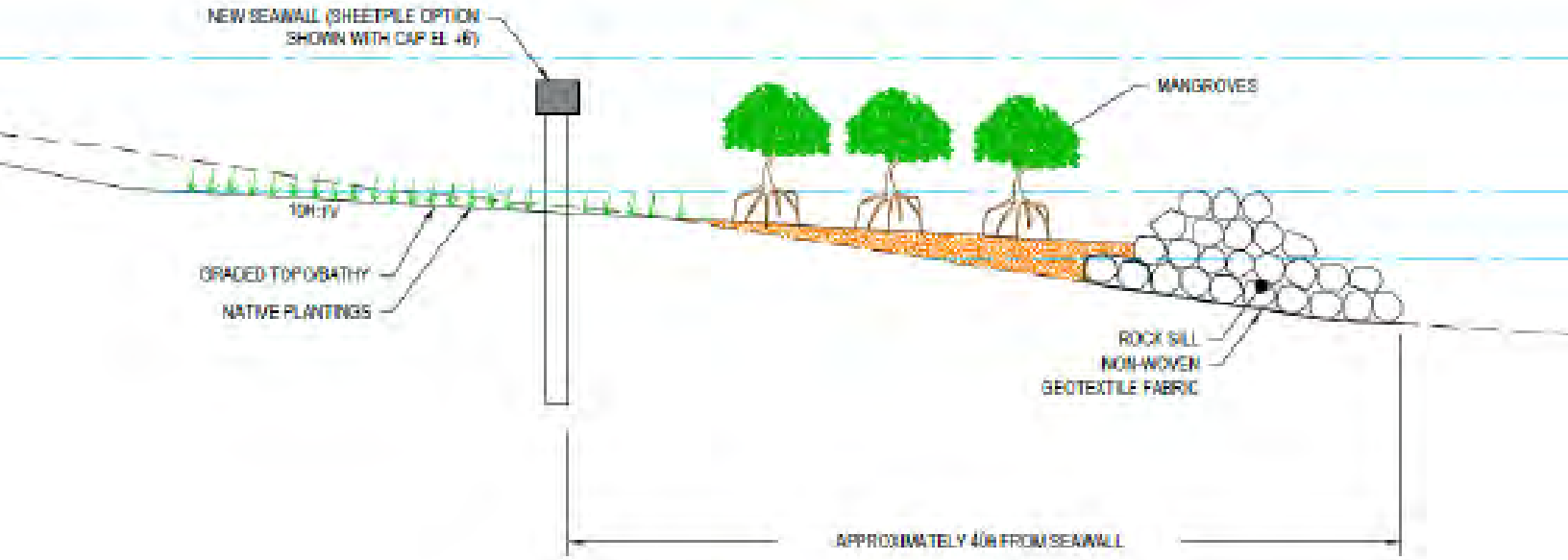
- Seawalls
- Living shorelines
- Challenging environmental conditions or unique design requirements
- Innovative solutions or approaches to enhance a project's sustainability or efficiency

Mission
The Randolph Company (Randolph) is a wealth management company who oversees the endowment for the University of Florida (UF). UF was considering transforming their 3.2-acre parcel of Greenacres Ponce Inlet (Ponce Inlet) into a coastal science center. On behalf of UF, Randolph hired GHD to assess the condition of a nearby existing seawall located on the Halifax River. UF's parcel of land on the inlet contains ~370 linear feet of shoreline facing the river. If the seawall needed repairs, it would make UF's project more expensive. Randolph wanted to make informed decision about whether to advise UF to develop the coastal science center on the inlet based on GHD's findings.

The challenge
Our team discovered challenges with the seawall after taking our initial measurements. We took measurements based on visual determinations using a 6-point rating scale. The ratings revealed the existing, aged wall is in serious to critical condition. Several sections of the wall had already rotated or collapsed due to getting inundated by the uplands at high tide. Our team also noted spalling, cracking, and loss of soil landward of some of the keyhole joints.

Our recommendations also needed to include protection for an existing structure. A historic two-story building resides on the property ~75 feet north of the wall; this structure had already been partially restored at the time of the field assessment in October 2018.

Our response
Our team got to work analyzing the seawall. We determined that the existing seawall is cast-in-place concrete with key and keyhole joints spaced irregularly along the seawall. The seawall appeared to have been constructed in two phases, with the most recent occurring on or about 1967. The challenges that the seawall faced are noted above.



1 TYPICAL LIVING SHORELINE SECTION

Because UF wanted to develop the land into a coastal science center, GHD provided recommendations for converting one of the sections of the seawall that had already failed (due to a rotational failure of the panels) to a living shoreline, with an articulated concrete block mattress (ACBM) providing slope protection to the embayment. We also recommended adding rock sills and planting native vegetation (including mangroves) to the wall replacement. The additions would provide ecological benefits to the land that the science center planned on studying. The vegetation will also help the coast be more resilient.

GHD's team also provided recommendations for the repair and replacement of the seawall. We submitted a report with what site data we recommend be acquired, as well as environmental and physical surveys, design, federal, state and local permitting, and bid document preparation needs. We also provided a preliminary opinion of probable construction cost.

Our plan and estimate considered the existing historical home. The ACBM will provide a backstop for any erosion that may occur due to an extreme storm event (i.e. major hurricane).

The Impact

We performed our assessment and provided our recommendations within the requested time frame. GHD was able to perform the condition assessment within two weeks of getting the notice to proceed (NTP) and transmitted a report with recommendations and cost information less than one month after the NTP. Our recommendations will serve to inform whether UF proceeds with developing the inlet.

Jeffrey Lake Seawall Replacement
North Port, FL

Project highlight
- Geotechnical effort
- Local community collaboration
- Flood risk reduction and reduction of storm effects

Client
City of North Port
4970 City Hall Boulevard
North Port, FL 34286

Point of Contact
Anthony Friedman, PE, PTOE
Transportation Engineer
T: 941.240.8098
E: afriedman@northportfl.gov

Year(s)
2021 – 2024

Term of Engagement
3 Years

Value
~ $50,000 (design)

Project Relevancies
- Seawalls
- Challenging environmental conditions or unique design requirements

Mission
GHD was recruited by the City of North Port (City) to help replace a seawall. We completed special inspections, the seawall design, and provided material testing laboratory support.

The challenge
The existing seawall was severely deteriorated. There was a high potential for failure. Failure on the project would impact drainage and residential roadway operations.

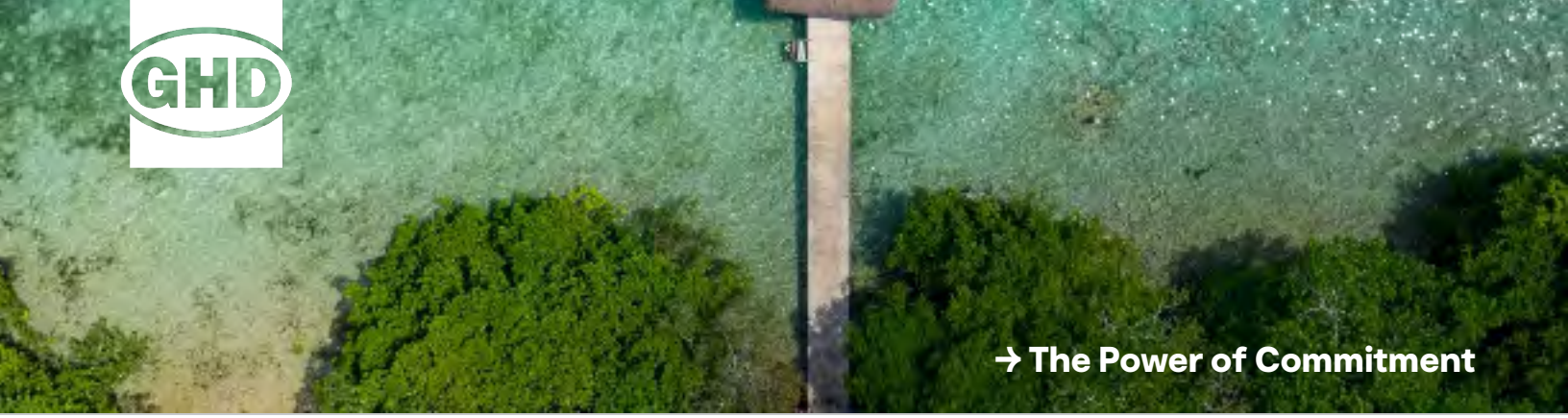
Because of permitting requirements, our proposed seawall replacement needed to be located inland (upland) of the existing wall. An existing stormwater outfall through the existing seawall also needed to remain in place and at full operation. Our proposed wall solution required consideration of this existing infrastructure element.

Based on construction funding stipulations, the project also needed designed and constructed on an extremely accelerated timeline. Design, from notice to proceed to final signed and sealed plans issued for construction is 30 days.

Our response
GHD committed staff to immediately mobilize field operations and meet the expedited design timeline. We completed geotechnical investigations and site a evaluation. The replacement seawall design alignment considered the permitting requirements put in place by the City. We also took into account the location of drainage structures, overhead electric utilities, and residential homes in the area.

Our team presented our layout of a driven sheet pile wall. This layout would increase construction efficiency in the shortened timeline, reduce the footprint for impact to the neighbourhood, and enhance the performance of the design in the project location.

The Impact
As of May 2024 the seawall replacement is under construction. 2023 Hurricanes partially damaged the existing wall, the GHD team evaluated the current conditions and swiftly updated design plans for bidding. The design timeline was met and construction expedited, exceeding client expectations on a compressed timeline. Construction support has included in-field design modifications due to unforeseen subsurface conditions, and the team has continued to be responsive in order to avoid construction delays.



Top of Seawall Study
Indian Creek Village, FL

Project highlight
- Forward-looking storm risk preparation
- Public consideration and support

Client
Indian Creek Village
9080 Bay Drive
Indian Creek Village, FL

Point of Contact
Guillermo Olmedillo
Village Manager
T: 305.865.4121
E: golmedillo@icvps.org

Year(s)
October 2022 - November 2022

Term of Engagement
1 months

Value
~ $12,000

Project Relevancies
- Seawalls
- Public outreach

Mission
The Indian Creek Village (Village) needed to ensure their seawall withstands future sea level rise. To help achieve this goal, GHD was retained by the Village to make a uniform top of seawall elevation recommendation.

The challenge
Our team had to consider many factors when proposing new seawall heights. These factors included the tides, seasonal water level variations, flood elevations, and sea level rise projections. GHD needed to align our guidance with municipal requirements and ensure the seawall a service life of 25 years.

Our response
Our team gathered all the relevant local data on the challenges described above. A relative freeboard calculation was performed on a lot-by-lot basis utilizing the local water surface elevations and existing seawall cap heights. GHD determined the optimal height of newly constructed seawalls that balances potential overtopping with economic construction. This translated into a recommendation for the Village to consider a minimum top of wall elevation of +6 (ft, NAVD88), with the ability to raise the top of the wall to +8.5 (ft, NAVD88) in the future.

The impact
The Village will use GHD's analysis and recommendations in future seawall construction projects and coastal infrastructure planning efforts.

Mid-Town Seawall Replacement Design and Permitting

Palm Beach, FL

Project highlight

- Local permitting
- Historic and aesthetically relevant design
- Environmental protection with real-life usability

Client
Town of Palm Beach
360 South County Road
Palm Beach, FL 33480

Point of Contact
Jason Debrincat, PE
Assistant Director of Public Works
T: 561.838.5440 x 7027
E: jdebrincat@townofpalmbeach.com

Year(s)
2020 – Ongoing

Term of Engagement
Ongoing

Value
$758,447

Project Relevancies

- Seawalls
- Public outreach
- Challenging environmental conditions or unique design requirements
- Innovative solutions or approaches to enhance a project's sustainability or efficiency

Mission
GHD was hired by the Town of Palm Beach (Town) to help replace an aging seawall. The Town owns and maintains an approximately 2,715 linear foot vertical seawall, including a stretch on North Ocean Boulevard. The seawall provides protection to public and private infrastructure at Mid-Town beach. We are providing design, permitting, and bid phase services on the project.

The challenge
The primary challenge of this project is that the existing seawall, constructed in the 1920s, is reaching the limits of its design life and requires replacement. Our team also needed to be cognizant that the North Ocean Boulevard stretch of the seawall is the primary hurricane evacuation route for that segment of Palm Beach Island.

Our response
GHD coastal engineering staff performed a coastal engineering assessment of the wall to determine an appropriate top of wall and cap elevation for resiliency. We also scoured the potential at the base of the wall. A consultant prepared a comprehensive vulnerability assessment for the Town. We integrated the results of that study into our coastal engineering assessment. For the assessment, we collected site-specific topographic survey data. We also acquired a series of standard penetration test borings to characterize the subsurface soil conditions. Next, we conducted a ground penetrating radar investigation along the landward side of the seawall to confirm the location of subsurface tie rods and anchors. GHD designed a combination of anchored and, in special consideration areas, cantilevered wall alignments.

We also integrated a number of special design considerations into the design. These include return walls at the ends of the publicly-owned property that comprises the project area (in spite of the seawall continuing to both the north and the south of the existing structure), the integration of existing groins that tie into the base of the existing wall, a lifeguard station (bunker) and restroom facility, an underground tunnel connecting an upland residential property to the beach, an emergency sanitary sewage outfall vault and pipeline, a ramp for emergency and construction access, and pedestrian access stairs and an ADA ramp connecting Ocean Boulevard to the beach.

A historic, and aesthetically significant, clock tower also exists along the wall's alignment for replacement. Close coordination with the Town's approval board and an architecture teaming partner were key to keep the existing wall scallop feature and tie into the clock tower as well.

The Impact

GHD submitted a permit application to the Florida Department of Environmental Protection (FDEP) in summer 2022.

The permit was obtained in December 2022. Our team finalized the design in May 2023. GHD provided final plans, specifications, and an engineer's opinion of probable construction cost to the Town to support advertisement for bid. GHD assisted the Town with bid phase services which were temporarily postponed. Seawall construction is anticipated to commence in November 2025.

South Bayshore Lane Pump Station Outfall Design
Miami, FL

Project highlight
- Use of Modern technology
- Flood risk reduction and local safeguarding
- Nature based solutions

Client
A.D.A. Engineering, Inc.
8550 NW 33rd St.
Suite 202
Doral, FL 33122

Point of Contact
Albert Argudin Jr, CGC
Vice President
T: 786.382.9046
E: aargudinjr@adaeng.net

Year(s)
August 2021 – February 2022

Term of Engagement
6 months

Value
~ $12.4 M (construction)

Project Relevancies
- Seawalls
- State and/or Federal grant funds
- Challenging environmental conditions or unique design requirements
- Innovative solutions or approaches to enhance a project's sustainability or efficiency
- Use of cutting edge technology

Mission
The City of Miami (City) is increasing neighborhood resiliency to flooding from increased rainfall intensity and sea level rise. To lessen the flooding, the City is installing a pump station that will require an the upsizing of a drainage outfall through an existing seawall and into Biscayne Bay. The City recruited GHD to design the expansion.

The challenge
Our team needed to plan how to best increase the capacity of the drainage outfall to accommodate a pump station. The record drawing obtained from the City did not match field conditions. Thus, GHD performed a GPR survey to determine whether any upland conflicts existed (e.g. tie-backs) and the approximate location of reinforcing, thickness of wall, and concrete cover.

Our response
GHD needed to ensure we did extensive testing to ensure the efficacy of our design. We completed Ground Penetrating Radar (GPR) both landside to determine location of any existing tiebacks and along the seaward face of the wall to determine size, spacing and location of existing rebar. GHD also performed subsurface exploration and material testing. Our team used the information we gathered to recommend construction materials and to start designing a new pump. After an assessment of the seawall, our team submitted a completed design to the City. We also provided design coordination during construction.

The impact
The City used our recommendations and designs to increase the capacity of an existing drainage outfall. The neighborhood near the outfall now experiences less flooding.

Historic Turtle Kraals and C Dock Assessment

Key West, FL

Project highlight
- Preservation of sensitive historic species
- Habitat improvement with sensitivity to local species
- Continuity of service to harbor area

Client
City of Key West
1300 White Street
Key West, FL 33040

Point of Contact
Karen Olson
Deputy Director of Port & Marina Services
T: 305.809.3803
E: kolson@cityofkeywest-fl.gov

Year(s)
2021 – Ongoing

Term of Engagement
Ongoing

Value
$130,000

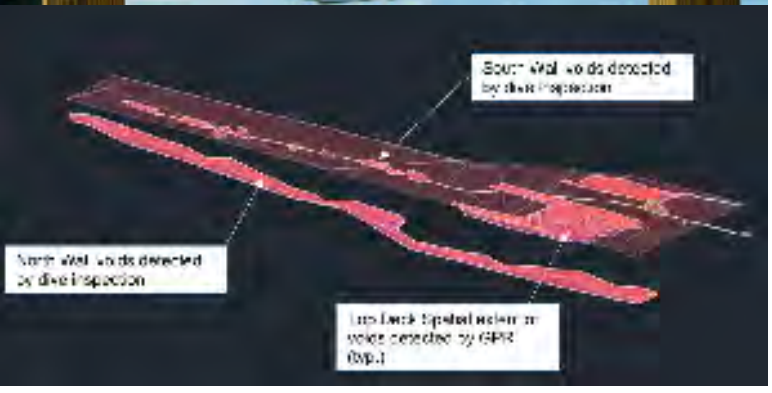
Project Relevancies
- Seawalls
- Living shorelines
- Public outreach
- Challenging environmental conditions or unique design requirements
- Innovative solutions or approaches to enhance a project's sustainability or efficiency
- Use of cutting edge technology

Mission
The City of Key West (City) recruited GHD to assess the C Dock within the Key West Bight Marina at the Historic Seaport. The assessment needed to be completed to determine what kind of repairs are needed.

The challenge
C Dock is part of a popular waterfront that is traversed daily by tourists, marina boat owners, and other recreationists. In addition, the project site was added to the U.S. National Register of Historic Places (NRHP) in 1994 as part of the Thompson Fish House, Turtle Cannery, and Kraals. Our team had to be cognizant about how to not disrupt the area. Additionally, the record drawings of the original construction and subsequent modifications to this historic structure could not be found in City files.

Our response
GHD developed a project approach that combined a public records search and non-intrusive field investigations to develop insight into the history of C Dock (e.g., materials of construction, dimensional data, year constructed, major modifications/repairs, etc.) and to characterize the structure's current condition. GHD determined that the most recent repairs were conducted in the mid-1990's and assigned the structure an overall condition assessment rate of "severe to critical" based on the results of an underwater inspection conducted by the GHD Team. Following the American Society of Civil Engineers (ASCE) underwater inspection guidelines, GHD notified the City of the condition assessment rating.

We recommended implementing load restrictions and daily monitoring due to the numerous large voids observed and the potential lack of bearing capacity support beneath the pedestrian walkway and northern seawall. GHD immediately performed a ground penetrating radar (GPR) survey the day before New Years' Eve 2021 to further characterize the condition of the structure. The GPR survey confirmed that voids were located directly below the concrete walkway along



portions of the structure.

GHD expedited the engineering assessment and presented the City with the results, recommendations to perform temporary emergency repairs, and opinions of probable construction costs for two options. The City agreed to move forward with agency coordination of the emergency repair while long-term repairs were being designed and permitted.

The impact

The City elected to pursue a long-term repair option. GHD is currently assisting the City in developing a field investigation plan that includes benthic resource surveys, additional geotechnical data collection, opinions of probable construction cost for two long- term repair options, permitting and the development of a construction plan and bid package of the City's preferred option.

Port Everglades Bulkhead Replacement
Fort Lauderdale, FL

Project highlight
- Environmental remediation design
- Local permitting and survey experience

Client
T.Y. Lin international
100 W. Cypress Creek Road
Suite 860
Fort Lauderdale, FL 33309

Point of Contact
James Kanter, PE
Sector Manager
T: 954.308.3374
E: james.kanter@tylin.com

Year(s)
2021 – Ongoing

Term of Engagement
Ongoing

Value
~ $150 M (construction)

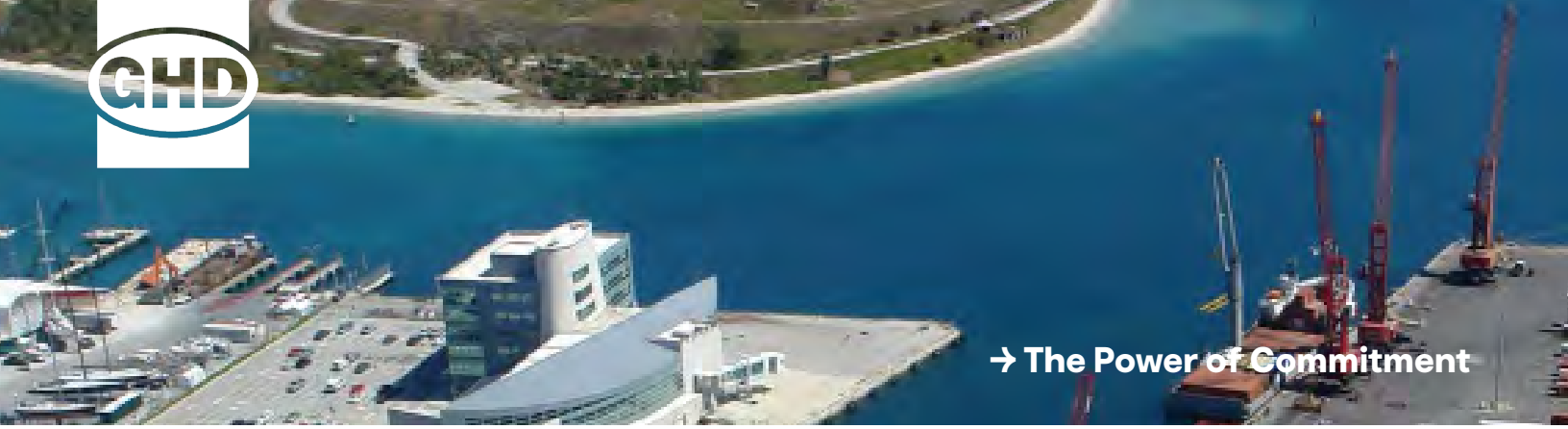
Project Relevancies
- Seawalls
- Challenging environmental conditions or unique design requirements

Mission
The Broward County Port Everglades Department needs to replace over 9,000 linear feet of aging deep-water bulkheads as part of the Group 1 bulkhead replacement project. GHD was selected as a subconsultant on the T.Y. Lin International Team. The T.Y. Lin International Team provides a range of services on the project, including deep-water marine structural engineering, corrosion protection, berthing and mooring analysis, civil and utility engineering, geotechnical investigations, foundation engineering, scour analysis and scour protection, coral and benthic habitat surveys, regulatory agency permitting construction cost estimating and project scheduling, as well as construction phase services over a period of 7 to 10 years.

The challenge
The project needs to replace nine separate bulkheads located throughout the Port.

Our response
GHD is currently leading the contamination assessment design and field investigations, and supporting the environmental permitting, coral and benthic habitat surveys.

The impact
This ongoing project will result in over 9,000 linear feet of aging deep-water bulkheads getting replaced.



Port of Palm Beach Bulkhead Cathodic Protection

Palm Beach, FL

Project highlight

- Storm effects buffer zone
- Local construction and design experience

Client
Kimley-Horn
1920 Wekiva Way
Suite 200
West Palm Beach, FL 33411

Point of Contact
J. Casey Long, PE
Ports and Waterfront Development
T: 561.845.0665
E: casey.long@kimley-horn.com

Year(s)
2020 - 2021

Term of Engagement
1 year

Value
~ $6,000

Project Relevancies

- Seawalls
- Challenging environmental conditions or unique design requirements

Mission
Kimley-Horn and the Port of Palm Beach District needed to put a coating on the Berth 1 Bulkhead in the Port of Palm Beach. The bulkhead is ~400 ft in length. The seawall is constructed of steel sheet piles that are coated on the ocean-facing side. Each pile of the wall is 4.59 ft in width and 65 ft tall. The bottom 17 ft of each sheet did not contain a coating.

The challenge
GHD needed to ensure our plans aligned with the clients' expectations. The submerged total height of the bulkhead was expected to be 59 ft, with approximately the bottom 26 feet buried within the substrate. The cathodic protection system associated with the bulkhead consists of galvanic aluminium 200-lbs MM-A-200S06 anodes directly mounted to the bulkhead surface. The anodes are installed on every other pile at alternating depths (-7.00' from 00.00 elevations, 3 ft from mud line - see design drawing). A total of (113 galvanic anodes were supplied for the project.

Our response
GHD NACE-certified corrosion engineers provided specialty materials consulting services to Kimley-Horn and the Port of Palm Beach for this project.

The impact
Our team's consulting services were utilized by Kimley-Horn and the Port of Palm Beach.

MSC Cruises Terminal Expansion at PortMiami
Miami, FL

Project highlight
- Specialized modeling and analysis
- Design emphasis for future operations and practical use

Client
Arquitectonica
2900 Oak Avenue
Miami, FL 33133

Point of Contact
Charles Hugh Crain
Vice President
T: 305.372.1812 x 1024
E: ccrain@arquitectonica.com

Year(s)
2019 - 2022

Term of Engagement
~3 years

Value
$142,000

Project Relevancies
- Seawalls
- Challenging environmental conditions or unique design requirements
- Innovative solutions or approaches to enhance a project's sustainability or efficiency
- Use of cutting edge technology

Mission
GHD was retained by Arquitectonica on behalf of MSC Cruises to provide a coastal and mooring basis of analysis report that included the development of site environmental conditions, underkeel clearance and scour potential during vessel arrival/departure, a dynamic mooring and berthing analysis that included a passing vessel study, a top of wall elevation assessment, and the recommendation of a minimum finished floor elevation for the terminal building based on storm surge, wave overtopping, and sea level rise projections.

Our response
Hydrologic and Hydraulic Studies: Hydraulic analysis of Miami Harbor for wave, current, and water level analysis.

Flood Control: GHD completed a wave overtopping analysis to ensure that minimum specified seawall elevation met general safety and operational guidance limits during both present-day and future sea level rise scenarios.

GHD also recommended a minimum finished floor elevation for the new terminal building and provided a statistical analysis of the total number of flood events expected over the project's design life. The analysis included a range of sea level rise scenarios for inclusion in the Owner's overall risk management strategy.

Coastal and Navigation Projects: GHD performed a dynamic mooring analysis for multiple floating bodies moored along PortMiami's cruise terminal Berth 8 and Berth 9 (MSC World Class & Liquefied Natural Gas (LNG) bunkering Vessel). The analysis included the effects from winds with magnitude and directional variability, a constant current, and a single passing vessel (Oasis of the Seas – stretch class) at multiple transit speeds and offset distances.

In addition, GHD analyzed the scour potential at the toe of the existing seawall due to propeller wash velocities generated by berthing and un-berthing cruise ships.

GHD also recommended a minimum underkeel clearance in the berth pocket based on an analysis of water levels, ship, bottom/bed factors, dredge tolerances and maintenance intervals, and risk levels.

Surface Water Modeling: GHD developed a hydrodynamic model of Miami Harbor to determine the draw down in water surface elevation and resulting forces that a passing vessel would have on a moored cruise ship and LNG bunkering vessel. GHD also developed a wave model to transform offshore waves into Miami Harbor.

Project Details

Client
Charotte County

Contact
Brian Hatfield
P: 941.769.4054
E: Bryan.Hatfield@
charlottecountyfl.gov

Completion
2024 - Ongoing

Cost
$1M

Services | Relevancy
Survey, SUE, GIS Services

Charlotte County, Subsurface Utility Engineering Verification, Charlotte County, FL

CED was awarded a contract with Charlotte County to allow Charlotte County Utilities to incorporate SUE data into the Charlotte County Utilities map book in order to provide a more complete and accurate inventory of underground assets.

CED is currently performing QL-C, QL-B, QL-A, Survey and GIS services to update the Charlotte County Utility Mapbook. QL-C survey services are being performed to collect the horizontal positions of all sanitary sewer manholes and obtain their inverts with GPS accuracy. QL-B designates are being performed to accurately map approximately 121 miles of county owned potable water, non-potable water and sewer systems. QL-A services with additional survey services will identify material type, size and elevations to provide additional information at locations requested by county personnel to fortify their records.

Our GIS team will be combining all this information into ARCGIS using the county provided schema and delivering a fully updated geodatabase to seamlessly replace the existing utility map book. This will update the Charlotte County GIS database with more reliable and accurate information for future development and assist with the maintenance of their utility systems.

Colliers Engineering & Design

Project Details

Client
Pinellas County Parks and Conservation Resources

Contact
Greg Milam
P: 727.582.2537
E: gmilam@pinellascounty.org

Completion
Ongoing

Cost
$100,000+ (TWO based)

Services | Relevancy
UAS, Land Survey Services

Professional Engineering Services for Countywide Unmanned Aerial Services & Outback Key Tidal Erosion, Pinellas County, FL

Scope: Professional Engineering Services for Countywide Unmanned Aerial Services: CED has held a County-wide professional services contract for UAS and Land Survey services, resulting in multiple assignments ranging from photographic documentation to onsite UAS training, and professional survey services. One major task order focused on the Baypointe Golf Course, on which we were tasked with supporting Pinellas County as it assessed and designed improvements to convert the golf course into a multi-use pedestrian facility and stormwater retention area. The initial assignment included complete documentation of the 40-acre site using high resolution drone-based imagery. Our approach included collecting multiple close-range video trajectories throughout the site for inspection and public relations, as well as production of an ortho-mosaic image of the site tied to local County survey control. As initial design commenced, CED was then tasked with completing a full topographic survey of the site to support engineering design needs. In order to provide a detailed and comprehensive dataset, we leveraged drone aerial LiDAR to map the entire site in combination with Mobile LiDAR for adjacent roadways and conventional survey to locate all underground utilities and stormwater features. These datasets were merged to develop 1' contours over the site, a tree survey, and 3D modeling of all storm and sanitary pipes in Civil 3D 2018.

Scope: Outback Key Tidal Erosion Monitoring: The changing tidal Shorelines during alternating low and high tides of Outback Key in Fort DeSoto Park have been a favorite recreational destination for local Pinellas County Boaters for generations. However, as is becoming more common along Florida's coastline, sea level rise is changing tidal patterns and causing significant erosion of the sandbars defining this area. These changes are altering the landscape and configuration of Outback Key and leading to navigation issues and safety concerns involving boaters, sunbathers, swimmers, and folks finishing at this location. The Pinellas County Parks Department reached out to CED to provide a solution for visually monitoring the tidal erosion along Outback Key under our existing on-call UAS Survey Contract with the County. This study was performed through high resolution 3" pixel ortho mosaic creation using high resolution imagery captured from a UAS (drone) platform over 4 months at varying tidal levels. The results are being used by the Pinellas Park staff to evaluate available alternatives to help maintain this treasured recreational area for future generations.

Colliers Engineering & Design

VII

→ Experience and Capabilities in the Following Areas

More details on these evaluation criteria are provided in previous sections within this RFQ submittal. Brief summaries are provided below.

1. Advanced Geotechnical and Topographic Survey Work

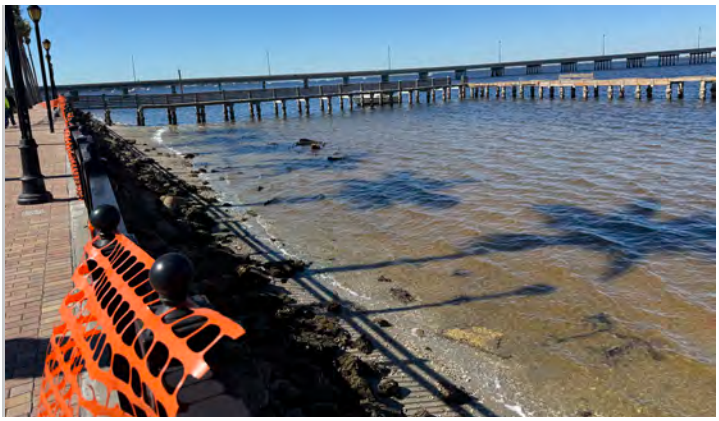
GHD's geotechnical and survey approach for Tiki Point is designed to produce defensible, design grade inputs (subsurface conditions + topographic/bathymetric control + utility constraints) that directly support **living shoreline stability, "design for settlement" detailing, and permit package preparation** for the ~845 LF project reach.

GHD Geotechnical / Geophysics Capabilities

- **Data-driven subsurface characterization to support stability and settlement allowances.** GHD's recommendations will be grounded in field and laboratory data, including subsurface exploration with borings and in-situ testing (e.g., Standard Penetration Testing) and groundwater observations, so living shoreline element elevations and sections can explicitly incorporate anticipated settlement and maintain long-term performance.
- **Rapid mobilization with in-house drill rigs and experienced crews.** GHD owns and operates a fleet of drill rigs with advanced in-situ testing tools, operated by experienced GHD staff, enabling efficient data collection and real-time adjustments if field conditions differ from expectations—important for seawall-adjacent shorelines where conditions can vary over short distances.
- **Geophysics to refine subsurface understanding and reduce uncertainty.** Where beneficial for Tiki Point, the GHD Team can deploy non-intrusive geophysical techniques (e.g., Ground Penetrating Radar, Electrical Resistivity Imaging, Multi-channel Analysis of Surface Waves, Electromagnetic methods) to identify anomalous subsurface conditions and improve confidence in foundation/grade decisions for living shoreline features.
- **Florida coastal condition expertise that translates to shoreline design decisions.** GHD's geotechnical history in Florida includes experience with weak/organic soils (muck) and coastal considerations such as seawall stability and scour—experience directly applicable to designing living shoreline features intended to function alongside an existing hardened shoreline.

Topographic Survey / Bathymetry / SUE Support

Colliers Engineering & Design (CED) will support GHD with **Surveying, hydrographic/bathymetric coordination, and SUE** to provide the geometric control and utility conflict avoidance necessary for a permit-ready living shoreline design package. CED offers a full suite of survey/geospatial services, including GPS/GIS/topographic mapping, hydrographic surveying, and subsurface utility engineering practices.

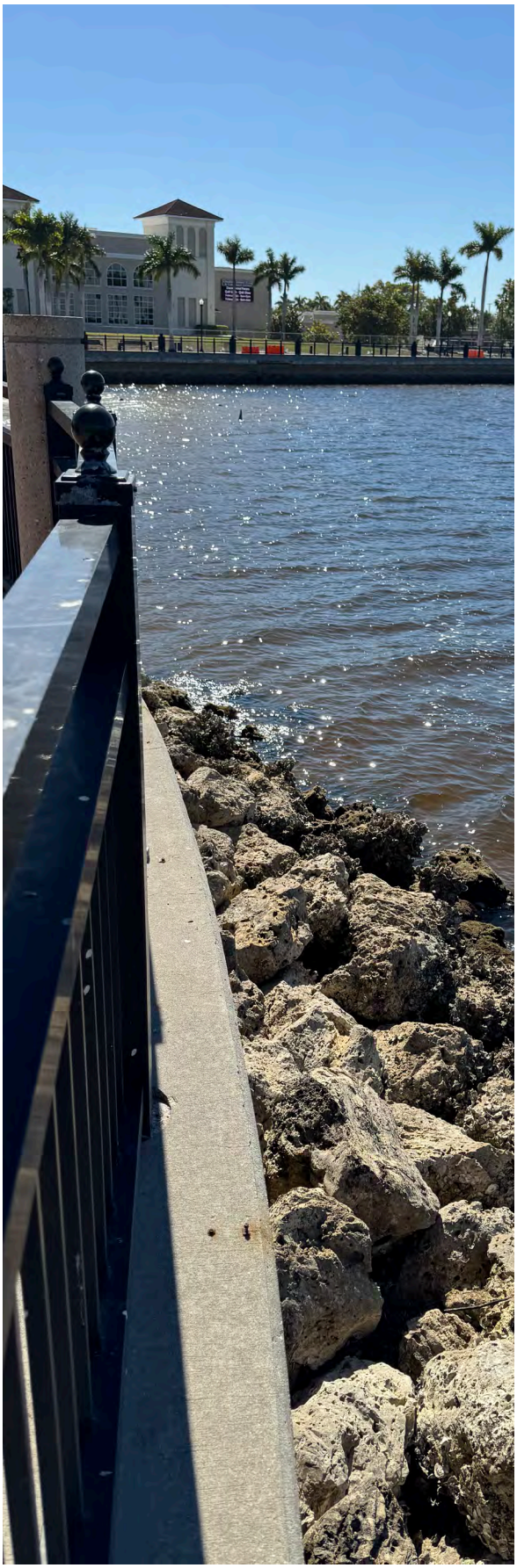


Charlotte County-specific experience: CED was awarded Charlotte County's **Subsurface Utility Engineering Verification** contract (File No. 24 138 / File Number 2024000138), demonstrating familiarity with County processes and expectations for utility verification and documentation.

How these capabilities strengthen the Tiki Point design

By combining GHD's in-house geotechnical/geophysics capabilities with CED's survey/SUE support, the team will:

- **Reduce subsurface uncertainty** and translate measured conditions into **settlement allowances and stable sections** for living shoreline elements (supporting the project's preference to build settlement risk into design rather than relying on geotextile separation).
- Provide **survey and mapping outputs** suitable for engineering development and permit exhibits (plan/section geometry, elevations, and impact footprints), while minimizing utility conflicts that can trigger redesign during later stages.
- Support CHNEP/City deliverable requirements by organizing survey and subsurface data in a way that can be integrated into technical memoranda, design criteria documentation, and final permitting packages.



2. Ecological Assessment

Living shorelines succeed when ecological function is designed into the system from the start. GHD integrates ecology into engineering by aligning habitat targets (oyster/mangrove elements and shoreline processes) with constructability and regulatory expectations. For Tiki Point, we will use the City's pre-construction monitoring results and resource mapping as primary inputs, and we will provide the required independent technical review of monitoring documentation to confirm it is complete, accurate, and QA-consistent for permitting and reporting.

Key capabilities include:

- **Marine resource evaluation** (e.g., SAV/seagrass documentation, oyster/mangrove presence, and other relevant resources) to inform siting, footprint refinement, and avoidance/minimization strategies.
- **Habitat-forward design integration** that supports ecological performance while meeting engineering needs for stability, durability, and maintenance.
- **QA-consistent technical review** of monitoring data summaries, graphics, and compliance documentation to support grant requirements and permit defensibility.

3. Development of Shovel Ready Engineering and Design Plans and Cost Estimates

GHD's goal is to deliver a shovel-ready, permit-ready 100% design package that can move efficiently into procurement and construction. We will advance the design through staged submittals (30/60/90/100%) and maintain a consistent basis of design so decisions are traceable, review cycles are efficient, and the final package is clear for bidders and agencies..

Key capabilities include:

- **30/60/90/100% design progression** with clear milestone deliverables, decision logs, and comment resolution tracking.
- **Constructability-driven detailing** for a public waterfront corridor, including access/staging considerations and practical sequencing assumptions to reduce change-order risk.
- **Cost-estimating support at key milestones** (and value/constructability checks) to maintain feasibility and ensure the final design is implementable within anticipated funding constraints.

4. Preparation of Permit Applications and Pre Application Agency Coordination

GHD will prepare complete permit application packages for all permits needed to construct the 100% design; the City (or its contractor) will pay all permit fees. Our permitting approach is front loaded with early coordination with the agencies to confirm the most efficient pathway; for USACE, we will evaluate NWP 54 (Living Shorelines) applicability and pursue a District Engineer waiver (based on a written "minimal adverse effects" determination).

Key capabilities include:

- **Pre application coordination support** to confirm permitting pathway, key constraints, and documentation expectations before finalizing permit packages.
- **Completed permit package preparation** (forms, narratives, drawings/exhibits, impact calculations, and supporting documentation).
- **Authorization/riparian readiness** through early identification of access/authorization needs (e.g., public easements, upland owner coordination, submerged lands considerations) so real-property questions do not delay submittals.
- **FDEP SOP familiarity** supported by GHD's long-standing role as an FDEP consultant under multiple contracts, strengthening our understanding of agency expectations for documentation quality and review workflows—particularly valuable for grant-funded, QA-driven submittals.

5. Project Management (Meetings, Presentations, Stakeholder Comments, and Deliverables)

GHD will manage Tiki Point with a structured, transparent project management approach aligned with CHNEP's coordination requirements and the RFP's deliverable cadence. We will maintain consistent communication, clear action tracking, and disciplined documentation throughout design, permitting preparation, and public outreach.

Key capabilities include:

- **Kickoff + monthly coordination meetings** with agendas, decision logs, and minutes provided within one week, plus monthly progress bullets to CHNEP.
- **Wrike-based deliverable management** to ensure timely uploads, consistent file naming/version control, and accessible public-facing PDFs with properly authorized imagery and CHNEP acknowledgement/logo use.
- **Stakeholder engagement execution** including two public workshops and development of required outreach products (fact sheet, article, presentation, educational video), with a structured process to document and respond to stakeholder input.
- **Issue/risk management** that proactively tracks permitting dependencies, survey/monitoring inputs, and decision points tied to 30/60/90/100% milestones.

VIII

→ Volume Of Work

PART IV - SUBMITTAL FORMS
PROPOSAL SUBMITTAL SIGNATURE FORM

1.	Project Team Name and Title	Years experience	City of office individual will work out of for this project	City individual's office is normally located	City of individual's residence
	Jesse Davis, Project Manager	19	Miami, FL	Miami, FL	Miami, FL
	Melissa Burns, Business Group Leader	14	Orlando, FL	Orlando, FL	Orlando, FL
	Brian Moore, Environmental / CAR	29	Tampa, FL	Tampa, FL	Tampa, FL
	Craig Kruempel, Environmental Engineering	41	West Palm, FL	West Palm, FL	West Palm, FL
	Steven Janosik, Geotechnical Engineering	25	Tampa, FL	Tampa, FL	Tampa, FL
	Alberto D. Argudin, Construction Management	41	Miami, FL	Miami, FL	Miami, FL
	Jingwei Li, Stormwater Engineering	10	West Palm, FL	West Palm FL	West Palm FL

2.	Magnitude of Company Operations	
	A) Total professional services fees received within last 24 months:	$ 136,480,433
	B) Number of similar projects started within last 24 months:	927
	C) Largest single project to date:	$8,021,045.56

3.	Magnitude of Charlotte County Projects	
	A) Number of current or scheduled County Projects	0
	B) Payments received from the County over the past 24 months (based upon executed contracts with the County).	$ 0

4.	Sub-Consultant(s) (if applicable)	Location	% of Work to be Provided	Services to be Provided
	Colliers Engineering + Design	Fort Myers, FL	10%	Surveying & Materials Testing

5.	Disclosure of interest or involvement: List below all private sector clients with whom you have an active pending contract and who have an interest within the areas affected by this project. Also, include any properties or interests held by your firm, or officers of your firm, within the areas affected by this project.	
	Firm	Address
	Phone #	Contact Name
	Start Date	Ending Date
	Project Name/Description	

NAME OF FIRM GHD Services Inc.

(This form must be completed and returned)

6. Minority Business:	**Yes** _____ **No** ✓
The County will consider the firm's status as an MBE or a certified MBE, and also the status of any sub-contractors or sub-consultants proposed to be utilized by the firm, within the evaluation process.	
Comments or Additional Information:	

The undersigned attests to his/her authority to submit this proposal and to bind the firm herein named to perform as per contract, if the firm is awarded the Contract by the County. The undersigned further certifies that he/she has read the Request for Proposal, Terms and Conditions, Insurance Requirements and any other documentation relating to this request and this proposal is submitted with full knowledge and understanding of the requirements and time constraints noted herein.

By signing this form, the proposer hereby declares that this proposal is made without collusion with any other person or entity submitting a proposal pursuant to this RFP.

In accordance with section 287.135, Florida Statutes, the undersigned certifies that the company is not on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, and does not have business operations in Cuba or Syria (if applicable) or the Scrutinized Companies that Boycott Israel List, or is not participating in a boycott of Israel.

As Addenda are considered binding as if contained in the original specifications, it is critical that the Consultant acknowledge receipt of same. The submittal may be considered void if receipt of an addendum is not acknowledged.

Addendum No. 1 Dated 1-30-26 Addendum No. 2 Dated 2-12-26 Addendum No._____ Dated_____

Addendum No._____ Dated_____ Addendum No._____ Dated_____ Addendum No._____ Dated_____

Type of Organization (please check one): INDIVIDUAL (_) PARTNERSHIP (_)
CORPORATION (✓) JOINT VENTURE (_)

GHD Services Inc. — Firm Name
813.971.3882 — Telephone

_____ — Fictitious or d/b/a Name
16-1229774 — Federal Employer Identification Number (FEIN)

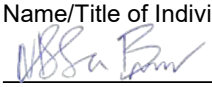
Sunbiz Filing Address: 2055 Niagara Falls Blvd, Suite 3 — Home Office Address

Niagara Falls, NY 14304 — City, State, Zip
96 — Number of Years in Business

5904 Hampton Oaks Parkway, Tampa, FL 33610 — Address: Office Servicing Charlotte County, other than above

Jesse Davis, PE, Project Manager — Name/Title of your Charlotte County Rep.
786.447.7972 — Telephone

Melissa Burns, PE, Vice President — Name/Title of Individual Binding Firm (Please Print)

 — Signature of Individual Binding Firm
February 23, 2026 — Date

melissa.burns@ghd.com — Email Address

(This form must be completed & returned)

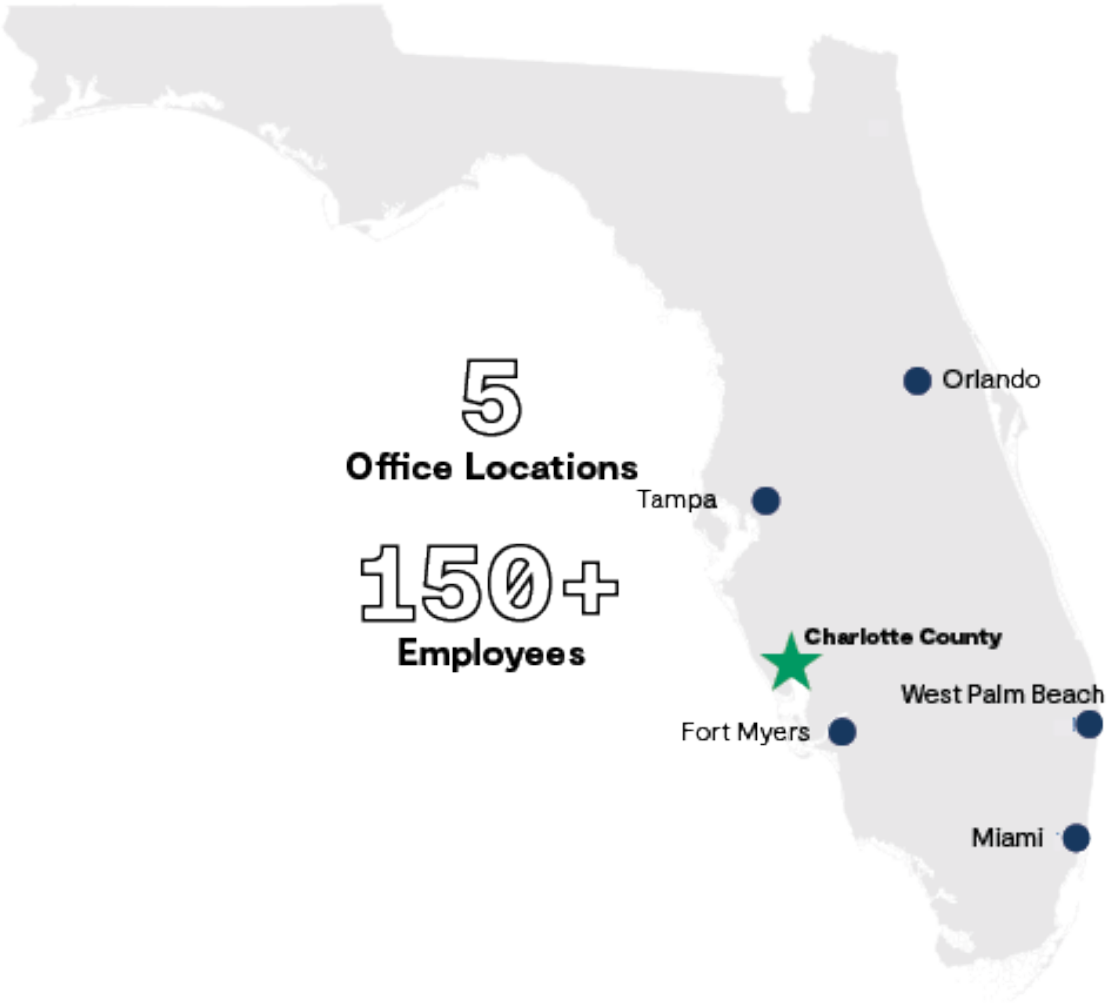
IX

→ Location

→Location

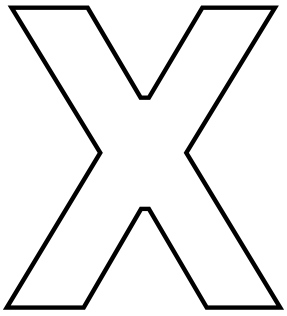
GHD maintains a strong Florida presence, with five offices strategically located in **Fort Myers, Tampa, Miami, West Palm Beach, and Orlando**. Our proposed project team is based in Tampa and Miami, ensuring rapid mobilization and responsiveness to Charlotte County's needs.

Colliers Engineering & Design will provide surveying services out of their Fort Myers, FL office for this project.



Our proximity to Charlotte County allows us to provide timely field investigations, attend in-person meetings, and respond quickly to project needs.

Our local knowledge of Florida's coastal conditions, permitting environment, and contractor market further enhances our ability to deliver a successful project for Charlotte County.



→ Litigation

PRIVILEGED & CONFIDENTIAL

13 February 2026

Re: Request for Disclosure of Litigation History – GHD Services Inc.

To whom it may concern:

GHD is able to inform you that there have been claims notified in the normal course of business, none of which we believe are material to the services which are the subject of your RFP. There are however presently no significant ongoing contract failures, no criminal matters, and there have been no judgments against GHD Inc. within the last 10 years.

GHD discloses the following lawsuits involving GHD within the past seven (5) years:

Case Name	Case No. and Court	Circumstances	Outcome
Fifty Feeley LLC v. Savannah OZF Feeley Ave LLC, Dustcom Limited Inc., GHD Services Inc. Thomas & Hutton Engineering Co. and Trustgard Insurance Company v. Fifty Feeley LLC, Savannah OZF Feeley Ave LLC, Dustcom Limited Inc., GHD Services Inc. Thomas & Hutton Engineering Co.	2024-May-9 State of Georgia State Court of Chatham County Civil Action No. STCCV24-00068	Related to a gravel-surfaced storage yard that was sold where GHD provided a limited scope of pre-design geotechnical work. In each case, the claimant has brought GHD into the lawsuit without merit or basis. GHD denies liability and is actively contesting the claim.	Ongoing
Oncor Electric Delivery Company LLC v. Barton Malow and 21st Century Salvage, Inc.	2025-Jun-20 State of Texas Tarrant County Court Cause No. 2025-000921-1	Related to demolition activities performed by a subcontractor engaged by GHD. During the course of the work, the subcontractor struck and damaged a utility pole. The utility company is seeking reimbursement for repair costs. GHD denies liability, and settlement discussions between the subcontractor and the utility owner are currently underway.	Ongoing
The Great Lakes Water Authority v. De-Cal Odle Inc., and GHD Services Inc.	2024-Oct-10 State of Michigan 3rd Judicial Circuit County of Wayne Case No. 24-014977	Related to the installation of replacement tank liners at a sewer overflow facility where GHD performed post installation inspection work. Claimant is seeking damages resulting from tank liner failure. GHD contests liability and maintains that the tank liner failure was caused by an installation issue or product defect issue.	Ongoing
D&J Investments of Cenla LLC, et al.	2020-Oct-7 United States District Court; Western District of Louisiana; Alexandria Division; Case No. 1:23-CV-00508	Related to environmental remediation work performed at a defunct facility. GHD was named as a third-party in two separate lawsuits with identical allegations for environmental damages caused by the facility, although no specific allegations were stated against GHD.	Ongoing
Abbo-Bradley, et al.; Perini; Connor / Class Action	2011-Jan-11 State of New York; Supreme Court; County of Niagara; Case No. 1:18-cv-00304	Related to remediation and maintenance services at Love Canal, City of Niagara Falls. GHD was named in two separate class action lawsuits with the same alleged underlying incident. Claimants seek indemnity related to damages to their property. GHD contests liability.	Ongoing. GHD dismissed from two of the bell-weather cases (Abbo-Bradely and Pierini).
Elevation Life Church v. GHD Services Inc.	2021-Apr-7 Circuit Court of the Fourteenth Judicial Circuit; Bay County; Florida; Case No. 22-CA-688	Related to dewatering work GHD performed for the FDEP at an adjacent property. The church sought indemnity related to damages settlement to the property. GHD contested liability.	Settled. GHD dismissed.
Zahn Farms LLC v. A&M Concrete & Construction Inc. et al.	2023-Jan-12 State of Wisconsin; Circuit Court; Oconto County; Case No. 22-CV-55	Related to design work for a manure process building and waste transfer system in Oconto County, Wisconsin. Claimant sought damages. GHD contested liability.	Settled. GHD dismissed.
John and Marcella Martusis, individually and as Trustees of the John W. Martusis & Marcella Martusis Revocable Trust v. Pulte Homes of South Carolina, Inc. et al	2021-Nov-11 State of South Carolina; County of Berkeley; Court of Common Pleas; Ninth Judicial Circuit; Case No.: 2020-CP-08-01185	Related to geotechnical evaluation and quality control testing. Pulte sought indemnity related to damages claimed by owners of a property which was built on top of organic- laden materials.	Settled. GHD dismissed.

XI

→ Minority Business

→Minority Business

GHD is committed to fostering diversity, equity, and inclusion in all aspects of our work.

We actively seek to engage minority and small business partners on all our projects and support workforce development initiatives in the communities where we work.

Our team's diversity strengthens our ability to deliver innovative, community-focused solutions for Charlotte County.

Appendix A

→ Resumes

Jesse Davis, PE, ENV SP

Project Manager

Experience

19 years

Years with Firm

7 years

Qualifications/Accreditations

– MS, Ocean Engineering 2005

– BS, Ocean Engineering 2004

– Registered Professional Engineer: FL

Relevance to the project:

Jesse has 18 years of experience in coastal engineering and has provided design, permitting, environmental field assessments, and construction phase services for marina, dredging and sediment modeling projects located throughout the United States (East coast, West coast, & Great Lakes Region), the Caribbean, and South America. A career highlight includes playing a key role (from conception to construction) for the permitting, design, and construction of a nature-based island storm protection system at the Fort Pierce City Marina that was the recipient of the 2016 ASCE-COPRI Project Excellence Award for large projects.

Additional project experience includes living shorelines, marinas, boat ramps, dredging, shoreline stabilization, seawalls, propeller wash modeling, vessel berthing and mooring calculations, disaster response, design of fall protection for water control structures, inspection of breakwaters and water control structures, water quality sampling, hazwaste and drycleaner site sampling and contaminated soils removal oversight.

Project experience

Legion Park: Seawall to Living Shoreline Conversion
Role: Project Manager
Client: City of Miami
Location: Miami, FL
Date(s): December 2022 - Ongoing

The City authorized GHD to perform a structural evaluation of the stability of the piles in December 2022 and to perform a regulatory and agency review to determine what steps would be necessary to secure the site while the City considered overall Project direction. A drone aerial and 4D topographic survey was completed to aide in the stabilization plan for the previously excavated area. Design of the temporary structure included stable stone sizing and underlayment (foundation). Rock tonnage and backfill quantity estimates were calculated based on the design approved by the City. GHD corresponded with regulatory agencies to obtain authorization for the temporary design. The City hired GHD to provide construction oversight while the Contractor stabilized the site.

Little River Pocket Park
Role: Project Manager
Client: City of Miami
Location: Miami, FL
Date(s): 2023 - Ongoing

This project seeks to replace ~80 linear feet of waterfront seawall in the Shorecrest Neighborhood. The wall also includes double that length in turn back retention allowing both for the site to be raised for flood protection as well as alignment modification to avoid mature Mangrove Trees. The site includes civil works of an outfall, kayak launch, pedestrian ladders, and design around an existing seawall with no existing data.

South Bayshore Lane Roadway and Drainage Improvements - Phase II Stormwater Pump Station
Role: Project Manager
Client: City of Miami
Location: Miami, FL
Date(s): 2021 - 2022

Worked to upsize a 15" outfall through a seawall to 36". GHD served as a subconsultant to ADA Engineering. The project included designing and analyzing an outdated seawall with limited as-built and modification records. Detailed analysis

and construction plans provided to ensure the integrity of the seawall and upland improved infrastructure such as high-density condominiums and apartments. Project challenges included an accelerated schedule, proximity design components, and limited as-built structural information.

Miami Beach Storm Protection: Planning, Modeling, Permitting and Design Services
Role: Project Manager
Client: Miami-Dade County RER-DERM
Location: Miami-Dade County
Date(s): 2020 - Ongoing

Miami-Dade County beaches are known worldwide as a prime tourist destination and are important to the local economy. The County's beaches also provide resiliency and storm protection for billions of dollars in beachfront infrastructure and create habitat for protected animal species, including sea turtles. As part of the County's Sea Level Rise Strategy, GHD developed a coastal modeling tool (hydrodynamic, wave, and sediment transport) to aid in identifying and developing cost effective mitigation and adaptation strategies to maintain a resilient coastline, both now and into the future. GHD is now assisting the County with obtaining a permit modification to streamline truck haul beach nourishments along 13 miles of beach shoreline and developing a preliminary breakwater design to mitigate an erosion hotspot located on Miami Beach. Mr. Davis is the project manager.

Matheson Hammock Park Seawall Replacement and Repairs
Role: Project Manager
Client: Miami-Dade County RER-DERM
Location: Miami, FL
Date(s): 2021 - Ongoing

Project Manager responsible for the replacement of 675 linear feet of sea wall on the upland side of a marina to mitigate sea level rise and sunny day flooding events that limit public enjoyment of this iconic Miami park. This is the first step of a larger coastal protection master plan to ensure protection of the 630 acre Matheson Hammock Park located along the western shoreline of Biscayne Bay that has been open to the public since 1930. The historic park includes a 243 slip marina, restaurant, large wading lagoon and beach, mangrove trails, and numerous historic buildings and structures constructed of Miami's politic limestone. Critical challenges include conflicts with a historic building and utilities, planning accommodations for future park projects, and considering alternatives within FEMA Hazard Mitigation Grant funding limitations.

Top of Seawall Study
Role: Project Manager
Client: Indian Creek Village
Location: Indian Creek Village, FL
Date(s): October 2022 - November 2022

The Village is a man-made island located north of Miami Beach and along the eastern extents of northern Biscayne Bay. The island encompasses ~250 acres, a private golf club, residential homes, and ~13,800 LF of mixed shorelines (the majority of which are seawalls). The Village Police station is situated on the Miami Beach barrier island and contains ~375 LF of shoreline (seawall). Nick provided a review of the top of wall requirements for the surrounding local municipalities and counties.

Mid-Town Seawall Replacement Design, Permitting and Construction Management
Role: Deputy Project Manager and Senior Coastal Engineer
Client: Town of Palm Beach
Location: Palm Beach, FL
Date(s): 2020 - Ongoing

Mr. Davis is serving as the Deputy Project Manager and Senior Coastal Engineer for this multidisciplinary data collection, planning, design, and permitting project associated with replacement of approximately 2,700 linear feet of aging seawall that protects North Ocean Boulevard and upland properties from storm impacts. The project area is along the Town's Mid- Town shoreline, which has a managed and maintained beach project providing storm protection and recreational benefits to residents and visitors. Both cantilevered and tie-back wall alignments will be evaluated, followed by a permit application submittal to the Florida Department of Environmental Protection. The GHD Team will finalize the design in 2021 and assist the Town with bid phase services.

Historic Turtle Kraals & C Dock Assessment
Role: Project Manager
Client: City of Key West
Location: Key West, FL
Date(s): 2021 - Ongoing

GHD was contracted by the City of Key West to perform a visual condition assessment, develop restoration recommendations and determine the level of effort required to permit and construct an historically accurate restoration of the concrete pile pens that define the Historic Turtle Kraals within the Key West Bight Marina at the Historic Seaport.

Victor Tirado, PE

QA/QC

Experience

21 years

Years with Firm

8 years

Qualifications/Accreditations

– BS, Applied Arts and Civil Engineering	2004
– Registered Professional Engineer: FL, SC, CA	
– Occupational Safety and Health Administration (OSHA) 30-Hour construction Safety and Health	2005

Relevance to the project:

Victor Tirado has 21 years of experience in multidisciplinary team management, planning, engineering, and construction. His emphasis is in delivering complex multi-modal transportation and waterfront and marine projects, that range from heavy infrastructure projects to environmental remediation and coastal adaptation projects. Victor has successfully delivered projects that include piers, wharves bulkhead and quay walls, dry docks, large navigation channels, wetland restorations, living shorelines, highway grade separation, bridge and roadways, marine terminal planning, recreational marinas, and site development, among other elements across the world. Victor's international network and skills are an instrumental resource of knowledge in the development of this project. Victor is also a six-year veteran of the United States Navy.

Project experience

MSC Cruises Terminal Expansion at PortMiami
Role: Quality Control
Client: Arquitectonica
Location: Miami, FL
Date(s): 2019 - 2022

MSC Cruises is proposing a new terminal expansion to be located along the eastern end of Dodge Island. GHD was retained by Arquitectonica, and later DeSimone, on behalinear feet of MSC Cruises to provide coastal and mooring basis of analysis report that includes the development of site environmental conditions, underkeel clearance and scour potential during vessel arrival/ departure, mooring and berthing analysis. Including considerations for passing vessel, a top of wall assessment, and the recommendation of a minimum finished floor elevation for the terminal building based on storm surge, wave overtopping, and sea level rise projections.

North Bulkhead Realignment Project at PortMiami
Role: Project Manager, Designer of Record
Client: CBNA
Location: Miami, FL
Date(s): Ongoing

GHD is providing engineering support service during the tender phase of the Design-Build Finance North Bulkhead Realignment project as the Designer of Record to CBNA, a Bouygues Subsidiary. Acting as the Project Manager and Designer of Record for the design team. The project proposes to realign over 7,000 linear feet of wharf 54 feet into the navigation channel along berths #1 through #6 of PortMiami. The proposed method for the widening is by using caissons to minimize construction times on-site, reduce vibrations to the port access tunnel and reduce potential risk of failure of the existing bulkhead.

Bulkhead Repairs and Rehabilitation at Port Everglades
Role: Technical Advisor
Client: Port Everglades
Location: Fort Lauderdale, FL
Date(s): 2021 - Ongoing

GHD is providing corrosion engineering, geotechnical engineering, and coastal engineering services to the Port via TY Lin. The scope of work includes the repair of over 10,000 linear feet of bulkhead along the northern end of Port Everglades. Provided technical advisory support services to the design team on corrosion and coastal aspects of this project.

T 858.633.4809 | **M** 619.252.9167 | **E** victor.tirado@ghd.com

West Trail Shoreline Stabilization

Role: Civil Manager
Client: San Mateo County Harbor District
Location: El Granada, CA
Date(s): 2020

Served as Civil Manager with oversight of the design of the West Trail Living Shore project. The project proposes to create a dune system on the seaward side existing pedestrian trail that provides access to Mavericks Beach. The new dune system will serve as a soft solution to coastal erosion and sea-level rise adaptation to reduce erosion of the trail while providing native dune habitat. The proposed project area spans 500 linear feet of shoreline.

Cardiff Beach Living Shoreline - Construction Management

Role: Project Manager
Client: City of Encinitas
Location: Encinitas, CA
Date(s): 2019

Served as Project Manager responsible for the oversight of the construction of the Cardiff Beach Living Shore project. The project created a dune system on the seaward side of Highway 101 (Hwy 101) on Cardiff State Beach to serve as a soft solution to coastal erosion and sea-level rise adaptation to protect a vulnerable segment of the roadway while providing native dune habitat. The project area spans 2,900 linear feet (~0.5 mile) of shoreline, from the Chart House to the north to the Seaside Parking Lot to the south. The dune was developed along the back beach to minimize impacts to the existing recreational beach. The project also included the coordination and protection of a newly installed subsea sewer outfall.

Cardiff Beach Living Shoreline

Role: Civil Project Manager
Client: City of Encinitas
Location: Encinitas, CA
Date(s): 2018 – Ongoing

Served as Civil Project Manager with oversight of the design team to prepare final engineering construction documents for the Cardiff Beach Living Shore project. Also assisted in the environmental permitting process of the project. The project proposes to create a dune system on the seaward side of Hwy 101 on Cardiff State Beach to serve as a soft solution to coastal erosion and sea-level rise adaptation to protect a vulnerable segment of the roadway while providing native dune habitat. The proposed project area spans 2,900 linear feet (~0.5 mile) of shoreline, from the Chart House to the north to the Seaside Parking Lot to the south. The dune is being developed along the back beach to minimize impacts to the existing recreational beach. The project also included the coordination and protection of a newly installed subsea sewer outfall.

Carlsbad Boulevard Beach Access

Role: Technical Director
Client: City of Carlsbad
Location: Carlsbad, CA
Date(s): 2020

Served as Technical Director providing engineering services to the City of Carlsbad for the rehabilitation of the existing beach access structures on the coastal bluff from Pine Avenue to Tamarack Avenue. These structures include promenades at both the top and bottom of the bluff, four access stairways on the slope between the promenades, and the seawalls and retaining walls protecting the bluff and these structures. The scope included investigations of structural elements of the promenade, develop preliminary repair alternatives and associated costs. GHD re¬fined the alternatives and conducted a value engineering effort to quantify the costs and benefi¬ts of the beach access repair and improvement. GHD's scope also includes facilitating a Coastal Development Permit and other environmental permits that are required for the project. The scope also includes the preparation of a full Plans, Specifications, and Estimate (PS&E) document set, bid support and construction support.

South Carlsbad Boulevard Climate Adaptation Project

Role: Technical Director
Client: City of Carlsbad
Location: Carlsbad, CA
Date(s): 2020

The City of Carlsbad has engaged GHD to provide planning and engineering services to address the cliff retreat and sea-level rise hazards to public safety in this area, advance planning and design for the managed relocation and realignment of a portion of Carlsbad Boulevard to a landward location to address the vulnerability of this transportation corridor, enhance accessibility to trails and non-motorized transportation routes to reduce greenhouse gas emissions and develop a collaborative adaptation vision for Carlsbad Boulevard and its surroundings, including the opportunity for recreation, beach access, habitat restoration and natural shoreline protections. A cliff hazard analysis study area spans from the bluffs from at Terramar Point/Cerezo Bluffs (Cerezo Drive) to the mouth of Batiquitos Lagoon. The roadway realignment design area extends from just north of Palomar Airport Road to the South Carlsbad State Beach Campground. The project will involve five phases, which will develop preliminary design concepts, cliff retreat analysis, conceptual design alternatives, preliminary engineering infrastructure design, and a final report.

Melissa K. Burns, PE

Structural Engineer

Experience

14 years

Years with Firm

8 years

Qualifications/Accreditations

– BS, Civil Engineering 2011

– Registered Professional Engineer: FL, GA, LA, SC

Relevance to the project:

Melissa is a marine and linear infrastructure structural engineer and project manager. She has 14 years of design and management experience. Her projects have encompassed a wide range of private and public facilities. Projects she's worked on include feasibility evaluations, design, modeling, and computation of structural elements, as well as production detailing of plan sets within all design phases. Melissa works on projects from the preliminary engineering pursuit to the final design of structures for both design-build and conventional projects. She is experienced in both linear infrastructure and coastal projects ranging in complexity from simple structures to multi-phase projects accounting for future-year expansion capacities.

Project experience

Matheson Hammock Park Seawall Replacement
Role: Deputy Project Manager and Structural Engineer of Record
Client: Miami-Dade County PROS
Location: Miami, FL
Date(s): 2021 - 2024

Melissa is the engineer of record responsible for replacing ~700 linear feet of sea wall on a marina to mitigate sea level rise and sunny day flooding events. Flooding limits public enjoyment of this iconic Miami park. This project is the client's first step to ensure the protection of the 630-acre Matheson Hammock Park, located along the western shoreline of Biscayne Bay, which has been open to the public since 1930. The historic park includes a 243-slip marina, restaurant, large wading lagoon and beach, mangrove trails, and numerous historic buildings and structures constructed of Miami's oolitic limestone. The design phase is complete; this project is in the final permitting and budgetary allocation. Critical challenges included alignment conflicts with a historic building and utilities, planning accommodations for future park projects, and considering alternatives within grant funding limitations.

Little River Pocket Park
Role: Structural Engineer of Record
Client: City of Miami
Location: Miami, FL
Date(s): 2023 - Ongoing

This project seeks to replace ~80 linear feet of waterfront seawall in the Shorecrest Neighborhood. The wall also includes double that length in turn back retention allowing both for the site to be raised for flood protection as well as alignment modification to avoid mature Mangrove Trees. The site includes civil works of an outfall, kayak launch, pedestrian ladders, and design around an existing seawall with no existing data.

South Bayshore Lane Roadway and Drainage Improvements - Phase II Stormwater Pump Station
Role: Structural Engineer of Record
Client: City of Miami
Location: Miami, FL
Date(s): 2021 - 2022

Worked to upsize a 15" outfall through a seawall to 36". GHD served as a subconsultant to ADA Engineering. The project included designing and analyzing an outdated seawall with limited as-built and modification records. Detailed analysis and construction plans provided to ensure the integrity of the seawall and upland improved infrastructure such as high-density condominiums and apartments. Project challenges included an accelerated schedule, proximity design components, and limited as-built structural information.

Legion Park Seawall
Role: Engineer of Record
Client: City of Miami
Location: Miami, FL
Date(s): December 2022 – August 2023

Melissa was the Engineer of Record responsible for assessment of existing seawall construction, design of temporary upland stabilization, construction oversight, and redesign of the project. The City of Miami hired a contractor to construct the Legion Park Seawall and Non-Motorized Vessel Ramp. The contractor encountered unforeseen construction debris and installed concrete piles utilizing a 'trench box' method that excavated/ removed the debris and limestone rock to a depth of 4-5 feet above the pile tip elevation. The City authorized GHD to perform a structural evaluation of the stability of the piles in December 2022 and to perform a regulatory and agency review to determine what steps would be necessary to secure the site while the City considered overall project direction. A drone aerial and topographic survey and a stabilization plan for the excavated area was authorized by the City in February 2023. The GHD team worked quickly to complete the aforementioned steps for this difficult and urgent situation. The next steps will include redesign of the existing boat ramp and upland for City residents to enjoy.

Confidential Client - Tampa, FL Seawall Investigation
Role: Structural Engineer of Record
Client: Confidential Client
Location: Tampa, FL
Date(s): December 2021

Melissa was an engineer of record for a due diligence inspection of a concrete panel seawall in Tampa, FL. The task included the inspection of concrete seawall along the Hillsborough River in Tampa, FL. Melissa completed the inspection and condition assessment on the concrete seawall and will provided repair alternatives with estimates of probable construction costs. Additionally, repairs and recommendations included a future development analysis considering client anticipated land use, environmental conditions, and flood and sea level rise risk.

Turtle Kraals & C-Dock Task Orders
Role: Deputy Project Manager and Structural Engineer of Record
Client: City of Key West
Location: Key West, FL
Date(s): September 2021 – Ongoing

Melissa's two combined roles include the engineering assessment and conceptual repair alternatives to ~450 linear feet of C-Dock in the Historic Key West Bight Marina. Melissa oversees the underwater inspection and condition assessment on the concrete seawall and will provide repair alternatives with estimates of probable construction costs. The paired tasks of the Historic Turtle Kraal include underwater evaluation of structural piling for the educational recreation of the historic Key West Turtle harvesting industry. The project site inspection was in 2021 with the final reports and evaluations completed Spring 2022.

Jeffrey Lake Seawall Replacement
Role: Structural Engineer of Record
Client: City of North Port
Location: North Port, FL
Date(s): August 2022 – 2024

Melissa is the structural engineer of record for the replacement of 100 linear feet of seawall located at Jeffrey Lake in North Port, Florida. The project includes partial existing seawall removal, client permitting requirements that seawall replacement construction activities be located inland of the existing wall, and a limited right of way with drainage and overhead utilities. The design is also extremely accelerated due to construction grant funding, and the project timeline from NTP to issuance of final construction documents, including geotechnical and survey site investigations, is 45 days. The project is currently finishing construction (2024). The design included a value engineering alternative of a driven sheet pile wall instead of the client-provided concept of a concrete stem wall with footing to decrease the construction schedule, increase seawall integrity, and decrease residential impact during construction through reduced footprint.

Mid-Town Seawall Replacement
Role: Structural Engineer
Client: Town of Palm Beach
Location: Palm Beach, FL
Date(s): September 2020 – 2023

Melissa was responsible for the type selection, layout, and design of the mid-town seawall replacement in Palm Beach, Florida. The section of the wall to be replaced is 2,700 linear feet. The wall provides storm protection for Ocean Boulevard, fronting the Atlantic Ocean. Originally built in 1929 and partially repaired in 1957 and 1974, the toe wall was added in 1987, eight groins were added in 2001, and sheet pile repairs were done in 1957. Design challenges include limited as-built information for the varied existing seawall, conflicting lifeguard and restroom facilities, aesthetic clocktower, and an underground outfall. The project has completed design and is in the permitting and budgetary process. The proposed anchored steel sheet pile wall will protect the town from 100-year storm events, including extreme scour. The design will allow for future wall expansion should the town determine they want to raise the wall elevation for additional resiliency and protection.

Jon A. Brent, PE, SE

Structural Engineer

Experience

13 years

Years with Firm

4 years

Qualifications/Accreditations

– MS, Civil Engineering 2013
– BS, Civil Engineering 2011
– Registered Professional Engineer: FL, GA, IL, NJ, VA
– Registered Structural Engineer: GA, IL
– Port Engineering Certificate, 2021 (ASCE)
– Inland Maritime Port Manager, 2019 (IAMPE)

Relevance to the project:

Jon is a marine structural engineer and GHD's maritime and coastal service line leader for the Americas. He has over 12 years of design, management, and construction experience. Projects he's worked on include infrastructure and private facility projects such as port, waterfront, complex drainage, and water resources structures; high and heavy load cargo terminals; pipe racks and process towers for oil and gas facilities; and low-rise buildings. Jon led the planning, modeling, computation, and detailing of structures for projects subject to a wide range of environmental conditions across North America. He's a subject matter expert for asset management initiatives and grant applications. Jon's experience includes facility planning and site layout, 3D-modeling and construction drawing development, project specifications, and discipline coordination for new construction, renovations, structural upgrades, and adaptive reuse projects. He will bring his wide range of experience to his work for the City of Miami Beach.

Project experience

Matheson Hammock Park Seawall Replacement
Role: Structural Engineer
Client**:** Miami-Dade County PROS
Location**:** Miami, FL
Date(s): 2021 - Ongoing

Jon provided structural oversight and reviews for the design of 675 linear feet of seawall on the upland side of the Matheson Hammock Park marina. The project mitigated sea level rise and sunny day flooding events that limit public enjoyment of this iconic park. This is step one by the client to ensure protection of the 630-acre Matheson Hammock Park located along the western shoreline of Biscayne Bay. The historic park includes a 243-slip marina, restaurant, large wading lagoon and beach, mangrove trails, and numerous historic buildings and structures constructed of Miami's oolitic limestone. Currently, the project is in the pre-construction phase, with permits submitted to the respective agencies for review and approval. Construction is anticipated to begin in late 2024. Critical challenges the design team faced include conflicts with a historic building and utilities, planning accommodations for future park projects, and the consideration of alternatives with respect to the grant funding limitations.

Mid-Town Seawall Replacement
Role: Structural Engineer of Record
Client**:** Town of Palm Beach
Location**:** Palm Beach, FL
Date(s)**:** 2020 - Ongoing

Jon is a structural engineer responsible for the structural design, detailing, and specifications for the mid-town seawall replacement in the Town of Palm Beach, Florida. The section of wall to be replaced is 2,700 linear feet providing storm protection for Ocean Boulevard, fronting the Atlantic Ocean. The wall was originally built in 1929 and partially repaired in 1957 and 1974, with the addition of toe wall in 1987, eight groins in 2001, and sheet pile repairs in 1957. Design challenges include limited as-built information for the existing seawall, conflicting lifeguard and restroom facilities, and an underground outfall. The proposed anchored steel sheet pile wall will provide the Town protection from 100-Year storm events, including extreme scour. The design will allow for future wall expansion should the town determine they want to raise the wall elevation for additional resiliency and protection.

Dune Restoration Project
Role: Structural Engineer
Client**:** Oneida General Mechanical Corporation
Location**:** Naval Station Mayport, Jacksonville, FL
Date(s): October 2023 - Ongoing

Jon leads structural engineer for GHD services on an Oneida-led design-build team (Continental Heavy Civil Corp (CHC) as the contractor) for replacement of approximately 64,000 cubic yards of sand eroded by Hurricanes Ian and Nicole in 2022 from the 6,000 linear feet of shoreline fronting the Atlantic Ocean. GHD Geotechnical Engineers and Geologists are investigating a Dredged Material Management Area on the base for use as the sediment source. GHD will lead the design and permitting and will produce conformed plans and specifications for CHC to construct the project.

Jon is also leading the design of boardwalk replacements. 7 boardwalks were destroyed by the storms and 6 of the 7 will be replaced as a component of the project. Two of the boardwalks will meet the ABA Accessibility Standards. The design will also include high-security fencing. Construction is anticipated for 2024.

Hurricane Matthew FEMA CAT B. Emergency Berm Restoration
Role: Resident Engineer
Client**:** St. Johns County Board of County Commissioners
Location**:** St. Johns County, FL
Date(s)**:** 2020 - 2022

Jon was the resident engineer a design-build project to create a sand berm feature along 3 individual shoreline segments along the St Johns County coastline. The project will repair damage from two devastating storm events (Hurricanes Matthew and Hurricane Irma), provide future storm protection, and provide a replacement for crucial species habitat and nesting grounds. 11 miles of new berm will constructed along the upper portion of the beach between the dune and mean high water line. An estimated 500,000 cubic yards of sand will be sourced from nearby upland mines and truck hauled to the project site. GHD lead the project design, permitting, and environmental monitoring effort, and will continue to support through construction. The design-build team fast-tracked a 60% design submittal and Florida Joint Coastal Permit (JCP) application for the project, both of which were complete within 6 weeks. This fast-tracked schedule constraint was required for FEMA-authorized funding. Other project challenges included multi-agency coordination, limited site access, and sensitive coastal habitats.

Sheet Pile Bulkhead Inspections and Repairs
Role: Engineer of Record
Client**:** FMC Corporation
Location**:** Carteret, NJ
Date(s)**:** 2021 - Ongoing

Jon is a structural engineer responsible for the inspections of an existing sheet pile bulkhead at the former FMC Corporation Site as part of the routine annual AOC-1 inspection activities related to site remediation. His inspection work includes a visual evaluation of the existing condition of the wall and UT thickness measurements to assess corrosion. The outcome of these inspections allowed for repair and replacement options to be presented to the client, including order-of-magnitude costs, with careful consideration given to the potential impact of each option to the contaminated site. Structural inspections, assessments, and recommendations are provided in accordance with ASCE Manual of Practice. GHD collaborated with the client to select the appropriate repair option and developed permitting plans for the sheet pile wall repairs which utilize an innovative FRP panel system. Construction is anticipated for 2024.

Liberty Harbor Marina Development
Role: Lead Structural Engineer and Planner
Client**:** Continental Heavy Civil Corp.
Location**:** Brunswick, GA
Date(s): 2021 - Ongoing

Jon led the conceptual planning for the redevelopment of Liberty Harbor, an abandoned ship-building basin with 16 acres of open water and tidally influenced salt marsh. The planning included the layout and optimization of the floating docks to accommodate vessels up to 100 ft in length, the siting, sizing, and orientation of the upland dry stack structures, and the general arrangement of the marina office building, restaurant and convenience store, and all associated parking and public spaces. The project also included the development of a basis of design and planning for future coastal studies, geotechnical investigations, environmental field surveys, and permitting requirements in preparation for the final design.

Steven Janosik, PE

Geotechnical Engineering and Soil Strengthening

Experience

21 years

Years with Firm

12 years

Qualifications/Accreditations

– BS, Civil Engineering, Cum Laude 2003

– Registered Professional Engineer: FL, MD, TN

Relevance to the project:

Steven Janosik, PE, has over 21 years of experience. He specializes in blending forensic engineering assessments with accompanying expert witness testimony, geotechnical engineering design, and construction materials testing (including threshold inspections of reinforcing steel, pile inspections, and construction vibration monitoring). Steven's forensic engineering expertise is focused on evaluating subsidence-related damage to structures, earthen slope and retaining wall failures, construction vibration damage, and pavement failures. His geotechnical engineering design expertise encompasses sinkhole risk assessment and mitigation, shallow and deep foundation design, pavement design, slope stability analyses, bulkhead and retaining wall design, and site suitability studies.

Project experience

Legion Park Seawall
Role: Geotechnical Consultant
Client**:** City of Miami
Location**:** Miami, FL
Date(s)**:** December 2022 - Ongoing

Steven provided geotechnical consultation during the assessment of driven concrete sheet piles. The piles were designed and installed by others. Existing subsurface conditions were determined to be inappropriate for the proposed sheet pile. GHD developed recommendations for backfilling the sheet pile removal areas. We also gave ongoing consultation during the general site grading and compaction phase.

Mid-Town Seawall Replacement
Role: Senior Geotechnical Engineer
Client**:** Town of Palm Beach
Location**:** Palm Beach, FL
Date(s): March 2021 - September 2021

GHD is providing turn-key solutions for the Town of Palm Beach Mid-Town Seawall Replacement project. The project includes existing condition assessments, historical structure review, scour analysis, new seawall panel design, resiliency studies, and geotechnical engineering. Our geotechnical engineering services includes subsurface soil exploration along the seawall segment. It also involves global stability analyses of the proposed seawall geometry considering the existing soil conditions and anticipated parameters for the respective extreme (short-term) and typical (long-term) scenarios. Steven identified the critical cross-sections and soil zones, conducted the global stability analyses, and prepared the report deliverables. The minimum seawall panel depth was determined based on parametric analysis of the short-term stability under scoured conditions.

Seawall at Tampa Water Works Park
Role: Geotechnical Engineer
Client**:** Hardeman Kempton & Associates
Location**:** Tampa, FL
Date(s)**:** August 2004 - September 2004

GHD provided geotechnical services and anchoring system documentation for the evaluation of an existing seawall at Tampa Water Works Park as part of the City of Tampa downtown redevelopment efforts. Steven conducted the field observations, which included excavation of tie-back anchors with a backhoe. Soil borings were also conducted along the landside and waterside of the seawall, and panel reinforcement was evaluated with a pachometer and cores.

T 813.257.0650 | **M** 813.716.4263 | **E** steven.janosik@ghd.com

Ford Street Canal Filter Marsh - Weir and Boardwalk Refinement and BMAP Allocation
Role: Senior Geotechnical Engineer
Client**:** City of Fort Myers
Location**:** Fort Myers, FL
Date(s)**:** January 2015 - April 2015

GHD provided turn-key engineering design services for this successfully constructed project. Our geotechnical services focused on providing sheet pile parameter design for a weir that encompassed an existing wetland. Steven planned and coordinated the subsurface exploration, performed parametric analyses for sheet pile section requirements, and prepared the engineering report. A challenge involved considering Fort Myers' requirement for the sheet piles to be constructed of vinyl or composite (non metallic) materials. Steven also performed an analysis of timber pile penetration depth given anticipated compressive and lateral loading for a wood boardwalk that trended along a portion of the filter marsh weir.

Carlene Avenue Seawall Replacement
Role: Senior Project Engineer (Engineer of Record)
Client**:** City of Fort Myers
Location**:** Fort Myers, FL
Date(s): June 2012 - August 2012

GHD evaluated the viability of repairing an existing seawall. The seawall needed to allow for a new Elliptical Reinforced Concrete Pipe (ERCP) to be installed through the existing structure. Based on our visual assessment, we determined Fort Myers needed a replacement seawall. The new wall needed to provide sufficient stability for planned drainage improvements, which included raising the seawall cap elevation ~16 inches. Steven planned and coordinated the subsurface exploration program and provided engineering design services. His efforts included local and global stability analyses of the proposed seawall section (vinyl sheet pile) and seawall anchoring design. Project challenges included Fort Myers' preference for the less rigid vinyl sheeting, tie-in design for the transitions into the existing seawall segments, and reinforcement design around the ERCP outfall opening.

Dam Assessment - Meadow View Lake Dam (TerraLargo Division)
Role: Senior Engineer (Engineer of Record)
Client**:** Private Client
Location**:** Lakeland, FL
Date(s)**:** June 2020 - July 2020

The subject dam was located between the TerraLargo residential subdivision and the Carlton Arms Apartments, at the northern bank of the Meadow View Lake reservoir. The dam consists of an earthen embankment that is protected within the emergency spillway segment by uniform section fabric form concrete mats (Armorform). GHD conducted review of prior engineering assessment reports and As-Built drawings, followed by non- destructive inspection of the facility. Visual observations were primarily made along 12 transects, coinciding with east-west construction joints between the Armorform mats. The transects were up to 172 to 212 feet long and were spaced approximately 13 to 14 feet apart. Notable defects were marked in the field, photographed, and discussed in a final report. Engineering opinions regarding the overall stability of the dam were also discussed, along with repair and mitigation recommendations.

Boat Channel Slope Stability Analyses - Esplanade Lake Club Development
Role: Senior Engineer (Engineer of Record)
Client**:** Private Client
Location**:** Fort Myers, FL
Date(s): July 2018 - August 2020

GHD provided geotechnical services and slope stability analyses for the construction of a boat channel in the residential development. Steven conducted site visits and bulk sample collection of on-site materials, followed by parametric analyses of short-term construction stability and long-term slope stability for multiple construction slope configurations and final slope configurations. Challenges with this project included modeling of the weak clayey silts along the south side of the channel alignments. Steven prepared the final engineering report as engineer ofr, and GHD monitored construction of the boat channel. Following the channel construction, Steve developed as-built slope models from surveyed cross-sections for final stability analyses of the sloped embankments along both sides of the channel.

Nancy Zhou, PhD, PE

Coastal Engineering

Experience

9 years

Years with Firm

< 1 years

Qualifications/Accreditations

– PhD, Coastal Engineering 2016
– BEng, Port, Waterway, and Coastal Engineering 2010
– Registered Professional Engineer: NJ, NY, OH

Relevance to the project:

Nancy is a Coastal Engineer with 9 years of professional experience both in the U.S. and abroad. She has worked on major coastal projects in the U.S., especially in the State of New York. She has extensive experience in the design of climate resilient flood protection system (flood wall, revetment, etc.), assessment of storm risks and hazards, flood mapping, coastal resiliency study, climate change evaluation, inspection of waterfront structures, evaluation of hydraulic structures (tide gates, sluice gates, conduits, etc.), numerical simulation of coastal and oceanic processes, Hydrologic and Hydraulic analysis, met-ocean data collection and analysis, scour analysis and countermeasure design, riverine sediment transport (turbidity curtain, cofferdam, etc.), shoreline erosion and stabilization study, mooring analysis, tsunami risk analysis and tsunami hazard analysis, analysis of marine vessel traffic, forecasting/hindcasting of hurricanes and extratropical storms, extreme value analysis, Cost and Schedule Risk Analysis, and Environment Impact Analysis.

Project experience

PortMiami - North Bulkhead Berths 1-6 Realignment Project
Role: Coastal Engineer
Client: PortMiami
Location: Miami, FL

- Led the estimate of scour at the North Bulkhead wall caused by the propellers of the design vessels.
- Recommended scour countermeasures based on the scour depth and flow speed.
- Carried out met-ocean analysis, which included the analyses of tide, wind, wave, and current under normal condition and storm condition.
- Analyzed the sea level rise scenarios and provided recommendations for the selection of sea level rise projections and design water levels.
- Carried out mooring analysis of Oasis class, Conquest class, Dream class, and Renaissance class cruises for berths 1-6.
- Estimated the passing vessel's effect on the moored cruises.
- Led the study of harbor resonance and its effect on the moored vessels.

Inspection and Remediation Plans of Bulkhead
Role: Coastal Engineer
Client: Confidential Nationwide Food and Beverage Company
Location: Brooklyn, NY

- Led the inspection of the bulkhead in Brooklyn, NY to assess the general condition of the existing bulkhead, identify observable deterioration, and evaluate whether major repairs/replacements will be required.
- Assigned the condition ratings to the bulkhead structure.
- Provided the remediation plans with steel sheet pile and other options.
- Reviewed and compared the inspections and preliminary cost estimates provided by other consulting firms.

Lower Manhattan Coastal Flood Resiliency (Big U)
Role: Coastal Engineer
Client: New York Mayor's Office for Recovery & Resiliency, New York City Economic Development Corp. (NYCEDC)
Location: Lower Manhattan, NY

- Led the evaluation of the flood risk of Lower Manhattan area in New York City by modeling the surface flooding, the rainfall, and the flow in the sewage and drainage system using integrated coastal and stormwater management model system.
- Carried out large scale hurricane/storm modeling on High Performance Computing center.
- Optimized the design of flood countermeasures in the Two Bridge Area, New York, NY to protect the neighborhood.

Reconstruct of the Porpoise Bridge Tide Gate
Role: Coastal Engineer

Client: New York City Department of Design and Construction (NYCDDC)
Location: Queens, NY

- Led the numerical simulation of the flow field near Porpoise Bridge and the adjacent neighborhood, which are located in the densely-populated Flushing Bay area in the heart of Queens, NY, under extreme coastal storms and sea level rise.
- Led the metocean analysis.
- Led the Hydrology & Hydraulics analysis for the project area.
- Provided the design criteria for the reconstruction of Porpoise Bridge tide gates.

North/West/South Battery Park City Resiliency Projects
Role: Coastal Engineer
Client: Battery Park City Authority (BPCA)
Location: New York

- Led the metocean analysis, which includes the analyses of tide, wind, wave, and current.
- Derived the design water level and design wave condition with different return periods.
- Optimized the height of wall for the proposed alternatives of floodwalls.
- Led the development of 2D and 3D wave model systems to assess the vulnerability of the project site.
- Provided the design criteria for the proposed flood resistance alignment.
- Analyzed the interaction between wave and the flood resistance structure.
- Led the analysis of the impact of flood protection system to the adjacent neighborhood.

Tompkinsville Esplanade and Pier
Role: Coastal Engineer
Client: NYC Economic Development Corporation (NYCDEDC)
Location: Tompkinsville, NY

- Led the design of revetment at the Tompkinsville Esplanade using rocks and ECOncrete components.
- Led the determination of metocean design values (wind, wave, current, and sea level rise) at Tompkinsville, NY.
- Led the calculation of wave loads on the Tompkinsville Pier, including the loads on the piles, the pile caps, and the deck.

Springmaid Pier Rebuild Projects
Role: Coastal Engineer
Client: Doubletree Resort by Hilton
Location: Myrtle Beach, SC

- Led sediment transport modeling and analyzed the beach morphology and local scour near Springmaid Pier at Myrtle Beach, SC.
- Led the metocean analysis.
- Led the development of ocean wave model system to provide design criteria for the rebuild of Springmaid Pier.
- Analyzed the interaction between waves and the proposed pier structure.
- Prepared the technical memo.

Living Breakwaters: Design and Implementation
Role: Coastal Engineer
Client: SCAPE Landscape Architecture/Governor's Office of Storm Recovery (GOSR)
Location: New York

- Reviewed the stone gradation report.
- Reviewed the beach profile bathymetry survey report.
- Reviewed the method statement, equipment data, sample stone placement summary, and stone installation work plan.

Empire Offshore Wind Farm - Detailed Design of Foundations
Role: Coastal Engineer
Client: Empire Offshore Wind LLC
Location: New York

- PE reviewer of scour design for offshore wind pipelines and turbine foundations.
- PE reviewer of the hydrodynamic load, including the loads of normal/extreme/abnormal waves, breaking wave, wave run-up, etc. on the offshore wind foundations in Empire offshore wind farm in New York Bight.
- PE reviewer of the analysis of hurricanes and nor'easters profiles and their effect on the offshore wind turbines.
- PE reviewer of icing load on secondary elements of offshore wind turbines.
- PE reviewer of scour specification for offshore wind turbine foundations.

Gateway Program - Hudson River Ground Stabilization
Role: Coastal Engineer
Client: Kiewit Engineering (NY) Corp., Gateway Development Commission (GDC)
Location: New York

- Led the scour analysis at the cofferdam in Hudson River to be built for the Hudson Tunnel, which included the estimate of scour using empirical formula and numerical tools (HEC-RAS simulation of hydraulics and sediment transport).
- Led the study of metocean design values (wind, wave, current, and sea level rise).
- Led the design of openings on the combi-walls to minimize the head difference between the inside and outside of the cofferdam.
- Led the ship wake analysis, which included the investigation of marine vessel traffic in lower Hudson River in year 2023 using the in-house digital vessel traffic model, and calculation of ship wake heights and periods.

Michael Barnett, PE, BC.CE

Permitting

Experience

41 years

Years with Firm

7 years

Qualifications/Accreditations

- ME, Coastal & Oceanographic Engineering 1987
- BS, Ocean Engineering 1981
- Board-Certified Coastal Engineer (BC.CE) from the Academy of Coastal, Ocean, Port & Navigation Engineers
- Registered Professional Engineer (Civil): FL, AL, LA, MS, and TX

Relevance to the project:

Michael has over 41 years of experience in coastal engineering. He has led the feasibility, planning, engineering design, permitting, construction, and contract document preparation for beach restoration and nourishment projects, seawalls, living shoreline and muck removal projects in the southeastern US. He has led offshore sand source investigations for restoration and nourishment projects in Florida and managed the construction of a mitigative artificial reef as an element of the Miami Harbor Deepening Project. Michael served as the former chief of the Florida Department of Environmental Protection's (FDEP's) bureau of beaches and coastal systems for nearly eight years.

Project experience

Mid-Town Seawall Replacement Project
Role: Project Manager
Client**:** Town of Palm Beach
Location**:** Palm Beach, FL
Date(s)**:** September 2020 - Ongoing

Michael is serving as project manager for this multidisciplinary data collection, planning, design, and permitting project associated with replacement of ~2,700 linear feet of aging seawall that protects South Ocean Boulevard and upland properties from storm impacts. The project area is along the Palm Beach's shoreline, which has a managed and maintained beach project providing storm protection and recreational benefits to residents and visitors. The GHD Team conducted a coastal engineering assessment of the seawall and collected site-specific topographic survey data and the acquisition of a series of soil borings to characterize the subsurface soil conditions. A combination of anchored and, in special consideration areas, cantilevered wall alignments were evaluated and designed. The design plans and specifications were finalized and transmitted to Palm Beach as issued for bid in May 2023 along with an engineers' opinion of probable construction cost. A permit application was submitted to the FDEP in summer 2022, and the permit was obtained in December 2022. GHD assisted Palm Beach with bid phase services which were temporarily postponed. Seawall construction is anticipated to commence in November 2025.

Miami-Dade County Coastal Erosion Hotspots: Modeling, Planning & Design Services
Role: Senior Coastal Engineer
Client**:** Miami-Dade County RER-DERM
Location**:** Miami-Dade County, FL
Date(s): October 2019 - April 2020

The Miami-Dade County Division of Environmental Resources Management (DERM) retained GHD to provide coastal modeling, planning, permitting, and design services to identify and mitigate coastal erosion hotspots along 13 miles of the Miami-Dade County shoreline, which extends from FDEP reference monuments R-7 to R-74 and comprises beach shorelines extending from a northern boundary of Sunny Isles to the Government Cut north jetty. Michael provided quality assurance reviews of the shoreline modeling and evaluation, and assessments of permit feasibility of proposed modifications to the existing sediment management protocols currently being employed by the County and the US Army Corps of Engineers, Jacksonville District.

St. Johns County FEMA Berm Project
Role: Project Director
Client**:** Continental Heavy Civil Corp.
Location**:** St. Johns County, FL
Date(s)**:** March 2021 - March 2023

Michael served as the project director and engineer of record for a design-build project to restore 20 miles of eroded dunes throughout St. Johns County that were

impacted by Hurricanes Matthew and Irma. He led permitting coordination and application submittal to FDEP for the placement of approximately 750,000 cubic yards of truck-haul sand mechanically placed on the eroded dunes. Construction began in September 2021; sand placement and dune vegetation activities were completed in December 2022. Post-construction submittals were provided to FDEP in February 2023, and the project was closed in March 2023.

Seawall Inspection and Design Services, Living Shoreline Project
Role: Project Manager
Client**:** The Randolph Company/Greenacres Ponce Inlet, LLC
Location**:** Ponce Inlet, FL
Date(s)**:** 2018

Mike served as the project manager for professional services to the owner of a 3.5 acre parcel fronting the Halifax River. The property is being improved to create a Coastal Science Center to be operated by the University of Florida. In October 2018, the design team conducted a detailed visual inspection and measurement of an existing 468 ft seawall displaying both partial failure and advanced deterioration. A report was transmitted with a recommendation to replace the seawall. An estimate of design, permitting and construction costs was completed in December 2018, with provision for inclusion of living shoreline elements to demonstrate additional shore protection techniques as a learning and teaching element.

Dune Restoration Project - Naval Station Mayport
Role: Project Director/Engineer of Record
Client**:** Oneida General Mechanical Corporation
Location**:** Naval Station Mayport; Jacksonville, FL
Date(s): October 2023 - Ongoing

Michael is engineer of record and project director for GHD services on an Oneida-led design-build team (Continental Heavy Civil Corp [CHC] is the contractor) for replacement of approximately 64,000 cubic yards of sand eroded by Hurricanes Ian and Nicole in 2022 from the 6,000 linear feet of shoreline fronting the Atlantic Ocean.

GHD geotechnical engineers and geologists investigated a dredged material management area on the base for use as the sediment source. GHD submitted a permit application and is finalizing the design, resulting in the production of conformed plans and specifications for CHC to construct the project. Sic dune walkovers destroyed by the storms will be replaced. Construction is anticipated for 2024.

.***Pillar Point Living Shoreline Project | West Trail Shoreline Stabilization***

Role: Coastal Engineer
Client**:** San Mateo County Harbor District
Location**:** Pillar Point Harbor District, CA
Date(s)**:** 2018 - 2019

West Trail is a north-south oriented trail located along the western edge of Pillar Point Harbor (pedestrian and emergency vehicle access to the Mavericks surf break) that has been subject to erosion and emergency repairs since 1994. Michael provided final quality control and assurance verifications and sign-off on design methodology for providing shore protection to the trail as well as coordinating other design elements to protect infrastructure that is also subjected to erosional stresses along this shoreline segment. Project construction was recently completed.

Shoreline Erosion and Living Shoreline Stabilization Study
Role: Coastal Engineer
Client**:** LG2 Environmental Solutions, Inc.
Location**:** Marine Corps Air Station, Cherry Point, NC
Date(s)**:** September 2017 - January 2018

Michael served on the project team that conducted an inspection and assessment rating of eight existing bulkheads fronting the Neuse River along portions of the installation's 15,500 ft shoreline. A site visit to document and evaluate the potential for implementing living shoreline solutions along the entirety of the eroding shoreline was conducted; conceptual level design drawings and cost estimates to implement these solutions was undertaken, and an envision pre-assessment checklist to assist with planning of a cost-effective, resource-efficient and adaptable shoreline stabilization project was completed. Site work was conducted on the bulkheads in October 2017, and the remainder of the shoreline was assessed in July 2018. A final report was transmitted in September 2018.

Jingwei Li, PE

Civil/Stormwater Engineering

Experience

10 years

Years with Firm

10 years

Qualifications/Accreditations

– MS, Civil and Engineering	2014
– BS, Civil Engineering	2012
– Registered Professional Engineer: FL	

Relevance to the project:

Jingwei is a professional engineer with nine years of experience, whose primary focus has been on hydrological and hydraulic modeling, groundwater analysis and modeling, stormwater planning, environmental mitigation, water resources and Geographical Information Systems (GIS). She is experienced in analyzing surface water and groundwater data and GIS databases, developing groundwater, hydraulic and hydrological models. Her work history also includes Asset Management, Phase I and II Environmental Site Assessments, Spill Prevention and Countermeasure Control Plans and Stormwater Pollution Prevention Plans. Jingwei possesses skills that give clients confidence that their projects will have an effective outcome.

Project experience

Miami-Dade County Environmental Engineering Services
Role: Project Manager
Client: Miami-Dade County
Location: Miami-Dade County, FL
Date(s): 2022 - Ongoing

GHD is under contract to perform various activities and services for Miami-Dade County's National Pollutant Discharge Elimination System (NPDES) Program. The scope of services includes stormwater structure inspection and cleaning, water quality and sediment sampling, nutrient and bacteria removal efficiency analysis for stormwater treatment devices, estimation of outfall pollutant loadings, and developing Bacteria Pollution Control Plan (BPCP) for Total Maximum Daily Loads (TMDL) Waterbodies. The purpose of this project is to identify possible sources of pollution, which contributes to high concentrations of bacteriological and nutrient parameters of concern in surface waters of Miami-Dade County and to calculate nutrient reduction efficiency of various stormwater treatment devices.

Miami-Dade County Stormwater Master Plan Updates
Role: Co-located Engineer and Project Manager
Client: Miami-Dade County
Location: Miami-Dade County, FL
Date(s): 2020 - Ongoing

GHD is under contract to update Stormwater Master Plan for Miami-Dade County under the Equitable Distribution Program (EDP). The Stormwater Master Plan updates consist of four sections: system-wide groundwater elevation updates, stormwater quality updates, stormwater models updates and prioritization of capital improvement projects. The plan estimates the effects of existing and future land-uses on flood protection and water quality and identifies infrastructure and management strategies to accommodate those uses and mitigate future risk and damage. Scopes and Tasks include implementing Miami-Dade County WASD (2040, 2060, 2080 and 2100) groundwater scenarios in the stormwater models, analyzing pollutant runoff loading estimates into Biscayne Bay, analyzing dredging impacts on water quality, developing County-wide salinity profiles, and providing engineering strategies and alternatives for ranking and prioritizing capital projects.

South Florida Water Management District Flow Data Analysis
Role: Co-located Engineer and Project Manager
Client: South Florida Water Management District
Location: South Florida
Date(s): 2013 - Ongoing

Conducted structure analysis, rating analysis, improvement and development of the District's culverts, spillways and weirs. Responsible for analyzing, generating and processing Computational Fluid Dynamics (CFD) flow data. Provided

guidelines and planning of field measurements. Flow data analysis provides better simulation of the actual flow volumes, which helps improving overall water balance and utilize water resources more efficiently, especially during hurricane seasons.

Watershed Asset Management Plan (WAMP)
Role: Project Engineer
Client: City of Fort Lauderdale
Location: Fort Lauderdale
Date(s): 2019

GHD is under contract to perform a multi-year Watershed Asset Management Program. The contract has included multiple task work orders that have been supported by Ms. Li; including Community Rating System (CRS) analysis, identifying grant sources, developing strategic goals and objectives of the WAMP, conducting condition assessment & capacity analysis for stormwater pump stations SS1 & SS2, and surveying/GIS mapping of unverified stormwater assets (2,700+ red dots) using the City-issued Geodatabase.

Target-Lowe's Groundwater Monitoring
Role: Project Manager
Client: Target Corporation and Lowe's
Location: Hialeah, FL
Date(s): 2014 - Ongoing

Performed semi-annual groundwater elevation contouring and groundwater water quality sampling and analysis for Lowe's at the Site (formerly Hialeah Speedway Development Facility) since 2018. Conducted semi-annual interior ambient and exterior methane monitoring events at the Site since 2014. Prepared a Contingency Plan for Target Corporation in 2018.

Water Resources, Hydrology and Hydraulic Modeling
Role: Project Manager and Consultant Engineer On-Site
Client: South Florida Water Management District
Location: West Palm Beach, FL
Date(s): 2014 - 2020

Conducted structure analysis, rating analysis, improvement and development of the District's culverts, spillways and weirs. Assistance in analyzing, generating and processing Computational Fluid Dynamics (CFD) flow data. Provided guidelines and planning of field measurements for streamgauging/field group. Flow data analysis provides better simulation of the actual flow volumes, which helps improving overall water balance and utilize water resources more efficiently, especially during hurricane seasons. Work involves using Excel, UNIX scripting, HEC-RAS, MIKE SHE, MATLAB, Mathematica, ArcGIS, Google Earth and AutoCAD.

Soil Management Plan - Lincoln Park Playground
Role: Project Engineer
Client: City of Fort Lauderdale
Location: Fort Lauderdale, FL
Date(s): 2019

Under contract to prepare a Soil Management Plan (SMP) for the Lincoln Park Playground in Fort Lauderdale. The City of Ft. Lauderdale fenced the former incinerator area, cleaned contaminated soil on the property, and capped contaminated soil on the Lincoln Park playground back in 2009. In 2019, the City intended to demolish the existing playground equipment located at Lincoln Park and replacing it with new playground equipment.

Methane Mitigation, Operations Maintenance and Monitoring
Role: Project Engineer
Client: Aventura Charter High School
Location: Hallandale Beach, FL
Date(s): 2018 - Ongoing

Work included assistance in designing a methane vapor barrier & venting system for Aventura Charter High School; site inspections during the construction of the methane venting system; preparation of a site-specific Operations, Maintenance, and Monitoring Manual (OMMM) for Aventura Charter High School which provides descriptions of the Methane Gas Mitigation System and activities required for system monitoring, maintenance, reporting and including health and safety procedures.

Multiple Phase I and II ESA Projects for Various Private Clients
Role: Project Engineer
Client: Various Private Clients
Location: Hialeah, FL
Date(s): Ongoing

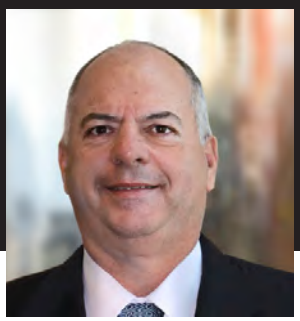
Collected groundwater and soil samples and conducting environmental site assessments and database analysis. Projects included hazardous waste assessment, remediation and soil management at agriculturally developed land, golf courses and manufacturing facilities.

Amazonian Ecosystems Project
Role: GIS Analyst
Client: HyDROS Lab
Location: Norman, OK
Date(s): 2014

Conducted data analysis using software S and SAS; updated and developed GIS Geodatabases; used GIS for pre- and post-processing of hydrologic and hydraulic data.

Alberto Argudin, PE, CGC, LEED AP

Lead Civil Engineer



Experience

48 years

Qualifications/Accreditations

– BS, Civil Engineering University of Florida 1976
– Professional Engineer: Florida No. 23547 (Est. 1980)
– Certified General Contractor: Florida No. 023790 (Est. 1982)
– Certified Engineering Contractor: Miami – Dade County No. E98100 (Est. 1990)

Relevance to the project:

Mr. Argudin is critically focused on ensuring our client's experience of our services is consistently positive. He's had the privileged of serving the South Florida community for over 48 years and has been involved in a variety of projects that include all aspects of site engineering, including stormwater management, water distribution, sewage collection and transmission, transportation, solid waste management, environmental studies, permitting, and construction management. As Project Manager, design engineer, and contractor, Mr. Argudin has been responsible for the planning, design, permitting, and construction supervision of municipal and institutional projects, as well as for industrial, commercial, and residential clients.

Project experience

Morningside Seawalls & Living Shorelines Project between NE 55th Terrace & NE 65th St. & Biscayne Bay
Role: Lead Civil Engineer
Client**:** City of Miami Resilience and Public Works
Location**:** Miami, FL

The project encompasses three locations: NE 61st Street and Biscayne Bay, NE 59th Street and Biscayne Bay, and NE 55th Street. The main goal of the project is to comply with the newly adopted "Resiliency Standards for Tidal Flood Protection," the measure sets minimum construction standards for seawalls and other tidal flood barriers to strengthen coastal resilience and mitigate the effects of tidal flooding. The project is funded through the Resilient Florida Grant Program (RFGP) 2021-2022 (Federal and Miami Forever Bond. ADA has been retained to provide Professional Engineering services to fortify the bulkhead line/shoreline and ensure baywalk continuity by raising or replacing deteriorated seawalls and providing new baywalks along public Right of Way (R/W). The scope includes design/permitting for seawall raising or replacement, dredging, bursting outfall pipes, installing manhole structures, tidal valves, manatee grates, rip-rap, guardrails, signs and pavement markings, concrete and asphalt removal, milling, resurfacing, street lighting, and landscaping (soft/hard), while restoring the right-of-way. Mr. Argudin serves as the Principal and QA/QC Manager for the project.

Shorecrest Roadway and Drainage Improvements Project
Role: Lead Civil Engineer
Client**:** City of Miami Office of Capital Improvements (OCI)
Location**:** Miami, FL

ADA provided engineering design for the roadway and drainage improvements in the Shorecrest area located south of NW 79 Street. The purpose of the project is to address the flooding currently being experienced in the area due to rising King Tide conditions being experienced in the City's coastal areas. Services rendered include project management, engineering analyses, design and permitting in addition to construction phase services such as shop drawings review, procurement support, responding to RFIs, performing periodic inspections to ensure construction is in adherence to the approved Contract Documents and completed in accordance with City Standards and Specifications. The level of effort includes development of plan and profile drawings, details, summary of pay items and cost estimating. ADA will coordinate with the County's RER and FDOT for their permitting requirements. Mr. Argudin is assisting with all QA/QC Reviews.

San Marco Island Drainage Pump Station and Storm Sewer System
Role: Lead Civil Engineer
Client**:** City of Miami Capital Improvements Program (OCI)
Location**:** Miami, FL

As part of the General Construction Engineering

Observation Contract with Miami, ADA provided staff to observe and document the construction of a new stormwater pump station with drainage wells and an overflow outfall to Biscayne Bay. The stormwater system also included French drainage and gravity storm sewers. Mr. Argudin served as the Principal and QA/QC Manager for the project.

South Bayshore Lane Stormwater Pump Station
Role: Lead Civil Engineer
Client**:** City of Miami Department of Capital Improvements & Transportation Public Works
Location**:** Miami, FL

ADA in collaboration with the CITP department, played a pivotal role in designing a new stormwater pump station for Phase II of the Roadway and Drainage Improvements along South Bayshore Lane. This project not only aimed to alleviate current flooding issues but also addressed the escalating challenges posed by rising King Tide occurrences along the city's coastal zones. ADA's engineering expertise added significant value through various tasks, including conducting 6 Subsurface Utility Engineering (SUE) explorations to identify potential utility conflicts, performing a benthic survey in the Bay to assess the need for rip rap at the outfall, designing marine structures for the seawall replacement with a larger outfall, and structurally designing flex panels for the generator structure. Additionally, ADA enhanced the structural design for the generator structure to accommodate the flex panels, incorporated landscape architecture elements, and provided potential additional geotechnical work as required. These comprehensive engineering efforts contributed significantly to the effectiveness and resilience of the stormwater management system in the area.

Cargo Gate Modifications and Process Improvements– Design, Permitting, and Construction Phase Services for PortMiami
Role: Lead Civil Engineer
Client**:** ***PortMiami***
Location**:** Miami, FL

ADA served as the consultant focusing on environmental and drainage improvements for the relocation of the SFCT access gates and the associated roadway development, covering an 8-acre area at PortMiami. A key component of the project was to enhance the environmental integrity of the site, particularly concerning its drainage into Biscayne Bay through existing outfalls on the island's north side. Overseeing the project's progress through rigorous review of shop drawings, responding to RFIs from the contractor, attending progress meetings, conducting periodic site visits, and coordinating field changes with the contractor to afeguard the ecological aspects of the project. Mr. Argudin served as the Principal.

D6, Specialized Consultant, Services NPDES Program –Outfall Assessment – Collins Ave. Drainage System from, NE 159th Street to NE 174th Street
Role: Lead Civil Engineer
Client**:** Florida Department of Transportation (FDOT)
Location**:** Florida

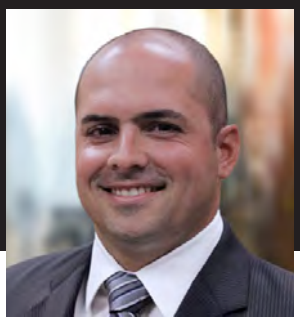
ADA Engineering played a crucial role as part of the Design team, providing professional engineering services to the FDOT Drainage Department for evaluating seven outfalls along Collins Avenue. The project involved comprehensive activities, including data collection from FDOT D-6 and the City of North Miami Beach, field inspections to assess outfall conditions and locations, hydraulic analysis for capacity evaluation, identification of repair needs and retrofit measures, preliminary structural evaluations, coordination meetings, and the development of the Outfall Assessment Report – Phase II. Additionally, ADA updated the GIS Geo Database with inspected outfalls and facilitated coordination meetings with FDOT throughout the project. Mr. Argudin served as the Principal and QA/QC Manager for the project.

G-58 Gate Replacement Project
Role: Lead Civil Engineer
Client**:** South Florida Water Management District (SFWMD)
Location**:** Florida

Under an Operation, Maintenance, Repair, Replacement, & Rehabilitation contract with SFWMD, ADA's design team was tasked with several critical assignments. This included the replacement of four slide gates, the construction of a new marine headwall and control/generator building, and the addition of two stilling well structures, along with associated electrical improvements. Furthermore, ADA entered into a joint partnership with the Florida Department of Transportation (FDOT) under a Locally Funded Agreement to undertake the slip-lining of four large culverts. The project site, known as the G-58 structure, is situated within Arch Creek Park on NE 135th Street in the City of North Miami. ADA also provided Engineering During Construction (EDC) services, involving periodic inspections, shop drawing reviews, response to Requests for Information (RFIs), and assistance with project closeout tasks. Despite challenges like buried artifacts, soil contamination, and environmental considerations, ADA navigated these complexities while ensuring public access to the park during normal hours. Mr. Argudin served as the Principal and QA/QC Manager for the project.

Albert Argudin, CGC

Lead Construction Manager



Experience

23 years

Qualifications/Accreditations

– MS, Construction Management, Florida International University 2004

– BS., ESS, University of Florida 1999

– Certified General Contractor: Florida No. 1510041 (Est. 2005)

Relevance to the project:

Albert Argudin has over 23 years of professional consulting experience in the construction and engineering industry. Mr. Argudin has served as the project manager for countless roadway and drainage improvement projects throughout South Florida. While being diversified in both horizontal and vertical construction projects, he has proven to have the ability and expertise to manage project constraints, such as time and cost, while delivering projects that comply with the construction documents and exceed client expectations.

Project experience

Morningside Seawalls & Living Shorelines Project between NE 55th Terrace & NE 65th St. & Biscayne Bay
Role: Lead Construction Manager
Client**:** City of Miami Resilience and Public Works (RPW)
Location**:** Miami, FL

The project encompasses three locations: NE 61st Street and Biscayne Bay, NE 59th Street and Biscayne Bay, and NE 55th Street. The main goal of the project is to comply with the newly adopted "Resiliency Standards for Tidal Flood Protection," the measure sets minimum construction standards for seawalls and other tidal flood barriers to strengthen coastal resilience and mitigate the effects of tidal flooding. The project funded through the Resilient Florida Grant Program (RFGP) 2021-2022 Federal and Miami Forever Bond. ADA has been retained to provide Professional Engineering services to fortify the bulkhead line/shoreline and ensure baywalk continuity by raising or replacing deteriorated seawalls and providing new baywalks along public Right of Way (R/W). The scope includes design/permitting for seawall raising or replacement, dredging, bursting outfall pipes, installing manhole structures, tidal valves, manatee grates, rip-rap, guardrails, signs and pavement markings, concrete and asphalt removal, milling, resurfacing, street lighting, and landscaping (soft/hard), while restoring the rightof-way. Mr. Argudin will serves as the Project Manager on this project and will be responsible for coordinating our efforts between multiple disciplines, ensuring project milestones are completed on time and within budget and will continue to coordination with the City's RPW.

Shorecrest Roadway and Drainage Improvements Project
Role: Lead Construction Manager
Client**:** City of Miami Office of Capital Improvements (OCI)
Location**:** Miami, FL

ADA is providing engineering design for the roadway and drainage improvements in the Shorecrest area located south of NW 79 Street. The purpose of the project is to address the flooding currently being experienced in the area due to sea level rise and King Tide conditions experienced in the City's coastal areas. The scope of services includes development of plan and profile drawings, details, summary of pay items and cost estimating. ADA is coordinating with the County's RER and FDOT for their permitting requirements. ADA, as the Prime consultant is serving as the project manager in responsible charge of the engineering analyses, design and permitting in addition to construction phase services such as shop drawings review, procurement support, responding to RFIs, performing periodic inspections to ensure construction is in adherence to the approved Contract Documents and completed in accordance with City Standards and Specifications. Mr. Argudin serves as the Project Manager on this project and was responsible for coordinating our efforts between multiple disciplines, ensuring project milestones were

completed on time and within budget and in close coordination with the City's Project Manager.

South Bayshore Lane Stormwater Pump Station
Role: Lead Construction Manager
Client**:** City of Miami Department of Capital Improvements & Transportation Public Works
Location**:** Miami, FL

ADA in collaboration with the CITP department, played a pivotal role in designing a new stormwater pump station for Phase II of the Roadway and Drainage Improvements along South Bayshore Lane. This project not only aimed to alleviate current flooding issues but also addressed the escalating challenges posed by rising King Tide occurrences along the city's coastal zones. ADA's engineering expertise added significant value through various tasks, including conducting 6 Subsurface Utility Engineering (SUE) explorations to identify potential utility conflicts, performing a benthic survey in the Bay to assess the need for rip rap at the outfall, designing marine structures for the seawall replacement with a larger outfall, and structurally designing flex panels for the generator structure. Additionally, ADA enhanced the structural design for the generator structure to accommodate the flex panels, incorporated landscape architecture elements, and provided potential additional geotechnical work as required. These comprehensive engineering efforts contributed significantly to the effectiveness and resilience of the stormwater management system in the area. Mr. Argudin serves as the Project Manager on this project responsible for coordinating our efforts between multiple disciplines, ensuring project milestones are completed on time and within budget and in close coordination with the City's Project Manager.

San Marco Island Drainage Pump Station and Storm Sewer System
Role: Lead Construction Manager
Client**:** City of Miami Capital Improvements Program (OCI)
Location**:** Miami, FL

As part of the General Construction Engineering Observation Contract with Miami, ADA provided staff to observe and document the construction of a new stormwater pump station with drainage wells and an overflow outfall to Biscayne Bay. The stormwater system also included French drainage and gravity storm sewers. Roadway reconstruction was also included in the project scope. Mr. Argudin was the Principal-in-Charge for this contract and was responsible for managing all ADA staff, attending coordination meetings with the city, contractor, and design professionals, reviewing payment requests, and schedule review.

Entrada Neighborhood Drainage and Roadway Improvements and JPA for 8-inch Water Main
Role: Lead Construction Manager
Client**:** City of Miami Capital Improvements Program
Location**:** Miami, FL

Mr. Argudin served as A.D.A.'s Project Manager under the City's Capital Improvements Program for this project. The Entrada Neighborhood is a coastal community located within the southern limits of the City of Miami. ADA was hired by the City's Capital Improvements Program to design flood mitigation and roadway improvements as well as provide Construction Engineering Inspections (CEI) during the construction phase. During the utility coordination phase, we identified multiple undersized water mains within the neighborhood. Subsequently to this finding, the City and the Miami-Dade Water & Sewer Department (WASD) entered into a Joint Participation Agreement (JPA) for the design and construction of a new 8" water main for the area. We also provided CEI services for the construction of the water main.

Cargo Gate Modifications and Process Improvements- Design, Permitting, and Construction Phase Services for PortMiami
Role: Lead Construction Manager
Client**:** PortMiami
Location**:** Miami, FL

ADA served as the consultant focusing on environmental and drainage improvements for the relocation of the SFCT access gates and the associated roadway development, covering an 8-acre area at PortMiami. A key component of the project was to enhance the environmental integrity of the site, particularly concerning its drainage into Biscayne Bay through existing outfalls on the island's north side. Overseeing the project's progress through rigorous review of shop drawings, responding to RFIs from the contractor, attending progress meetings, conducting periodic site visits, and coordinating field changes with the contractor to safeguard the ecological aspects of the project.

Yosef Yip

Coordination with Local Stakeholders

Experience

15 years

Years with Firm

< 1 years

Qualifications/Accreditations

– MUP, Urban Design	2011
– BES, Urban Planning	2010

Relevance to the project:

Yosef has more than 15 years of experience in stakeholder and community engagement with a background in urban planning. His community building informs his ability to implement strategic outreach plans, foster trust through equity-focused partnerships with Community-Based Organization (CBO) and enhance public understanding of technical projects. Yosef has successfully managed small and large-scale initiatives for projects in all phases, while also working on multimodal projects like San Mateo County Transportation Authority's El Camino Real Complete Streets Corridor Plan. He has worked in a variety of sectors including transportation, energy, mobility, active transportation, emergency response, and more.

Project experience

Community Engagement for Recovery and Resiliency
Role: Urban Designer and Outreach Specialist
Client: New York City Mayor's Office
Location: New York, NY

After Hurricane Sandy hit the Northeast coast, Yosef joined the Mayor's Office to research urban design mitigation tools for NYC's "Build It Back" program. For a feasibility study, he collected GIS data concerning impacted properties. He also created infographic material to facilitate discussions for housing recovery options presented at community workshops. The program informed urban design policies with a focus on flood hazard risks and housing typologies.

Community Engagement for Recovery and Resiliency
Role: Planner and Community Outreach Specialist
Client: State of New York
Location: New York, NY

As part of the post-Hurricane Sandy rebuild to resiliency efforts in Greater New York City, Yosef worked with NY State Rising Community Reconstruction Program to assess the vulnerability of devastated areas in Coney Island Peninsula and Sheepshead Bay/Gerritsen Beach. Yosef was responsible for mapping vulnerable community assets, conducting GIS assessments, preparing research material, and coordinating community outreach efforts. Yosef led community discussions for public engagement meetings, which included workshops and charrettes.

Oregon Wildfire Debris Cleanup Taskforce
Role: Public Information Officer
Client: State of Oregon
Location: Oregon

In response to Oregon's 2020 Labor Day wildfires, Yosef served as the public information officer for the fire debris cleanup and recovery taskforce. Yosef collaborated closely with technical and operational staff from the Oregon Department of Transportation, Office of Emergency Management, and Department of Environmental Quality to deliver top priorities for public communications through statewide stakeholder coordination, press releases, video and photography content, talking points, innovative and traditional outreach methods, and in-language material development to increase accessibility to information.

Community Engagement for Park Services
Role: Engagement Task Lead
Client: US Forest Services
Location: Inyo County, CA
Date(s): 2024

Inyo County entered the NEPA/CEQA environmental process to improve road and motorized trail management in Coyote Flat, which includes repairing roads for safety and resource protection, reviewing travel management decisions, and adjusting for resource protection and recreation enhancement. Yosef led the engagement activities during Inyo National Forest's release of the Draft Environmental Assessment (EA). Yosef managed project team expectations (deliverables, timeline, budget,

and review process) through an engagement work plan, facilitated the open house, and developed meeting materials.

Community Engagement for Construction
Role: Communications Task Liaison
Client: Oregon Department of Transportation
Location: Hood River County, OR
Date(s): 2023 – 2024

In support of construction projects between I-205 and Hood River, Yosef's team led the communication and public information plans to inform the public about road closures and safety. Yosef led the social media efforts and liaised with the client on emergency communications, which included managing a media budget, creatives, and quality control.

Community Engagement for NEPA/CEQA
Role: NEPA Engagement Advisor
Client: Micron Technologies Inc.
Location: Bosie, ID and New York, NY
Date(s): 2023 – 2024

Micron is using Federal grants to fund their manufacturing expansion in Boise, Idaho and Clay, New York. As part of the $15 Billion investment and funding agreement, stakeholder and public engagement is required. To facilitate a NEPA environmental process, Yosef advised on engagement approach and developed the scope of work.

Community Engagement for Emergency Management
Role: Logistic Lead
Client: US Army Corps of Engineers
Location: Florida and USVI
Date(s): 2024

Before hurricane landfall, Yosef deployed to two generator missions: 1) Pensacola, Florida, and 2) St. Croix, US Virgin Islands. In response to the power loss and/or cut-off, the emergency response team received a series of deployment orders for generator missions. Yosef was responsible for coordinating logistics to set up and decommission the Generator Staging Bases (GSB), including inventory preparation, equipment, track generators, Bill of Materials (BOM), communication between the client and subcontractors, and site assessment.

Communications and Public Relations
Role: Project Manager
Client: Alameda County Transportation Commission
Location: Alameda, CA
Date(s): 2024 – 2025

Yosef was the project manager who led the communications, public relations, and outreach services to support the agency's public affairs team. As an extension to the agency, Yosef managed the scope of work related to project messaging, publications, website maintenance, strategic communications, paid advertising, media placements, media relations, campaign management, event planning and community outreach, translation and interpretation services, video and photography, and Title VI monitoring. Yosef managed contracting, subcontract agreements, project budgets, deliverable production, and vendor coordination.

Stakeholder Engagement ESG
Role: ESG Stakeholder Specialist
Client: Various Private Sector Clients

Yosef was a key member of an ESG advisory group that evaluated ESG performance and approach to implementing a sustainable business. Yosef conducted ESG-focused surveys for company staff, stakeholders, and board members. Accessibility and simplicity of these surveys were critical in obtaining high response rates. Yosef has worked closely with clients to effectively deliver, communicate, and gather data from their survey respondents. These ESG survey results ultimately fed into a company-wide ESG sustainability vision and action plan.

Communications and Public Relations
Role: Communications and Engagement Lead
Client: City of Sacramento Last Mile Broadband Access
Location: Sacramento, CA
Date(s): 2025 – Ongoing

Yosef managed the community engagement team and developed the strategic engagement plan for the Sacramento Last Mile Connectivity Project, which aims to provide digital equity by expanding affordable, high-speed internet access to underserved communities. Yosef developed and managed a workflow for a 2-year engagement plan. He implemented engagement tactics to outreach to landlords and residents, with the goal of notifying landlords and enrolling residents. Yosef also managed and streamlined deliverables such as a dedicated project website, voicemail, and email, comment management, and project collateral development.

Community Engagement for Transportation Projects
Role: Engagement Task Lead
Client: South Forbes Road/Oso Creek Trail Active
Location: Laguna Niguel, CA
Date(s): 2025 – Ongoing

Yosef managed the public and stakeholder engagement plan for the City of Laguna Niguel's Forbes Road Improvement and Oso Trail Extension Active Transportation Improvement Project (Project), which aims to enhance pedestrian and bicyclist safety and connectivity. Yosef managed and guided the engagement activities and material development, which include a public open house, board presentations, dedicated project website and email, and notification planning.

John C. Phillips, PE

Geotechnical Engineer and Soil Strengthening

Experience

34 years

Years with Firm

14 years

Qualifications/Accreditations

– BS, Civil Engineering 1988

– Registered Professional Engineer: FL

Relevance to the project:

John has over 34 years of consulting experience in geotechnical engineering and construction materials testing. He has practiced in Florida since 1989, accumulating experience with local soil conditions and foundation construction practices. Mr. Phillips has a wide range of geotechnical engineering experience including: soil mechanics, shallow and deep foundations for new structures, groundwater evaluations, and ground improvement techniques. He has been with GHD for over 13 years and manages geotechnical projects for a large variety of private and public clients.

Project experience

Hillsborough River Seawall Study
Role: Senior Geotechncial Engineer
Client**:** Hillsborough County
Location**:** Hillsborough County, FL
Date(s)**:** 2022

GHD provided existing seawall assessment and preliminary design solutions for a private multi building development in downtown Tampa. This project involved consideration for sea level rise and future grading plans. Mr. Phillips developed the geotechnical field exploration plan and provided soil strength parameters to the GHD structural design team. Multiple soil layers were encountered, as well as limestone layers of variable composition and strength.

Sebastian Inlet Jetty
Role: Senior Geotechnical Engineer
Client: Environmental Science Associates
Location: Melbourne Beach, FL
Date(s): 2023 – 2024

GHD performed a subsurface exploration to assist with an evaluation of repeated, (storm-related) loss of soil from behind the North Jetty at Sebastian Inlet State Park. Erosion had been occurring regularly after storm events due to pre-existing pathways below the structure. Values for soil parameters were provided to assist with possible sheet pile well design. Recommendations were also provided by rip-rap modifications.

Wiregrass II Community Development District Geotechnical and Soil Testing Engineering Services
Role: Task Manager and Senior Geotechnical Engineer
Client**:** Wiregrass Community Development District
Location**:** Wesley Chapel, FL
Date(s): Ongoing

GHD is currently providing geotechnical engineering and construction materials testing services for the CDD under this task-order based services contract. The projects to-date have primarily consisted of collector roadway extensions, along with mass grading development for future commercial parcels. Mr. Phillips serves as the Geotechnical Task Manager.

Geotechnical Engineering, Soils and Materials Testing
Role: Project/Contract Manager and Senior Geotechnical Engineer
Client**:** Manatee County
Location**:** Manatee County, FL
Date(s)**:** Ongoing

GHD is currently providing geotechnical engineering and construction materials testing services for the County under this task-order based services contract. Mr. Phillips serves as the Project/Contract Manager and a Senior Geotechnical Engineer for various projects under this contract.

T 813.257.0646 | **M** 813.434.5514 | **E** john.c.phillips@ghd.com **www.ghd.com**

Miscellaneous Professional Services for Geotechnical Materials
Role: Task Manager and Senior Geotechnical Engineer
Client**:** City of St. Petersburg
Location**:** St. Petersburg, FL
Date(s)**:** Ongoing

GHD is currently providing geotechnical engineering and construction materials testing services for the City under this task-order based services contract. Mr. Phillips serves as the Geotechnical Task Manager.

Mast Arms Geotechnical Engineering Monitoring Services
Role: Task Manager and Senior Geotechnical Engineer
Client**:** Hillsborough and Pinellas County
Location**:** Hillsborough and Pinellas County, FL
Date(s)**:** 2019

Monitored the installation of drilled shaft foundations for signal mast arms throughout Hillsborough and Pinellas County.

Pinellas County Multiple Projects
Role: Geotechnical Engineer
Client**:** Pinellas County
Location**:** Pinellas County, FL
Date(s): 2015 - Ongoing

Provided geotechnical engineering services for multiple school building and infrastructure improvements/additions.

Hillsborough County Multiple Projects
Role: Geotechnical Engineer
Client**:** Hillsborough County
Location**:** Hillsborough County, FL
Date(s)**:** Ongoing

Geotechnical engineering for dozens of school projects including Blake High School, several classroom and media center additions, and forensic studies for settlement conditions necessitating remedial recommendations.

Pinch-a-Penny Headquarters and Warehouse Facility
Role: Geotechnical Engineer
Client**:** Pinch-a-Penny
Location**:** Largo, FL
Date(s)**:** 2017 - 2018

Provided geotechnical exploration including soil test borings and test pit excavations that encountered buried landfill materials, requiring removal and replacement prior to conventional shallow foundation construction.

Eagle's Nest District Roadway and Drainage Improvements

Role: Geotechnical Engineer
Client**:** Eagle's Nest District
Location**:** Belleair, FL
Date(s): 2016 - 2018

Provided geotechnical engineering services involving soil borings, roadway cores, and infiltration testing for improvements to existing established neighborhood roadway and drainage system.

Meeghan Casey, PG

Geotechnical Engineer and Soil Strengthening

Experience

19 years

Years with Firm

12 years

Qualifications/Accreditations

– BS, Marine Science 2004

– Registered Professional Geologist: FL

Relevance to the project:

Meeghan Casey is a project geologist with over 19 years of experience in geotechnical investigations. Her experience includes evaluating geotechnical studies for the presence of and potential for sinkhole activity. She also studies the cause of ground or structure settlements. These evaluations have included single residential family housing, town home and condominium complexes as well as commercial structures throughout the state of Florida. Meeghan has also provided expert witness testimony for private clients on sinkhole loss claims. She is known for her experience in due diligence evaluations of undeveloped land for proposed residential and commercial development.

Project experience

Various Subsidence Evaluations
Role: Project Manager, Project Geologist (Geologist of Record)
Client**:** Various Insurance Companies
Location**:** Florida
Date(s): 2005 - 2000

Meeghan acts as a project manager on subsurface evaluations. These evaluations consist of site and distress observations and subsurface exploration that includes the collection and evaluation of data to determine the geotechnical cause(s) of distress for various private and municipal entities. Meeghan's investigations are comprised of geotechnical and geological studies and analysis to evaluate the cause of or the potential for ground or structure settlements.

Land Development and Site Suitability
Role: Site Supervisor/Project Coordinator
Client**:** Wiregrass Ranch and Various Private Clients
Location**:** Wesley Chapel, FL
Date(s)**:** December 2012 – Ongoing

GHD provided geotechnical services for proposed developments, including a series of borings and test pit excavations within proposed parking and drive segments, structure area borings, as well as stormwater collection area borings. The borings were conducted to develop parameters for foundation, drainage and pavement design, and recommendations for associated site preparation and borrow soil suitability for reuse. Meeghan conducted field visits, coordinated the field activities, and attended onsite meetings with project team members.

Water and Wastewater
Role: Project Coordinator
Client**:** TAP Project
Location**:** Hillsborough County, FL
Date(s): 2016

Meeghan coordinated all field activities including determining site access, coordinating between multiple property owners, GHD drill crews, utility providers, and other outside teams working on this public interest project. She was also responsible for obtaining permits required by the local water management districts.

Drilling and Subsurface Exploration
Role: Project Coordinator
Client**:** The Heights/Tampa Armature Works
Location**:** Tampa, FL
Date(s)**:** 2014 – Ongoing

Meeghan coordinates field activities including coordinating with the client, GHD drill crews, utility providers and other outside teams working on this project. She is responsible for obtaining permits required by the local water management districts, coordinating with government officials, and submitting well completion reports.

T 813.257.0626 | **M** 813.334.2377 | **E** meeghan.casey@ghd.com

Various Single Family Home Subdivisions and Multi-Family Town Home Complexes, Transportation Projects, Municipality Projects, Commercial and Shopping Centers
Role: Project Coordinator
Client**:** Various Private Clients
Location**:** Florida
Date(s)**:** 2007 – Ongoing

Meeghan coordinates all activities of GHD's drilling fleet and geotechnical technicians. She is responsible for ensuring underground and overhead utilities have been identified and marked. Additionally, Meeghan is responsible for obtaining any necessary permits required for testing through the local government agencies.

Well Installation and Abandonment
Role: Project Manager/Project Coordinator
Client**:** Various Private Corporations and Government Agencies
Location**:** Florida
Date(s): 2010 – Ongoing

Meeghan is responsible for coordinating GHD's drill crew and technicians for the abandonment of injection, monitor, and potable wells throughout the state. She also coordinates the installation of monitor wells. Meeghan is responsible for obtaining permits required by the local water management districts, as well as the coordination of government officials and submission of well completion reports.

NASA Causeway East Muck Removal Project/Rockledge A Muck Removal Project/Titusville Railroad East and West Borrow Pit Muck Removal Projects
Role: Geotechnical Engineer
Client**:** Brevard County
Location**:** Brevard County, FL
Date(s)**:** 2020 – 2021

Meeghan conducted field work onboard a coring vessel to assist with the vibracore sampling of the sediments in the project areas of Brevard County. Meeghan directed field activities with the project team. In addition to the sediment samples, Meeghan collected surface water samples at each of the vibracore sample locations using a Van Dorn style sampler and collected in-situ turbidity, temperature, conductivity and salinity measurements. Surface water samples were also collected into laboratory supplied containers and submitted for analysis of hardness, as well as to be utilized for elutriate testing of heavy metals.

Hurricane Irma Recovery Support for the St. Marys Waterfront
Role: Project Coordinator
Client**:** City of St. Marys
Location**:** St. Marys, GA
Date(s)**:** 2017

Meeghan coordinated geotechnical drilling activities to support a construction and engineering team to rebuild the waterfront for the City of St. Marys in southeast Georgia. Hurricane Irma had a major impact on the coastal waterfront and FEMA federal funding was made available to rebuild the critical infrastructure. The GHD team collected geotechnical data and performed a coastal engineering assessment in the field.

Mid-Town Seawall Replacement Project
Role: Geotechnical Engineer
Client**:** Town of Palm Beach
Location**:** Palm Beach, FL
Date(s): 2020 – Ongoing

Meeghan coordinated geotechnical drilling activities, right of way permitting and multidisciplinary data collection, associated with replacement of approximately 2,700 linear feet of aging seawall that protects South Ocean Boulevard and upland properties from storm impacts. The project area is along the town's mid-town shoreline, which has a managed and maintained beach project providing storm protection and recreational benefits to residents and visitors.

Atlantic Intracoastal Waterway Sediment Sampling and Analysis
Role: Geotechnical Engineer
Client**:** US Army Corps of Engineers Savannah District
Location**:** Atlantic Intracoastal Waterway, GA
Date(s)**:** 2021

GHD was engaged by USACE Savannah District to undertake a sediment sampling and analysis project. In total, 34 locations were sampled across the 161-mile segment of the Atlantic Intracoastal Waterway (AIWW) under USACE Savannah District's jurisdiction to represent areas for upcoming maintenance dredging and possible beneficial use projects.

Jason Garwood

Resource Surveys

Experience

23 years

Years with Firm

< 1 years

Qualifications/Accreditations

– MS, Coastal Marine and Wetland Studies	2006
– BS, Double majored in Biology and Marine Science, minored in Chemistry	2004

Relevance to the project:

Jason is an estuarine, coastal, and marine ecologist with 23+ years of experience in ecological monitoring, wetland assessments, NEPA compliance, and fisheries science. He is skilled in integrating science with environmental policy and permitting at all levels of government. Jason is author and co-author of 12+ peer-reviewed publications, including research published in the journal Science on tidal marsh resilience, and had his work featured in National Geographic Online. Jason has a diverse work profile that spans estuarine ecology, wetland biogeochemistry, climate change, and food web modeling. He has led multidisciplinary projects and stakeholder engagement, with ongoing national syntheses on topics such as water quality, decomposition and salinization in coastal systems, climate change, and sea level rise.

Project experience

Federal Offshore Energy Regulation - ESA, MMPA
Role: Principal Program Manager
Client: BSEE
Location: New Orleans, LA
Date(s): Jul 2024 - Mar 2025

In charge of federal monitoring of all the offshore energy discovery and infrastructure removal activities for marine protected species for the Gulf of Mexico. Monitored offshore geophysical energy exploration and infrastructure removal activities for compliance under the MMPA, and ESA. Managed data submissions and conducted data analyses for permit compliance. Drafted citations for noncompliance. Drafted reports and coordinated with other federal agencies.

Mid-Brenton Sediment Diversion
Role: Subject Matter Expert
Client: GEC
Location: Baton Rouge, LA
Date(s): Nov 2023 - Nov 2024

Proposed Action for the placement of a sediment diversion through a portion of the Mississippi River and distributaries. Provided expert opinion and analysis and aided with CPRA, USACE, NFWS, and GHD to draft the EIA and EIS.

National Assessment of Wetland Decomposition Rates
Role: Co-Principal Investigator
Client: NOAA
Location: Various Locations
Date(s): May 2021 - Mar 2025

Investigate decomposition rates in tidal wetlands in the US. Coordinated project design, field data collection, sample processing, data analysis and interpretation, and scientific publication.

Coastal Freshwater Salinization
Role: Co-Principal Investigator
Client: NASA Jet Propulsion Laboratory
Location: Various Locations
Date(s): Jan 2024 - Mar 2025

A national review of federal and state agency monitoring efforts on coastal freshwater salinization. Provided site specific data and expert opinion, collaborated on a review and publication on coastal salinization in the coastal USA.

Eastern Oyster Productivity
Role: Co-Principal Investigator
Client: Northeastern University
Location: Boston, MA
Date(s): Jun 2022 - Mar 2025

Investigate spatial differences in oyster productivity in two Florida Estuaries. Provided data and scientific expertise on project methodology, site selection, project parameters, data interpretation, scientific publication.

NOAA System-wide Water Quality, Meteorology, and Nutrient Monitoring
Role: Program Manager
Client: NOAA, FDEP
Location: Eastpoint, FL
Date(s): Sep 2018 - Mar 2024

Federal and state government program for continuous water quality monitoring in Apalachicola Bay, FL. Managed a government run and funded program to collect continuous environmental monitoring. Managed budgets, staff, scientific equipment, data management, analysis, and reporting.

NOAA Climate and Sea Level Monitoring
Role: Manager
Client: NOAA, FDEP
Location: Eastpoint, FL
Date(s): Sep 2018 - Mar 2024

Federal and state government programs for monitoring climate change, sea level, and its environmental effects in Apalachicola Bay, FL. Managed a government run and funded program to collect climate and sea level data. Managed marsh monitoring programs. Managed budgets, staff, scientific equipment, data management, analysis, and reporting.

Modeling Climate Change and Anthropogenic Stressors on an Estuarine Food Web
Role: Co-Principal Investigator
Client: University of West Florida
Location: Orlando, FL
Date(s): May 2020 - Dec 2023

Collaborated with the University to use long-term water quality, climate, river flow data, fish and invertebrate data to model the effects of flow, temperature, salinity, and sea level rise on commercially important fishes, shrimps, and crabs. Provided long-term data sets, sample collection, data management, statistical analysis, development of model parameters and results, peer-reviewed writing.

Global Synthesis of the Effects of Sea Level Rise on Tidal Marshes
Role: Co-Principal Investigator
Client: Macquarie University
Location: Sydney, Australia
Date(s): Jan 2022 - Dec 2022

Used global long-term sea level and marsh elevation data to synthesize the ability of global marshes to keep up with rising sea levels. Provided long-term marsh elevation data, aided with interpretation of results project results. Co-published a peer-reviewed manuscript in Science Magazine.

Evaluating Long-Term Disturbance Impacts on Nekton in a Northern Gulf Estuary
Role: Principal Investigator
Client: NOAA
Location: Eastpoint, FL
Date(s): Mar 2009 - Mar 2024

Investigated multi-decadal response of fishes and invertebrates in Apalachicola Bay, Florida. Managed all aspects of the project, including budget and acquisition of materials and staff needed to complete the project. Conducted data collection, data management, statistical analysis, reporting to federal and state agencies. Drafted peer-reviewed articles.

Spatial Variation in Methane Concentrations Across US Tidal Wetlands
Role: Co-Principal Investigator
Client: Smithsonian Institute, NOAA
Location: Various Locations
Date(s): Feb 2020 - Jul 2024

National synthesis of methane concentrations from wetlands across the coastal U.S. Provided scientific expertise, field sample collection and processing, data interpretation and scientific manuscript and report writing.

Modeling the Effects of River Flow and Streamflow Droughts on Inorganic Nutrients
Role: Co-Principal Investigator
Client: Florida State University
Location: Eastpoint, FL
Date(s): Jan 2022 - Mar 2025

Used existing long-term water quality data to model inorganic nitrogen and phosphorus for Apalachicola Bay. Provided long-term water quality data, aided with development of model parameters and outputs, draft of peer review manuscript and reporting.

Wetland Soil Elevation Dynamics Across Ecosystems in Apalachicola Bay
Role: Co-Principal Investigator
Client: Florida State University
Location: Tallahassee, FL
Date(s): Jan 2021 - May 2022

Assessment of vertical changes in wetland soils in relation to environmental disturbances.

Managed field staff, provided research infrastructure, worked with university staff to produce a final data product including a peer-reviewed manuscript and drafted reports to federal and state governments.

Mohammad Ghiasian, PhD

Structural Engineer

Experience

6 years

Years with Firm

1 year

Qualifications/Accreditations

– PhD, Structural Engineering	2022
– MS, Coastal & Offshore Structures Engineering	2018
– BS, Civil Engineering	2015

Relevance to the project:

Mohammad has over 6 years of experience in the field of structural engineering. He specializes in innovative methods for implementing sustainable, efficient, and nature-based solutions for shoreline protection. His PhD research and work at the University of Miami resulted in the development of a novel eco-friendly and sustainable seawall system known as SEAHIVE™. This system has been successfully implemented in multiple projects for the city of Miami Beach, North Bay Village, and Pompano Beach. Mohammad has also contributed to the design and development of multiple waterfront infrastructure and building structures in South Florida. His research and development skills demonstrated by peer-reviewed publications as well as domestic and international conference presentations.

Project experience

Design and Development of SEAHIVE™ System for Coastal Protection
Role: Coastal and Structural Engineer
Client**:** FDOT
Location**:** Miami, FL
Date(s): 2019 - Ongoing

The purpose of this research project focused on the development of an effective and ecofriendly modular shoreline protection system for high energy tidal flows. Mohammad performed numerical and experimental investigations to evaluate the hydrodynamic characteristics of a facetted porous stepped seawall system known as SEAHIVE™ under varying water and wave conditions. The proposed system showed lower wave reflection and higher wave energy dissipation compared to conventional solid seawalls. Furthermore, the complex geometry and porosity of SEAHIVE system provides potential habitat for marine ecosystem. Mohammad performed engineering services for this novel system that has been employed in three pilot projects in South Florida. Mohammad currently serves as the structural lead engineer overseeing the design and development of SEAHIVE submerged breakwaters, aimed at providing shoreline protection for the City of Miami Beach.

Exploring Coral Reef Restoration for Shoreline Protection
Role: Coastal and Structural Researcher
Client**:** NFWF
Location**:** Miami, FL
Date(s)**:** 2018 - 2022

This research focused on evaluating the resilience of the built environment around coastal areas through the development of hybrid coral reef structures against storm surge and wave impacts. Mohammad quantified the benefits of hybrid artificial reefs populated by coral skeletons of staghorn coral for wave mitigation through experimental testing under different wave and depth conditions. Mohammad found that the hybrid coral reef system can reduce up to 98.5% of the wave energy, with the coral contribution estimated to be up to 56% of the total wave-energy dissipation. His study and work supported the use of hybrid approaches that integrate both gray and green infrastructure to enhance coastal resilience.

Jay Jay Bridge Feasibility Study
Role: Coastal and Structural Engineer
Client**:** NASA, KSC
Location**:** Cape Canaveral, FL
Date(s): November 2023 - April 2023

The aim of this study is to evaluate possible alternative options for delivering NASA Solid Rocket Motor (SRM) segments to Kennedy Space Center. Mohammad contributed to develop operational concept, design

T 786.431.2864 | **M** 786.483.5292 | **E** mohammad.ghiasian@ghd.com

concept, and infrastructure requirements to transport segments to the Jay-Jay Rail Yard and transfer to a barge on the west side of the Jay-Jay Bridge. His contributions included evaluating the existing seawall for erosion protection of terminal, identifying the environmental impacts, and exploring the required safety measures for the transportation. Timely delivery, budget adherence, safety, and sustainability are critical parameters for the client. Mohammad closely collaborated with the GHD team to achieve all the milestones of this project.

DO Plant Erosion Repairs
Role: Structural Engineer
Client**:** US Army Corps of Engineers Savannah District
Location**:** Savannah, GA
Date(s)**:** November 2023 - February 2023

The purpose of this project was to address erosion repairs for the Dissolved Oxygen (DO) plant by designing and installing approximately 80 linear feet concrete-capped sheet-pile wall on the south end of the property. As the project engineer for this work, Mohammad conducted structural analysis for the design of steel sheet pile system and assessed the stability of the extended bulkhead for erosion control using Shoring Suite software.

Swell Park
Role: Structural Engineering
Client**:** Miami-Dade County
Location**:** Miami, FL
Date(s)**:** May 2021 - August 2021

The project involved the design and analysis of steel sheet pile bulkhead structures for Swell Park over the Miami River. Mohammad conducted finite element analysis using STAAD Pro to design the new steel sheet pile and assess the stability of the retaining wall for erosion protection.

Miami-Dade County Truck Haul Nourishment

Role: Coastal Engineer
Client**:** Miami-Dade County
Location**:** Miami, FL
Date(s)**:** November 2023 - Ongoing

The goal of this project is to offer design, permitting, bidding, and construction support services for sediment retention and breakwater structures to mitigate coastal erosion along the Miami-Dade County shoreline. Mohammad conducted a cross-shoreline analysis using Storm-Induced Beach Change (SBEACH) numerical modeling to support permit applications and identify the most optimal and sustainable beach fill template design for sediment retention under high-frequency storm events.

Dinner Key Marina

Role: Coastal Engineer
Client**:** Miami-Dade County
Location**:** Miami, FL
Date(s)**:** May 2021 - August 2021

The purpose of this project was to develop a coastal protection alternative for Dinner Key Marina, aimed at mitigating potential storm surge and hurricane damages. Mohammad conducted numerical coastal modelling and analysis to assess the effectiveness of a submerged breakwater system in dissipating wave energy and providing flood protection, utilizing MIKE 21/3. In this regard, he evaluated the system's performance both before and after Hurricane Irma (2017), a high-frequency storm in the area with the return period of 10 years. The results of his study demonstrated that the submerged breakwater system could significantly reduce storm surge damages and prevent flooding.

North Cat Cay
Role: Coastal Engineer
Client**:** Municipal Residents
Location**:** Cat Cays, Bahamas
Date(s): May 2021 - August 2021

This project involved coastal protection services for the municipal area of North Cat Cay Island. Due to harsh and active hydrodynamic conditions around the island, the existing beach experienced extensive coastal erosion. Therefore, there was a significant need for sediment retention along the shoreline. Mohammad conducted numerical coastal modelling and analysis using Mike 21/3 to evaluate a combined shoreline protection solution consisting of perpendicular groynes and submerged breakwaters.

Jessica R. Rakich, PE

Coastal Engineer

Experience

6 years

Years with Firm

3 years

Qualifications/Accreditations

– ME, Coastal and Oceanographic Engineering 2020
– BS, Civil Engineering 2019
– Registered Professional Engineer: FL
– NAUI Open Water Diver
– PADI Enriched Air (Nitrox) Diver

Relevance to the project:

Jessica is a Coastal Engineer with over 6 years of analytical and design experience. Her projects include a variety of public and private projects throughout the United States, the Caribbean, and the Pacific. She has an understanding of regulatory environmental permitting at the local, state, and federal levels. Her projects have involved coastal analysis and design, marina planning and design, construction administration, numerical modeling, and construction document development.

Project experience

Legion Park Seawall
Role: Coastal Engineer
Client: City of Miami
Location: Miami, FL
Date(s): December 2022 – August 2023

Jessica was the coastal engineer responsible for assessment of existing seawall construction, design of temporary upland stabilization, construction oversight, and redesign of the project. The City of Miami hired a contractor to construct the Legion Park Seawall and Non-Motorized Vessel Ramp. The contractor encountered unforeseen construction debris and installed concrete piles utilizing a 'trench box' method that excavated/removed the debris and limestone rock to a depth of 4-5 feet above the pile tip elevation. The City authorized GHD to perform a structural evaluation of the stability of the piles in December 2022 and to perform a regulatory and agency review to determine what steps would be necessary to secure the site while the City considered overall project direction. A drone aerial and topographic survey and a stabilization plan for the excavated area was authorized by the City in February 2023. The GHD team worked quickly to complete the aforementioned steps for this difficult and urgent situation. The next steps will include redesign of the existing boat ramp and upland for City residents to enjoy.

Little River Pocket Park
Role: Coastal Engineer
Client: City of Miami
Location: Miami, FL
Date(s): October 2023 – Ongoing

The City of Miami obtained GHD to review another consultant's seawall design. To mitigate against future sea level rise, the newly designed seawall must extend across the park's entire shoreline. The design also includes drainage improvements to accommodate a future pump station and upsized outfalls. The project contains development of construction plans and specifications for a new seawall, kayak launch, and mangrove shoreline along the Little River. Jessica is responsible for the in-water assessment of the existing seawall, design documentation, and assisting the project manager.

Indian Creek Village Seawall
Role: Coastal Engineer
Client: Indian Creek Village
Location: Indian Creek Village, FL
Date(s): September 2022 – Ongoing

Jessica was the coastal engineer responsible for assisting in the top of seawall elevation study. Indian Creek Village is a man-made island that sits east of Biscayne Bay. The island encompasses ~250 acres, a private golf club, residential

homes, and ~ 13,800 LF of mixed shorelines. The Village Police station contains ~375 LF of shoreline. Majority of the shorelines throughout the Village are seawalls. GHD was retained to analyze existing coastal data and provide a recommendation of a top of wall elevation. Future work may include policy review and assessment of alternatives.

West Lake Park - Segment 4
Role: Coastal Engineer/Deputy Project Manager
Client: Continental Heavy Civil Corp
Location: Hollywood Beach, FL
Date(s): March 2023 - December 2023

Jessica was the coastal engineer responsible for assisting the project manager, culvert inspections, and developing the Environmental Protection Plan and Stormwater Pollution Prevention Plan. West Lake Park is a ±1,500-acre park located in Hollywood Beach, FL. Mitigation at the Park has been successfully conducted in years past to improve the ecosystem by removing exotic vegetation, planting native vegetation, regrading soil to create tidal zones, and protecting the shoreline with riprap cribs along the Intracoastal Waterway. Continental Heavy Civil Corp. (CHC) was selected to construct the next phase of the mitigation project, West Lake Park – Segment 4. GHD was hired by CHC to provide assistance during the pre-construction and construction phases of the project.

City of Key West Boat Lift
Role: Coastal Engineer
Client: City of Key West
Location: Key West, FL
Date(s): March 2023 - December 2023

Jessica was the coastal engineer responsible for permitting documentation and assisting in benthic resource survey. The City of Key West desired to obtain permitting support to fulfill a FEMA grant requirement for the installation of two boat lifts at Fire Station #1. The City authorized GHD to commence development of separate permit application packages for submittal to each of the agencies with regulatory jurisdiction (FDEP and USACE) over this project. A topographic and bathymetric survey of the project limits and Garrison Bight basin, sufficient to satisfy agency permitting requirements, as well as map and characterize the nearshore marine and estuarine benthic habitats located within the project limits was completed.

Ascension St. Vincent's Riverside Hospital FEMA
Role: Coastal Engineer/Deputy Project Manager
Client: Gresham Smith
Location: Jacksonville, FL
Date(s): November 2023 - Ongoing

GHD was hired by Gresham Smith to provide engineering services for the analysis and design of a 3,100 linear foot floodwall with various pedestrian and vehicular flood gates to protect a hospital on the St. Johns River in Jacksonville, FL. The purpose of this project is to protect Ascension St. Vincent's Riverside from flooding, due to overtopping of the shoreline. The project (FLJAC30613 Riverside FEMA Phase 1 Envelope and Flood Mitigation Ascension – St. Vincent's Riverside) is funded through the Hazard Mitigation Grant Program as approved by the Florida Division of Emergency Management (FDEM) and the Federal Emergency Management Agency (FEMA). As part of the project, a wind retrofit and flood control mitigation assessment is needed to determine, design, and permit protection of the Project site during storm events. Challenges include designing to a 500-year storm event, limited as-built information for campus utilities, coordination with various permitting agencies, and integration of a robust flood wall into the existing features and architecture of the campus buildings. Jessica is responsible for assisting the project manager, analysis of coastal data, and construction of the basis of design documentation.

Port of Alaska Terminal 1 Replacement
Role: Coastal Engineer
Client: Port of Alaska, Municipality of Anchorage, AK
Location: Anchorage, AK
Date(s): December 2022 - Ongoing

Jessica is the coastal engineer for the $10M joint-venture investigation and design of the Terminal 1 Replacement at the Port of Alaska. The redesign and replacement are part of an ongoing 5-part Port of Alaska modernization project, which aims to improve port operations, safety and efficiency, accommodate today's modern shipping operations, and improve resiliency to earthquakes and other natural disasters. The Port is an integral part of the community by providing key transportation of necessary goods into Alaska, making it an extremely complex and high-profile project. Jessica is responsible for the analysis of waves, currents, and tides at the project site, and assisting the project manager with meeting project submittal deadlines.

Ashton Rogers, PE

Civil/Stormwater Engineering

Experience

19 years

Years with Firm

11 years

Qualifications/Accreditations

– BS, Civil Engineering

– Licensed Professional Engineer: MD, VA

Relevance to the project:

Ashton has more than 19 years of experience in site design, land development, water resources, stormwater management, stormwater master planning, environmental site design, traffic control considerations and erosion and sediment control design. He has been highly successful in the management, development, and engineering of site development plans from initial conception through plan approval, permitting and construction. He is experienced in a wide range of civil site design with an emphasis in stormwater conveyance, stormwater hydrology and hydraulics, layout and accessibility, utility supply, and erosion and sediment control. As a Senior Civil Engineer and Project Manager at GHD, the main functional areas of responsibility relating to the projects he designs and manages are client management and communication, people management and resourcing, performance/quality control management, and master planning. Client management includes contract executions and agreements, understanding of the project scope, development of project execution plans identifying key deliverables and timelines, constant communication, and client briefings, and building client relationships. In addition to being Project Manager, he is a project team member who offers technical support in the development and engineering of stormwater management, sanitary sewer drainage, potable water and irrigation water construction plans, drawings, calculations, and technical reports.

Project experience

Design of East Davis Boulevard from Barbodos Avenue to Chesapeake Avenue
Role: Lead Civil Engineer
Client: City of Tampa
Location: Tampa, FL

Site development and coordination of all the site improvements associated with the design and approval of a quarter mile roadway improvement project for the City of Tampa. Three intersections included within the project are Chesapeake Avenue, Biscayne Avenue, and Barbados Avenue. Improvements included roadway regrading, new stormwater management system, sidewalks, parking, relocation and sizing of water mains and gravity sewer collection networks within the project limits, signage and stripping improvements for safe pedestrian movements within the project limits, adjustments of commercial driveway entrances, along with other miscellaneous improvements. Ashton was responsible for all civil design development including engineering calculations for stormwater, water and sewer networks, development of construction drawings and specifications, project design narratives, code and permitting compliance to ensure the project was designed to both local and FDOT standards.

Grace and Passaic Watermain and Sidewalk
Role: Lead Civil Engineer
Client: City of Fort Myers
Location: Fort Myers, FL

Site development and coordination of all the site improvements associated with the design and approval of a half mile roadway and utility improvement project for the City of Fort Myers. Roadway and utility improvements were provide on Moreno Avenue, Passaic Avenue, Grace Avenue and Canelo Drive. Improvements included roadway regrading, upgrading the stormwater management system, sidewalks, relocation and sizing of water mains and gravity sewer collection networks, implementation of raise islands as traffic calming measures, upgraded signage and stripping to ensure safe pedestrian movements along Canelo Drive adjacent to the Allen Park Elementary School. Ashton was responsible for all civil design development including engineering calculations for stormwater, water and sewer networks, development of construction drawings and specifications, project design narratives, code and permitting compliance to ensure the project was designed to both local and FDOT standards.

Engineering Services for Lake Trafford Stormwater Improvements
Role: Senior Civil Engineer
Client: Collier County
Location: Immokalee, FL

Reviewed development plans, permit applications, and specifications to ensure compliance with applicable codes, ordinances, and County standards. Support the project team with resourcing and oversight of entry level engineers for the development of engineering reports, and cost estimates, stormwater management calculations and development of construction drawings. The project involved the improvements to stormwater conveyance and treat, and a new sidewalk along Lake Trafford Road as a continuation of the Phase 1 design done by others. The project included extensive roadway grading, profiles and sections, utility coordination/relocation in areas of utility conflicts.

Poplin Pump Station
Role: Lead Civil Engineer
Client: Union County Water
Location: Indian Trail, NC

Site development and coordination of all the site improvements associated with the design-build Poplin Pump Station project which included a new replacement sewer pump station, 2,100 linear feet of sewer force main, a flow equalization tank and quarter mile access road to the equalization tank site. Responsibilities included multi-discipline collaboration to ensure the project site plans are coordinated with other disciplines, design of a commercial entrance and quarter mile access road to the new equalization tank site including plan and profiles, development of construction drawings to include sewer force main and gravity sewer plan/profile drawings, site layout plants, erosion and sediment control plans, and a stream crossing. The projected involvement regulatory compliance with NCDOT for the new commercial entrance and access road, and NCDEQ for the force main and gravity sewer stream crossing.

Windmill Pump Station Replacement
Role: Project Manager and Lead Civil Engineer
Client: Easton Utilities
Location: Easton, MD

Replacement and upgrade of the existing Windmill Pump Station located on South Washington Street in the Town of Easton, Maryland. The pump station is owned and operated by Easton Utilities, which is a private utility company that owns and maintains the sanitary sewer, water, and electrical utilities within the Town. The project involved the complete replacement of the existing 1,725 gpm rate Windmill Pump Station. The new Windmill Pump Station was to be designed to 1,725 gpm at 152 ft. total dynamic head (TDH). In addition, the new pump station was relocated approximately 400' south of the existing pump station in order to get it out of the flood plain and environmentally sensitive areas. Project included redesign of existing sewer utilities within the roadway leading up to the new pump station location and the development of a traffic control plan. the project also include permitting and bid phase services. The proposed 660 feet sewer force main incorporated 560 feet of horizontal directional drilling of the new 14" HDPE force main from the new pump station to an existing force main.

Flood Plain Impacts Study and Remediation
Role: Lead Civil Engineer
Client: City of Westminster
Location: Westminster, MD

Lead Civil Engineer for site development and coordination of all the site improvements associated to the wastewater treatment plant upgrade. Engineering design of stormwater level spreaders to sheet flow to conservation areas. Review and development of the erosion and sediment control plans. Site grading to ensure positive drainage of stormwater runoff to the proposed stormwater management facilities. Site development including vehicle accessibility, staff and guest parking, construction stakeouts, yard piping, building tie-in coordination, and pavement resurfacing. Development and coordination of a permitting matrix for all project associated permits that included planning of the development review process to obtain MDE Dewatering and Construction Permits, and a FEMA Conditional Letter of Map Revision (CLOMR) for the associate floodplain impacts and mitigation measures.

War Memorial Bioretention Basin and Mt. Hermon Rite Aid Stormwater Management
Role: Project Manager
Client: City of Salisbury
Location: Salisbury, MD

The War Memorial project involved the development of 30% design drawings, calculations and cost estimate for the implementation of a bioretention basin and alleviation of stormwater street side ponding. Environmental Site Design (ESD) practices were incorporated using the results of the geotechnical investigations as support. The Mt Hermon (Rite Aid) Stormwater Management project involved a feasibility study for the reconstruction of an on-site existing BMP using ESD practices. The objective was to maximize the stormwater management credits that the City could obtain from the project then provide recommendations on the cost/benefits of the project.

Brian Moore, PE

Environmental Engineering/CAR

Experience

29 years

Years with Firm

28 years

Qualifications/Accreditations

– MBA, Business Administration	2009
– MSE, Environmental Engineering	2005
– BA, Environmental Science	1995
– AS, Science	1992
– Registered Professional Engineer: FL	

Relevance to the project:

Brian Moore, PE has more than 29 years of experience in environmental consulting. He's worked in a variety of disciplines including civil engineering, environmental engineering, coastal engineering, solid waste, water, stormwater, and wastewater. Brian has assumed lead roles in directing project teams and junior staff throughout GHD's Florida offices. Brian currently serves as GHD's contract manager for the State of Florida Hazardous Waste and City of Tampa solid waste contracts. He's also served as the design engineer for a variety of design-build, permitting, solid waste, and environmental remediation projects.

Project experience

Multiple Work Orders under General Engineering Contract
Role: Principal-in-Charge
Client: City of Fort Lauderdale
Location: Fort Lauderdale, FL
Date(s): 2016 - Ongoing

Brian has been supporting this continuous contract support to the City of Fort Lauderdale since 2016 under multi-work order contract awarded for a 5-year duration, General Environmental Engineering Contract. He oversees the management of several work orders under, which have included environmental site assessments, both Phase II work orders, forensic cause and origin building assessment, and impacted soils management.

Environmental Engineering Contract
Role: Contract Manager and Principal-in-Charge
Client: City of St. Petersburg
Location: St. Petersburg, FL
Date(s): 2018 - Ongoing

Brian is the program manager for GHD's continuing service environmental engineering contract. Specific duties included overall management of multiple projects, proposal preparation, budget tracking, scheduling, milestone development, and implementation. GHD has assisted the City with a variety of projects involving all aspects of environmental engineering. Projects of interest include an evaluation of sediment quality from the Admiral Farragut Yacht Basin at the request of the Florida Department of Environmental Protection (FDEP). Sediment cores were gathered and analyzed for various parameters at a Florida-certified analytical laboratory. GHD also assisted the City with monitoring of the Maximo Park Bank Stabilization project following installation of the living shoreline.

Environmental Engineering Continuing Contract
Role: Principal-in-Charge
Client: Lee County
Location: Lee County, FL
Date(s): 2017 - Ongoing

Brian is the Principal and contract manager for the Lee County Environmental Continuing Services Contract. Under this contract, GHD is providing a study for the demolition of three Lee County water and wastewater treatment plants, along with the development of demolition specifications for the project.

T 813.257.0658 | **M** 813.335.2147 | **E** brian.moore@ghd.com

Due Diligence Hillsborough County Board of County Commissioners
Role: Project Director
Client: Hillsborough County
Location: Hillsborough County, FL

Brian server as the project director for the completion of various due diligence Phase I and II Environmental Site Assessments. The Hillsborough County Board of County Commissioners (HCBOCC) retains GHD for a variety of as-needed services under this contract. For each project, GHD must refine and confirm the scope of work requirements, establish and strictly adhere to project budgets and projected schedules, and produce quality deliverables subject to full public disclosure. Brian performed pre-acquisition due diligence assessments, hazardous substance evaluations, and indoor air quality assessments.

Ford Street Canal Filter Marsh
Role: Project Manager - Design/Construction
Client: City of Fort Myers
Location: Fort Myers, FL

Brian was the project manager and principal for the final design and implementation of the Ford Street Filter Marsh. The project involved completing a geotechnical evaluation along with structural design services for two filter marsh weir control structures, a boardwalk extension, existing boardwalk and canoe launch rehabilitation, and the canal structure located upstream of the Ford Street Canal Filter Marsh.

Risk Assessment - Bakers Park
Role: Project Engineer
Client: City of Naples
Location: Naples, FL

Brian was the project engineer responsible for reviewing the initial design plans for park features planned for construction in an area that contained buried debris. The process involved evaluating potential risks to future site occupants after park development. The process also required development of a long-term management plan and associated future costs.

Miromar Lakes Water Quality Monitoring
Role: Project Principal
Client: Calvin, Giordano & Associates, Inc.
Location: Lee County, FL
Date(s): 2016 - Ongoing

GHD provides triannual water quality monitoring and reporting services for Lake 6 and Lake 3 at Miromar Lakes within the Miromar Lakes Golf Club. Grab samples are collected from a boat at various locations on the applicable lake areas. Samples representing a specific depth are collected using a Van Dorn water sampler. Monitoring reports are completed for each sampling event and data is reviewed and analyzed annually.

Water Quality Sampling
Role: Project Principal
Client: City of Fort Myers
Location: Fort Myers, FL
Date(s): 2013 - Ongoing

GHD currently provides water quality monitoring and reporting services for the City of Fort Myers NPDES MS4 Stormwater Testing Program. The sample sites are in various locations along Billy's Creek, Manuel's Branch, Carrell Canal, Winkler Canal, the North Colonial Waterway, and the Downtown Basin. GHD conducts water quality sampling on a monthly basis at nine designated locations. Brian performed quality assurance (QA) procedures for the collection of samples and decontamination of sampling apparatus prior to and during use in the field is conducted in general conformance with the Florida Department of Environmental Protection field sampling and laboratory analysis quality assurance protocol codified in Chapter 62-160 FAC Standard Operation Procedures (SOPs) for Field Activities (FDEP SOP-001/01). Laboratory results were delivered in electronic format to meet Florida Department of Environmental Protection (FDEP)'s requirements for inclusion in the State STORET/WIN water quality database. GHD also imported the data into an access database that is maintained for any further reporting or querying needs. In addition, GHD provided the data in graphical format presenting 12-month rolling averages for each parameter over the previous five (5) years of monthly data.

Hazardous Waste Tice Street
Role: Project Manager
Client: JLM Financial
Location: Fort Myers, FL

Brian was the project manager responsible for the assessment and remediation of a chlorinated solvent groundwater contaminant plume. Chlorinated solvents were utilized at the industrial site resulted in shallow groundwater impacts. Brian led a site assessment completed through the use of direct push profiling and well installation. After the assessment, remedial injection were conducted using a slow release oil substrate in order to stimulate the natural microbes to degrade the chlorinated solvents dissolved in groundwater. Following injections, periodic monitoring was conducted until the site was determined eligible for a conditional site closure. The conditions will require a use restriction for shallow groundwater. The final restrictive covenant is currently being prepared

Jeremy Hess, PE

Environmental Engineer/CAR

Experience

16 years

Years with Firm

8 years

Qualifications/Accreditations

– MS, Civil Engineering	2016
– BS, Civil Engineering	2014
– BS, Environmental Science	2003

Relevance to the project:

Jeremy has 16 years of progressively increasing experience in environmental consulting and engineering. His expertise includes assessment and remediation design of both petroleum- and drycleaning-solvent-impacted facilities. His project management and design experience includes both state-funded programs through FDEP and private-client projects throughout Florida. He has managed projects at hundreds of sites, with work including remedial design, soil and groundwater assessment, operation and maintenance (O&M), and natural attenuation and post-active remediation monitoring. His remedial technology experience includes air sparging (AS) and soil vapor extraction (SVE), groundwater pump and treat, multi-phase extraction, liquid-phase hydrocarbon collection, excavation and dewatering, and in situ chemical oxidation (ISCO) injections. He has extensive experience in preparing and executing plans for pilot testing and engineering control and maintenance, as well as Phases I and II ESAs. A member of the GHD Fast Incident Response Services Team (GHD FIRST), he is responsible for the preparedness of GHD's Tampa-area responders. He supervises the environmental staff at all levels and regularly holds meetings to keep projects technically sound, on schedule, and within budget, with correct and timely invoice submission. He helps prepare technical work plans and reviews technical documents prior to submittal.

Project experience

Williams Air Conditioning & Heating
Role: Engineer of Record
Client: Florida Department of Environmental Protection (FDEP)
Location: Jacksonville, FL
Date(s): 2017 - 2025

Jeremy developed a Remedial Action Plan (RAP) for installing an Air Sparge / Soil Vapor Extraction (AS/SVE) system to address soil and groundwater petroleum impacts at the facility. To address the groundwater plume, which had migrated underneath the warehouse facility, the design included treatment wells inside and outside the building, as well as directionally drilled process piping. The remediation system operated for six quarters before the site transitioned to Post-Active Remediation Monitoring (PARM). After completing four quarters of PARM, No Further Action (NFA) was recommended, and a Site Rehabilitation Completion Order (SRCO) was achieved for the facility in January 2025.

FDEP Forensics Program
Role: Senior Design Engineer
Client: FDEP
Location: Throughout Florida
Date(s): 2022 - 2025

Jeremy has managed several complex sites involving research including property history, previous assessment and remediation activities, and site reconnaissance to create conceptual site models and develop sampling plans to evaluate contaminant plumes and potential sources. He coordinated field activities, performed data analysis, and provided technical conclusions on the status, location, source, and stability of the contamination, and provided recommendations for continued delineation and remedial strategies. Jeremy managed a study to evaluate potential sources of carcinogenic polycyclic aromatic hydrocarbons (PAHs) present in subsurface soils. His responsibilities included detailed file reviews, assessment planning, coordination of field activities, correspondence with the client and property owners, data analysis, and reporting for eleven B(a)P impacted facilities. Findings from the study aided in the development of a methodology for determining the petrogenic vs pyrogenic nature of the identified impacts using multiple lines of evidence.

G-Bar Service Mart #301
Role: Engineer of Record
Client: FDEP
Location: Pensacola, FL
Date(s): 2022 - 2025

Jeremy is the project manager of the G-Bar Service Mart #301 project which involves a large-scale groundwater plume which has impacted the source property and multiple downgradient properties. Assessment of the source area was completed using laser inducted fluorescence (LIF) and hydraulic profiling (HP) technologies, which revealed a large, adsorbed hydrocarbon mass in the saturated media, serving as a continual source of the identified groundwater impacts. Jeremy utilized vacuum enhanced recovery to address the free-phase petroleum presence on the source property. The irrigation wells on the adjacent properties have exacerbated the horizontal and vertical migration of the groundwater contaminant plume. Jeremy has designed and implemented irrigation monitoring systems to record flow and pressure data from the recovery wells to evaluate their influence on the contaminant plume. Jeremy developed and is currently implementing pilot test plans to evaluate the viability of both AS/SVE and colloidal carbon injection technologies. The results have proven beneficial and will be utilized as the basis of a full-scale remedial design to include laterally installed segmented AS and SVE wells and the installation of a colloidal carbon curtain to contain the migrating contaminant plume.

Petroleum Restoration & Waste Cleanup Programs
Role: Design Engineer
Client: FDEP
Location: Throughout Florida
Date(s): 2017 - Ongoing

Development of Remedial Action Plans (RAPs) and Remedial Action Plan Modifications (RAPMs) to address soil and groundwater impacts identified at petroleum and waste clean-up program facilities. Mr. Hess has experience with a variety of remedial technologies including Air Sparging (AS) and Soil Vapor Extraction (SVE), groundwater pump and treat, Multi-phase Extraction (MPX), Liquid Phase Hydrocarbon (LPH) collection, excavation and dewatering, and innovative remediation approaches incorporating advanced oxidation technologies utilizing In-Situ Chemical Oxidation (ISCO) injections.

Hazardous Waste Cleanup Program
Role: Task Manager
Client: FDEP
Location: Throughout Florida

Responsible for all aspects of management associated with State administered assessment and remediation of dry cleaning and hazardous waste facilities throughout Florida. Duties include project management, contamination assessment, monitoring program design, remedial design and operation and maintenance. Successfully implemented innovative technologies to effectively assess and remediate contaminated sites.

Phase I/II Environmental Site Assessments
Role: Project Engineer
Client: Various
Location: Throughout Florida
Date(s): [Month YYYY]

Managed/performed over 600 Phase I and II Environmental Site Assessments for various developed and undeveloped properties for private and municipal clients throughout Florida in accordance with ASTM standard practices. These assessments include historical record reviews, field investigations, historical aerial photo reviews, regulatory database and file searches, and interviews with relevant owners/operators of the subject sites.

Pharmco Laboratories Inc.
Role: Engineer of Record
Client: FDEP
Location: Titusville, FL
Date(s): 2018 - Ongoing

Development of a RAP for the installation of a groundwater recovery system to address large 1-2 dichloroethane (1,2-DCA) plume. Remediation system design included four submersible recovery well pumps, a six-tray low profile air stripper, two (2) 1,000-pound granular activated carbon (GAC) vessels, and four effluent injection wells.

Bazarte Rene
Role: Engineer of Record
Client: FDEP
Location: Tampa, FL
Date(s): 2017 - Ongoing

Development of Limited Scope RAP for the excavation of benzo(a)pyrene soil impacts. Delineation was completed using the Alternative Soil Clean-up Target Level developed for benzo(a)pyrene. Three hundred tons of impacted soil were excavated to the established limits and a site rehabilitation completion order (SRCO) for the facility is currently pending. Selected closure strategy avoided additional assessment and excavation efforts, minimizing the time and cost to closure.

Jeff Knauer, PE, ME, NACE CP Specialist

Corrosion Engineer

Experience

25 years

Years with Firm

9 years

Qualifications/Accreditations

– MBA, Massachusetts Institute of Technology 2024
– MS, Mechanical Engineering 1999
– BS, Mechanical Engineering 1998
– Civil Engineer: CA #68329; WA #50938; HI #15589
– Mechanical Engineer: CA #31977; WA #50938
– National Association of Corrosion Engineers Cathodic Protection Specialist

Relevance to the project:

Jeff Knauer has 25 years of experience with corrosion risk assessment, cathodic protection, and corrosion mitigation design for municipal, private, and federal infrastructure. He has been the corrosion engineer for condition assessment and rehabilitation projects in the United States and the Pacific Islands. Jeff is licensed in civil engineering and mechanical engineering and is a certified NACE CP specialist. He's succeeded at designing corrosion control solutions in challenging environments. Jeff has proven himself an accomplished task leader for large-scale corrosion assessment and rehabilitation projects and provides expert witness services.

Project experience

National Park Service Muni Pier at Aquatic Park
Role: Corrosion Engineer
Client**:** National Park Service
Location**:** San Francisco, CA

Jeff served as corrosion engineer for the comprehensive assessment and development of rehabilitation concepts for Municipal Pier at Aquatic Park.

Naval Base Kitsap Offshore Improvements
Role: Corrosion Engineer
Client**:** US Navy
Location**:** Bangor, WA

Jeff was a corrosion engineer of the cathodic protection design for a captivated camel berthing facility and associated structures.

American Memorial Park
Role: Corrosion Engineer
Client**:** National Park Service
Location**:** Saipan, CNMI

Jeff provided corrosion engineering support for the repair of severely corroded sheet piling bulkhead at Smiling Cove Marina at American Memorial Park.

Wake Island Bulkhead and Causeway
Role: Corrosion Engineer
Client**:** United States Air Force
Location**:** Wake Island, Micronesia

Jeff served as corrosion engineer for the design of impressed current cathodic protection for bulkhead and causeway sheet piling in soil and seawater exposures.

China Basin Float Rehabilitation
Role: Corrosion Engineer
Client**:** Port of San Francisco
Location**:** San Francisco, CA

Jeff was a corrosion engineer for the cathodic protection design for the ballast tanks of passenger ferry terminal floats serving AT&T Park in San Francisco.

Pile Driver Float Rehabilitation
Role: Corrosion Engineer
Client**:** Port of San Francisco
Location**:** San Francisco, CA

Jeff served as corrosion engineer responsible for cathodic protection design of external submerged surfaces and internal ballast tanks.

Pile Driver Float Rehabilitation
Role: Project Manager
Client**:** Water Emergency Transportation Authority
Location**:** Berkeley, CA

Jeff served as project manager for conceptual design of a new passenger ferry terminal in Berkeley, California.

Molokai Pier Restoration
Role: Corrosion Engineer
Client**:** National Park Service
Location**:** Molokai, HI

Jeff was a corrosion engineer for pier improvements and restoration.

Brannan Street Wharf Design
Role: Corrosion Engineer
Client**:** Port of San Francisco
Location**:** San Francisco, CA

Jeff served as corrosion engineer for cathodic protection design of driven steel piles.

Water Emergency Transportation Authority Maintenance Facility, Mare Island
Role: Corrosion Engineer
Client**:** Water Emergency Transportation Authority
Location**:** Vallejo, CA

Jeff served as Corrosion Engineer responsible for cathodic protection design of offshore structures.

Kilauea Lighthouse Restoration
Role: Project Manager
Client**:** US Fish & Wildlife Service
Location**:** Kauai, HI

Led the project as project manager and lead corrosion engineer for the restoration of historic lighthouse. The task included concrete and metal repair and replacement and design of lightning protection.

Presentations

- NACE International Corrosion Risk Conference "Fitness for Continued Service: A Risk Management Approach to Assessing Corrosion and Prioritizing Infrastructure Improvements" Houston, TX, May 2016.
- NACE Department of Defense (DOD) Corrosion Conference, "The Critical Role of Consistent Facilities-Wide Corrosion Control Design Criteria and O&M Practices to Facilities Asset and Risk Management", La Quinta, CA, August 2011.
- NACE Western Area Conference, "Corrosion of Reinforced Concrete Structures in the San Francisco Bay", October 2008.
- American Water Works Association (AWWA) Annual Conference, "The Critical Role of Consistent Corrosion Control Criteria as Part of Comprehensive Asset and Risk Management Planning" Poster Presentation, San Diego, CA, June 2009.
- AWWA Distribution Systems Symposium, "The Critical Role of Consistent Distribution System Wide Corrosion Control Criteria as Part of Comprehensive Asset and Risk Management Planning" Poster Presentation, Reno, NV, September 2009.
- California Water Environment Association (CWEA) Annual Conference "Corrosion Control and Cathodic Protection" Santa Clara, CA, April 2014.
- Nevada Rural Water Association "Corrosion Control and Cathodic Protection Fundamentals" Reno, NV, March 2014.
- AWWA Cal-Nevada Fall Conference "Corrosion and Corrosion Control Fundamentals" Sacramento, CA, October 2013.
- AWWA Annual Conference "Corrosion Control and Cathodic Protection for Water Conveyance, Storage and Treatment Facilities" Las Vegas, NV, August 2013.
- NACE Western Area Conference, "Corrosion of Reinforced Concrete Structures in the San Francisco Bay" San Francisco, CA, November 2012.
- AWWA Cal-Nevada Spring Conference "Fitness for Continued Service: A Risk Management Approach to Assessing Corrosion and Prioritizing Infrastructure Improvements" Sacramento, CA, March 2016.
- NACE Western Area Conference, "Delamination Rate Analysis of Reinforced Concrete Structures in Marine Environments", December 2016.
- AWWA Western Pacific Subsection Annual Conference "Corrosion and Corrosion Control: Water Infrastructure" Guam (Virtual), September 2021.
- ·AWWA Cal-Nevada Annual Fall Conference "Data Driven Risk Based Prioritization of Asbestos Cement Pipeline Replacement: MCSD Case Study" Rancho Cucamonga, CA (Virtual), October 2021.

Tracey Scott, AICP, CNU-A, NCI

Park Planning/Architecture

Experience

20 years

Years with Firm

< 1 years

Qualifications/Accreditations

– MS, Urban Design	2005
– MA, Architecture	2005
– BS, Architecture	2002
– American Institute of Certified Planners (AICP)	#34039

– The Congress for the New Urbanism (CNU) Accredited Professionals

– National Charrette Institute (NCI) Charrette System Certificate

Relevance to the project:

Tracey has 20 years of professional experience in urban design, planning, architecture, and landscape architecture, including multi-family residential: affordable, attainable, market-rate, military, and student living, mixed-use, high-rise, office, retail, and civic buildings. Her experience includes sustainable and resilient community master planning, neighborhood revitalization, visionary ideas for placemaking, streetscape, and architecture design, complete and green streets, active transportation, transit-oriented development, station area planning, light-rail lines, Housing and Urban Development choice neighborhoods, master plans and specific plans, design guidelines, form-based codes, graphic design, façade and sign design, and community stakeholder engagement. She is passionate about working collaboratively to design great places that enhance everyday life. Tracey enjoys making people happy, promoting health and wellness, producing high-quality design and graphics, and sharing kindness and support with a collaborative design spirit.

Project experience

Central Avenue Master Plan + Corridor Study
Role: Lead Urban Designer
Client: CRA/LA
Location: Watts, Los Angeles, CA
Date(s): 2008

This Specific Plan creates an economically viable, ecologically sustainable, and distinctive corridor, strategically located adjacent to freeways and major transit lines, with a unique pedestrian-friendly, mixed-use character that draws upon the cultural diversity of the Watts Community. The master plan is an integrated assembly of buildings, streetscape, and open spaces that redefine the identity of the Central Avenue Corridor as a vibrant place to live, work, shop, and visit. The Vision was crafted by the community during a series of stakeholder meetings, community workshops, and charrettes, and a Form-Based Code was established to guide development, public realm, and streetscape improvements.

Ablette Village + E State Street
Role: Senior Planner, Urban Designer, Project Manager
Client: Michaels + HACC
Location: Cramer HIll, Camden, NJ
Date(s): 2024

The Ablett Village, Cramer Hill Transformation Plan and Implementation, is a Housing and Urban Development Choice Neighborhood project with mixed-income residential alongside the beautification of a new complete and green street. Created visionary concepts for a pedestrian friendly neighborhood, with new homes for 425 residents and safe streetscapes for families, children, and seniors. Built strong relationships with key stakeholders during an 8-year community engagement process from initial planning through the development of construction documents. Collaboratively designed a new complete and green street for an existing county road to increase connectivity, promote safety, and establish a shared bike/pedestrian path to connect a future transit station to the new residential neighborhood, new regional amenities, and existing community.

T 858.430.1539 | **M** 619.306.3317 | **E** tracey.scott@ghd.com

350 South Fifth Avenue Transit-Oriented Development
Role: Senior Planner, Urban Designer, Project Manager
Client: The Michaels Organization
Location: Ann Arbor, MI
Date(s): 2024

Conceptual design for a 15-story mixed-use, mixed-income transit-oriented development integrated with a bus-drop off for the Blake Transit Center, a major public transit station, serving as the main hub for TheRide, the terminus and transfer point for 17 Ann Arbor-based routes and multiple intercity bus services.

Jordan Downs S6 + Croesus Avenue
Role: Senior Planner, Urban Designer, Owner's Representative
Client: The Michaels Organization (Housing Authority of the City of Los Angeles)
Location: Watts, Los Angeles, CA
Date(s): 2023

Conceptual design for Jordan Downs S6, which consists of two, four-story mixed-use, mixed-income residential buildings, serving as the gateway and entrance to Jordan Downs, a Watts Choice Neighborhood Redevelopment. Designed a pedestrian friendly, retail focused, plaza type streetscape for Croesus Avenue with the flexibility of accommodating front door parking and access, while also feeling more like a pedestrian only mall with the ability to be temporarily closed for community events.

Rail to River Active Transportation Corridor
Role: Lead Urban Designer
Client: Los Angeles County Metropolitan Transportation
Location: Los Angeles, CA
Date(s): 2014

Created potential development and open space alternatives to integrate the public realm and private development with the active transportation corridor, adjacent communities and existing/proposed transportation options.

San Manuel Master Plan
Role: Senior Urban Designer, Project Manager
Client: San Manuel Reservation
Location: San Bernardino County, CA
Date(s): 2014

Crafted the overall vision and master plan for the San Manuel Reservation as desired by the tribe through engaging community outreach. Developed sustainable design guidelines with placemaking principles for the vision plan. Designed a "Heritage Walk" trail and park network to highlight and preserve many sacred and historical cultural elements, while connecting key moments, places, and views. Created recommendations for future development to support economic and residential growth, while preserving the natural environment and peaceful quality of life on the reservation.

E Street Transit Corridor
Role: Lead Urban Designer
Client: San Bernardino County
Location: San Bernardino, CA
Date(s): 2010

Conceptual Strategy Plan to identify sites for strategic development opportunities for transit-oriented development that leverage the potential of substantial new transportation infrastructure. Specifically, the plan supported the City of San Bernardino's integrated strategy to meet its current and future housing needs.

Crenshaw - LAX Transit Corridor (K-Line)
Role: Lead Urban Designer + Planner
Client: Los Angeles County Metropolitan Transportation
Location: Los Angeles, CA
Date(s): 2010

Provided urban design and planning expertise for the entire line through preliminary engineering and the Environmental Impact Report/Environmental Impact Statement. Created pedestrian friendly, multi-modal, and mixed-use, transit-oriented development and station area planning concepts, ½ mile around each station. Conducted a series of community workshops as part of a collaborative design process to build trust, gain support, educate, and receive feedback from neighborhood stakeholders on this significant and impactful transit corridor planning and design process.

Mid-Coast Corridor Transit Project
Role: Director of Urban Design + Planning
Client: San Diego Association of Governments
Location: San Diego, CA
Date(s): 2013

Led the development of Station Design Guidelines for the proposed sites, while anticipating future transit-oriented development with innovative architecture design to establish a unique corridor identity and theme.

Mission Valley Future Vision
Role: Senior Urban Designer, Project Manager
Client: Multiple Clients
Location: San Diego, CA
Date(s): 2016

Innovative, conceptual design visions to re-imagine Mission Valley as a mixed-use, pedestrian friendly desirable retail and entertainment focused destination that celebrates the San Diego River as the recreational amenity core, creates pedestrian friendly boulevards as destinations for people to enjoy the public realm, and mixed-use neighborhoods that promote connected live, work, play communities. Visions for several key sites, including a future town center and transit- oriented development for the Chargers' Qualcomm Stadium site and a mixed-use development to replace a traditional office park. These inspirational ideas were included in the Mission Valley Community Plan update and have inspired mixed-use development along the corridor.

Christian Branter, RA

Park Planning/Architecture

Experience

20 years

Years with Firm

9 years

Qualifications/Accreditations

– BArch, Architecture 1998

– Registered Architect: FL #AR96457; CA #C37590

– National Council of Architecture Registration Boards #102797

Relevance to the project:

Christian has over 20 years of experience, his extensive knowledge of project management and the design process. His experience ranges from Industrial and Commercial Office to Education and Entertainment. Christian knows what it takes to deliver a project that meets the client's needs. He has coordinated successfully with a wide variety of user groups and has an advanced understanding of managing stakeholder interests, as well as working closely with all subconsultants and partners. Additionally, Christian has knowledge and understanding of technical safety and operations training. Prior to joining GHD, Christian was an instructor in wood and metal shops in Kentucky and Sweden and worked for several architecture firms in Sweden, New York and Kentucky. Also, while in Sweden, Christian completed over a year of courses at Lund University in the International Institute of Industrial Environmental Economics.

Project experience

Davis Fencing
Role: Project Manager
Client: Pacific Gas & Electric (PG&E)
Location: Davis, CA
Date(s): 2021 - Ongoing

New perimeter fencing, gates, access control with no new access points. GHD is providing schematic design, variance application, and construction document services.

Richmond Fencing
Role: Project Manager
Client: PG&E
Location: Richmond, CA
Date(s): 2021 - Ongoing

New and modified perimeter fencing, gates, access control with no new access points. GHD is providing schematic design, variance application, and construction document services.

T&D Consolidated Training Center
Role: Project Architect
Client: Southern California Edison Company
Location: Rancho Cucamonga, CA
Date(s): 2021 - Ongoing

The T&D Training Center Campus is envisioned to be a cutting-edge training center with a focus on Safety, Integrated Learning, and Sustainability. The training activities will be connected through indoor/outdoor spaces. The buildings will feature flexibility, with a focus on technology and function as a "Living Laboratory" for training purposes. Sustainability considerations include providing EV chargers, having all electric buildings, and achieving LEED Certification.

Davis T-Line Building
Role: Project Manager
Client: PG&E
Location: Davis, CA
Date(s): 2020

The new 13,000-SF Pre-Engineered Metal Building (PEMB) is a design-build project that will accommodate a shop and administration office component. GHD provided design development, construction documents, and construction administration services.

Modesto RFP Prep
Role: Project Manager
Client: PG&E
Location: Modesto, CA
Date(s): 2020

Finalizing Programming and preparation of a Design/ Build RFP for the Modesto Service Center Renovation/ Expansion Project. The goal for this project is to consolidate PG&E employees that are housed in several facilities to the existing site. It involves the renovation, modernizing and expansion of the main building to accommodate all personnel and the construction of a new warehouse. GHD finalized programming and conceptual designs and developed the design-build RFP.

Fresno AVCRAD HVAC
Role: Project Manager
Client: California Military Department (CMD)
Location: Fresno, CA
Date(s): 2021 - Ongoing

The existing building contains various HVAC systems that are not functioning or not functioning correctly. GHD is providing onsite inspections and is assisting with construction documents to assist in enhancing the performance of the HVAC systems.

Eureka Armory Restoration
Role: Project Architect
Client: California Army National Guard CMD
Location: Eureka, CA

Served as Project Architect 20,000-SF Armory project includes full renovation of HVAC, Electrical, Communications, ADA, Safety, ATFP, Roofing, and civil improvements. GHD provided full architectural design services for this project.

Design-Build RFP
Role: Project Manager
Client: CMD
Location: Santa Rosa Armory, CA
Date(s): 2020

Major renovation for the 14,500-SF Armory, including HVAC, Electrical, Communications, ADA, Safety, ATFP, Roofing, architectural, and civil improvements. GHD provided architectural services for the creation of design-build bridging documents to assist the CMD in the development of RFQ and RFP documents to award a full-service design-build contract.

CMD Camp Roberts Facilities Assessments
Role: Project Manager
Client: California Army National Guard
Location: Los Alamitos, Sacramento, Roseville, San Luis Obispo, CA
Date(s): 2019

Assessments for 19 facilities in the State of California for the CMD. The functions of these facilities include administrative, arms storage, lodging, vehicle maintenance, training centers, and water supply/treatment.

Joint-Use Dining Facility
Role: Project Manager
Client: CMD
Location: Lathrop, CA
Date(s): 2019

The 9,800-SF Joint-Use Dining Facility will contain a dining hall with service line, a commercial kitchen, food service and support areas, staff and admin support areas (offices, lockers, toilets) and utility rooms (mechanical, electrical and telecommunications) to serve as a joint use facility for the 200 National Guard Youth Challenge Program cadets, Army National Guard units, and the soldiers stationed at the Stockton Airfield. GHD provided architectural services for the creation of design-build bridging documents to assist the CMD in the development of RFQ and RFP documents to award a full-service design-build contract.

CMD Eureka Armory Renovation
Role: Project Manager
Client: California Army National Guard
Location: Eureka, CA

Development of documents for the Design/Build package for the renovation of the Eureka Armory for the CMD.

Nellis Air Force Base, Building 425 Precision Measurement Equipment Laboratory Expansion/ Renovation
Role: Project Architect
Client: US Air Force
Location: Las Vegas, NV
Date(s): 2017

The expansion of Building 425 provided an additional 1,500 SF, including a shipping room, lobby, and scheduling room. The entryway to the addition required a covered loading ramp so that carts with heavy equipment can be wheeled into the building. Renovation to the existing precision measurement equipment laboratory rooms 105, 106, 118, 119 and 120 consisted of reconfiguration of room space, refinishing of surfaces, and accommodation of required HVAC, electric, and lighting.

United Airlines Technical Operations Ready Room San Francisco International Airport
Role: Project Manager
Client: San Francisco International Airport
Location: San Francisco, CA
Date(s): 2016

GHD provided design and construction administration services for the tenant improvements to the Technical Operations group at San Francisco International Airport.

Rainwater Basin New Bunkhouse
Role: Project Architect
Client: US Fish and Wildlife Service
Location: United States
Date(s): 2017

As part of an IDIQ contract with the US Fish and Wildlife Service, GHD was the design architect for this new 2,000-SF crew quarters bunkhouse.

Davis Assessments
Role: Project Manager
Client: PG&E
Location: Davis, CA
Date(s): 2020

The new 13,000-SF Pre-Engineered Metal Building (PEMB) is a design-build project that will accommodate a shop and administration office component. GHD provided design development, construction documents, and construction administration services.

Lucas Piper, PLA, QSD/P

Landscape Architecture

Experience

17 years

Years with Firm

7 years

Qualifications/Accreditations

– Bachelor of Landscape Architecture 2006

– Professional Landscape Architect: CA #5783; AZ #78972; PA #LA003512

– Qualified Stormwater Pollution Prevention Plan (SWPPP) Developer/Practitioner: CA #25768

Relevance to the project:

Lucas is a registered landscape architect with over 17 years of design and project management experience. He has worked on a wide variety of projects ranging from private development, institutional and civic, parks and trails, roadway corridors and intersections, and habitat restoration. Lucas is a qualified SWPPP Developer/Practitioner and has worked on several stormwater pollution management, stabilization, and LID projects. He is well experience in a wide range of design and consulting processes and services including site analysis; site planning; geospatial analysis; conceptual design development; 3D renderings; public outreach, construction document Plans, Specifications, and Estimates (PS&E); and SWPPP development.

Project experience

Savan GUT - Phase 2
Role: Landscape Architect QA/QC
Client: US Army Corps of Engineers (USACE)
Location: Charlotte Amalaie – St. Thomas, US Virgin Islands

The main purpose of the project is to reduce flood damages to the Jane E. Tuitt Elementary School and the Central Business District in downtown Charlotte Amalie by converting the current ½ mile open water flood channel into a covered concrete box culvert. As part of this work, seven unique parklets/plaza's will be designed adjacent a linear pedestrian walkway above the box culvert intended to connect remnant cultural/historical structures, provide safe passage through town away from congested streets, and promote reengaging the historic downtown district with the residential neighborhood that resides above. The current open channel divides the town physically and collects unwanted trash and debris. The proposed design will provide much needed safe gathering spaces and multiple community connections meant to enhance the quality of life for the residents.

Hall Park Detention Basin
Role: Landscape Architect, QA/QC Reviewer
Client: Town of Windsor
Location: Windsor, CA

Served as Landscape Architect Lead and QA/QC review for a flood mitigation project that converted an existing single-use residential park into a multi-use detention basin and park. The primary goal of the project was to detain peak flows to mitigate flooding at a downstream intersection pone to frequent flooding. Key elements of the project included a diversion system, headwall, low impact development features for water quality, and a unique underdrain system to provide adequate drawdown and provide year-round use of the park. New bio-retention plantings, butterfly garden, oak tree replacement plantings and a full irrigation system were also designed as part of the improvements for the park.

River Oaks Regional Stormwater Capture Project
Role: Landscape Architect
Client: City of San Jose
Location: San Jose, CA

The 5.2-acre project site is located in North San José between Riverview Parkway and the Guadalupe River, San José, California. The Project will convert an existing facility to provide stormwater treatment via bioretention prior to discharge to the Guadalupe River, by allowing for low flow water to be routed into a redesigned detention basin after trash capture and sedimentation deposition in a newly created forebay. Water would then flow through the bioretention basin to receive bio-treatment. The project landscape architectural elements include the development of an integrated park to provide recreational, aesthetic, and educational benefits for the community. Currently mid-way through construction document development, park features include a walking trail around the basin composed

of permeable pavement, a boardwalk and viewing platform over the detention basin, two deck overlooks with seating, exercise and play equipment, interpretive signage, a demonstration bioretention planter, and public art (mural on the pump station and educational sculpture). The area surrounding the detention basin will be planted with new trees, native grasses, and a pollinator garden. Additionally, the park facilities are designed to meet ADA accessibility standards.

Hanson Russian River Access and Trail Project
Role: Landscape Architect, Project Manager
Client: Sonoma County Regional Parks Department
Location: Windsor, CA

Responsible for conceptual design development for a new regional park, trail, boat portage, and seasonal campground. Site layout plans and visualizations were developed to meet code requirements and project goals for providing access and public use. A multi-use trail alignment was designed providing access to a new seasonal campground and public parking facilities. The trail and campground are situated on the upland perimeter of a proposed floodplain establishment on the Russian River. Plans to be used for future environmental review.

Gleason Beach-Park and Trails
Role: Project Manager
Client: Sonoma County Regional Parks
Location: Sonoma County, CA

In conjunction with Caltrans and the County of Sonoma, this project is one of the first of its kind in California dealing with the impacts of coastal erosion due to sea-level rise. A multi-faceted project, it aims to restore Scotty Creek, move, and elevate a portion of Highway 1, provide safe and functional access to the Beach, extend, and modify an existing trail, provide outlooks and park area capable of adaptation to the inevitable bluff erosion. The project is currently in the schematic design phase.

Lower Peter's Canyon Rest Area
Role: Landscape Architect
Client: Orange County Parks
Location: Tustin, CA

Provided landscape design and full construction documents for landscape related project elements for a trail head location at Lower Peter's Canyon. Site elements included a restroom, shade structure, benches, kiosk, decorative paving, and planting. Construction detailing was provided for all site furnishing, fencing, and paving. The planting design utilized California natives and a temporary irrigation system.

Perez Park Landscape Design
Role: Landscape Architect
Client: Orange County Public Works
Location: Costa Mesa, CA

Provided landscape design support and quality control/ review for the development of a green infrastructure community park. The design integrated water quality treatment and storage into a small pocket park that also provided community park resources such as play equipment, seating walls, tables, shade structures, entry monuments, specialty paving, fencing, walls, and landscape planting and irrigation.

Beach Boulevard Infrastructure Replacement Project
Role: Landscape Architect
Client: City of Pacufuca
Location: Pacifica, CA

Served as Landscape Architect for the preparation of design alternatives for the development of an ocean front promenade. Developed alternatives for treatment of the public space between a proposed ocean protection structure (sea wall) and the existing road. Alternatives addressed parking needs, horizontal and vertical relationships, paving and landscape, accessibility and circulation, and site amenities. Alternative were used for multiple virtual public workshops to develop community consensus on a preferred alternative.

Bayshore Bikeway Sea Level Rise Resiliency Project
Role: Landscape Architect
Client: City of Imperial Beach
Location: San Diego, CA

Serves as landscape architecture lead for a multidisciplinary project involving a raised multiuse/ multi-benefit pathway implemented to provide the City of Imperial Beach both access improvements, sea level rise resiliency, flood control improvements and habitat enhancement within a federally managed refuge area. The role of lead landscape architect includes tasks, such as oversite of project scope, fees, design team management, preparation of design documents, cost estimates, special provisions, and oversight and control over development of 3d visualizations for communicating design intent to the City of Imperial Beach and other stakeholders.

Eel River Trail
Role: Landscape Architect
Client: City of Rio Dell
Location: Rio Dell, CA

As a part of the Greater Redwoods Trail, Phase 1 of the Eel River Trail is a new 0.25-mile shared use path along the west bank of the Eel River. Landscape architect lead for the design layout and construction detailing of trail amenity features and plaza area. Design features included a trail kiosk, benches, hardscape, an art wall, seat walls, and drinking fountain.

Marco Biagioni, PE

Senior Inspector

Experience

42 years

Qualifications/Accreditations

– BS Civil Engineering Universidad Catolica Andres Bello, Venezuela 1980

– Professional Engineer: State of Florida # 60014

Relevance to the project:

Mr. Biagioni has over 42 years of experience managing and inspecting Civil Engineering projects. Possessing a diverse background, he has provided CEI services for roadway and bridge projects, injection wells, pump stations, canal dredging, drainage, utilities and large infrastructure projects.

Project experience

San Marco Island Drainage Pump Station and Storm Sewer System,
Role: Senior Inspector
Client**:** City of Miami Capital Improvements Program (OCI)
Location**:** Miami, FL

As part of the General Construction Engineering Observation Contract with Miami, ADA provided staff to observe and document the construction of a new stormwater pump station with drainage wells and an overflow outfall to Biscayne Bay. The stormwater system also included French drainage and gravity storm sewers. Mr. Biagioni served as Project Manager in charge of supervising the CEI team and overall inspection of all project activities including material testing and acceptance for the roadway construction and specialty pump station installation.

The Bicentennial Park Seawall Replacement Phase 4
Role: Senior Inspector
Client**:** Confidential
Location**:** Miami, FL

Project ($5 Million) provided for the demolition and replacement of the final 611 lineal feet of bulkhead, with the project terminating at the Port of Miami Bridge. The bulkhead in this location required the use of custom fabricated 65 foot long epoxy-coated steel sheeting driven deep into the sea substrate. The wall was finished with a 42 inch concrete cap and a contiguous concrete curtain which extends down below the water line at low tide.

Haulover Park Marina Reconstruction Phase 2
Role: Senior Inspector
Client**:** Confidential
Location**:** Miami, FL

Scope of work consisted in the excavation of 47,000 cubic yards of upland property, the construction of a 625 lineal foot concrete bulkhead with tie-back anchors and the demolition of the existing concrete piers. Four new main piers, designed to accommodate 85 additional vessels were constructed in the new basin, which was dredged to an average depth of 8 feet. The previously existing 600 lineal foot steel sheet pile bulkhead was removed upon completion of the excavated basin. A new floating ADA accessible dock was installed at the new bulkhead. All pre-cast concrete sections for the concrete docks and the concrete bulkhead were manufactured on site at the north end of the Park. As the project manager, he was in charge of managing the entire workforce for both projects, his duties included interacting with the owner and all official agencies with jurisdiction over the project: Miami Dade County public works, Miami Dade County Parks and Recreation, Fire Department and Building and Zoning department. He was also in charge of conducting weekly progress meetings, shop drawing submittal, material certification and samples submittal, Environmental permits compliance and closure, monthly schedule and payment updates and final acceptance inspections coordination.

Caloosahatchee River (C-43) West Basin Storage Reservoir Project
Role: Project Manager (Irrigation Pump Station S-470)
Client**:** South Florida Water Management District
Location**:** Florida

The project intent was to replace the existing LPDD pump stations in order to provide irrigation water to the adjacent agricultural areas. Mr. Biagioni served as Project Manager controlling budget, schedule and supervision of the QA

team. His team was responsible for inspections of all project activities including material testing and acceptance of equipment (195 CFS vertical line electric driven pumps – 3 @ 65 CFS ea w / 350 HP motors) that was installed at this pump station (PS-476).

Naples Big Cypress Field Station Relocation Project
Role: Resident Engineer
Client**:** ***South Florida Water Management District***
Location**:** Miami, FL

This $9 million project put crews closer to eastern Collier County, where most of the basin's canal and gates are located. This location doubled the size of the previous field station. A gas station on the site ended the pull of equipment into the neighborhood gas station for a fill-up or to top off the tank before a hurricane. The field station have a new microwave tower allowing the water management district to monitor the basin's canals and water control structures from its West Palm Beach headquarters. This facility includes a huge maintenance barn allowing mechanics to work indoors. I served as an Owner Field Representative, inspecting documenting and reporting all contractor activities. I was also in charge of conducting bi-weekly progress meeting, shop drawings comments and material certification; monthly schedule and approval of payments request by Contractor

Caloosahatchee River (C-43) West Basin Storage Reservoir
Role: Lead Field Engineer
Client**:** South Florida Water Management District
Location**:** Florida

This $750 million project will improve the timing, quantity, and quality of freshwater flows to the Caloosahatchee River and Estuary. To restore and maintain the estuary during the dry season, the project will capture and store basin stormwater runoff, along with a portion of the water discharged from Lake Okeechobee. Water will be slowly released into Caloosahatchee, as needed. This project also provides secondary benefits, once the needs of the estuary are met, along with recreational benefits. Project features include:

- 10,500 acres storage reservoir
- 1,500 cubic feet per second (cfs) pump for filling the reservoir
- Perimeter canal to convey drainage off-site
- Recreation component

He served as the Owner's Construction Manager providing daily observations of the construction activities to ensure compliance with the contract documents. This included maintaining accurate records of the SOV items utilized daily and issuing reports documenting the achieved progress.

ST-2E SDWWTP RAS Pipeline
Role: Senior Inspector
Client**:** Miami-Dade Water and Sewer Department
Location**:** Miami, FL

ADA will be inspecting the construction activities associated with replacement of approximately 1,150 linear feet of 36" Return Activated Sludge (RAS) pipeline from RAS Pump Station 1 to Oxygenation Tanks 1-4. In addition, approximately 1,300 linear feet of new 36" pipeline from RAS Pump Station 1 to Oxygenation Tanks 1-4 on the East side of the structures will also be constructed. Demolition of deteriorated RAS piping is also included under this project. This project is one of many required for compliance with the State of Florida's Ocean Outfall Legislation and is being processed under Section 2-8.2.12 of the Code, entitled Miami-Dade Water and Sewer Department Consent Decree and Capital Improvement Programs Accelerate Ordinance. Mr. Biagioni serves as ADA's Senior Inspector, responsible for ensuring the project is delivered in compliance with the approved drawings and specifications. He is responsible for documenting daily activities, inspecting materials upon arrival to the site and coordination with the Construction Manager.

Fort Lauderdale Airport Runway Expansion Project
Role: Lead Field Engineer
Client**:** Hollywood International Airport
Location**:** Florida

Lead Field Engineer, Project consists of expanding the South Runway to a total of 8,000 LF long by 150 LF wide along with associated taxiways and infrastructure. The list of activities includes both mayor roadway and structural components such as: Placing over 7 million of cubic yards of fill, pouring over 535,000 square yards of concrete for the runway pavement and over 68,000 cubic yards of concrete for the multiple structures within the scope of work as well as placing over 90,000 tons of asphalt for the runway. A total of 2650 concrete piles and 840 concrete beams were installed to create the elevated runway over US1. I served as the Lead Field Engineer on behalf of the owner (Broward County) in charge of supervising the entire field inspection team and making sure all project activities were properly inspected & documented and that all materials were tested and verified in accordance with the contract documents requirements.

Xavier Sabando

Senior Inspector

Experience

37 years

Qualifications/Accreditations

– BS, Civil Engineering Guayaquil State University, Ecuador 1987

Relevance to the project:

Mr. Sabando has over 37 years of experience in the horizontal construction industry. His diverse background includes the construction of utilities, injection wells, roadway, drainage and bridges throughout South Florida. Throughout his career, he has demonstrated the ability to manage construction activities both within the Right of Way and facilities while maintaining synergy with the Contractors. With a keen attention to detail and meticulous approach, his presence on a project ensures that only the highest degree of quality is achieved. and water main projects.

Project experience

San Marco Island Drainage Pump Station and Storm Sewer System
Role: Senior Inspector
Client**:** City of Miami Capital Improvements Program (OCI)
Location**:** Miami, FL

Senior Inspector for this OCI project. As part of the General Construction Engineering Observation Contract with Miami, ADA provided staff to observe and document the construction of a new stormwater pump station with drainage wells and an overflow outfall to Biscayne Bay. The stormwater system also included French drainage and gravity storm sewers. He was responsible for documenting daily construction activities, labor force and equipment, identifying safety deficiencies and verification of activities for conformance with the approved drawings and verification that the proper Maintenance of Traffic was in place. His responsibilities also included inspecting materials upon delivery for conformance with the approved shop drawings. Before acceptance of the project, he witnessed the electrical testing as well as pressure testing of the 24" DIP force main.

Vanderbilt Park (Basin F-1) Drainage Improvements
Role: Senior Inspector
Client**:** City of Doral Public Works Department
Location**:** Florida

The project scope included the construction of a new drainage collection system including french drain, replacement of damaged Type F curb, pavement restoration and roadway milling and resurfacing. T hese improvements were completed within the Vanderbilt Park area within the City of Doral. ADA provided Construction Engineering Inspection (CEI) services during the construction phase. ADA provided a full-time Sr. Inspector and part-time Project Engineer to oversee the project. ADA's Sr. Inspector witnessed the daily construction activities for general conformance with the construction documents, verified the proper Maintenance of Traffic (MOT) was in place, inspected the materials upon delivery to the site, witnessed geotechnical tests and issued daily reports. ADA's Project Engineer was responsible for providing oversight of ADA's Sr. Inspector, attending bi-weekly meetings and reviewing and approving payment requisitions. A Substantial Completion/Punchlist walk through was completed with the Contractor and Public Works Department. Upon issuance of the punchlist, ADA verified that the items pending resolution were completed.

PortMiami Cargo Gate Modifications and Process Improvements
Role: Senior Inspector
Client**:** PortMiami
Location**:** Miami, FL

Senior Inspector at the PortMiami project consisting of roadway and drainage improvements as well as a new water main. Responsible for monitoring all construction activities, documenting pre-trenching activities to identify utility conflicts, verifying that the proper Maintenance of Traffic (MOT) is in place, inspecting materials upon delivery for conformance with the approved shop drawings and direct communication with the PortMiami Construction Manager.

Shenandoah Roadway Improvements
Role: Senior Inspector
Client**:** City of Miami Office of Capital Improvements
Location**:** Miami, Florida

Mr. Sabando was the Senior Inspector/Project Administrator for this project. He performed inspections of the delivered materials for acceptance according to the contract drawings and specifications. The inspected materials and activities include milling and resurfacing, tack coat, asphalt, and striping. He was also responsible for verifying that the proper Maintenance of Traffic was in place. Daily reports were generated documenting the completed activities and the quantities utilized.

Coral Gate Roadway Improvements
Role: Senior Inspector
Client**: *City of Miami Office of Capital Improvements***
Location**:** Miami, FL

Mr. Sabando was the Senior Inspector for this project. The project scope included the installation of a new drainage system, removal and replacement of existing curbs and pedestrian cross walks, new traffic circle with landscaping as well as milling and resurfacing of the existing roadway within the project limits. His duties included observation of the construction activities for compliance with the approved construction documents, verification of the quality of materials when delivered and checking asphalt temperature prior to installation.

Palm Grove Roadway and Drainage Improvements
Role: Senior Inspector
Client**:** City of Miami Office of Capital Improvements
Location**:** Miami, FL

Mr. Sabando was the Senior Inspector for this project. The project scope included the installation of new drainage, removal and replacement of existing curbs and pedestrian cross walks. His duties include observation of the construction activities for compliance with the approved construction documents, verification of the quality of materials when delivered.

Fort Lauderdale International Airport Expansion
Role: Senior Inspector
Client**: *Fort Lauderdale International Airport***
Location**:** Ft. Lauderdale, FL

Responsible for performing technical assignments in field surveying and construction layout, making, and checking engineering computations, inspecting construction work, and conducting field tests and was responsible for coordinating and managing the other inspectors. Work was performed under the general supervision of the Project Administrator. The primary duties for this position require the experience and knowledge of performing Construction Engineering & Inspection (CEI) duties including construction inspection, materials testing, and the understanding of Florida Department of Transportation (FDOT) construction project administration methods and processes. Perform field inspection, material testing, and documentation along with other tasks. Read and interpret construction plans, specifications, and other contract documents, and identify discrepancies or conflicts within the documents as well as the enforcement of these contract documents.

Roadway/Drainage Reconstruction along Miami-Dade County
Role: Senior Inspector
Client**:** Confidential
Location**:** Miami, FL

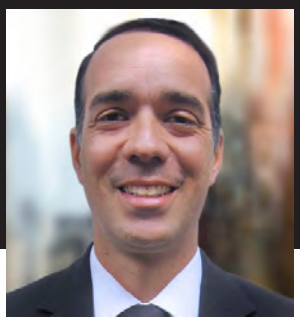
Responsible for supervision of all existing removing, reconstruction and new jobs on streets, subbase, base, asphalt milling, drilled shafts, drainage, sidewalks, deep pools, electrical installations, structural & no-structural concrete, asphalt inspection, placement, sampling and testing operations. Controlling density tests for new streets, subbase, and base, responsible for monitoring and pay all compute estimates.

N-2E NDWWTP Municipal Injection Wells
Role: Senior Inspector
Client**:** Miami Dade Water & Sewer Department (WASD)
Location**:** Miami-Dade County, FL

ADA is inspecting the construction activities associated with the construction of five (5) injection wells approximately 3,300 feet deep, two (2) Floridan Aquifer monitoring wells approximately 1,500 feet deep and drilling pad monitoring wells, drilling pads, site work, and wellhead piping. Each of the (5) wells will have a permitted capacity of 18.65 mgd at a maximum flow rate of 10 feet/second and provide an additional disposal capacity of 74.6 mgd in an N+1 configuration for redundancy purposes. The injection wells will be installed with surface casing (54-inch OD) set at approximately 350 bls and intermediate casing (44-inch OD) to approximately 1,100 feet bls using the conventional mud rotary drilling method. Well construction will then be converted to the reverse air circulation method. A second intermediate casing (34-inch OD) will be set at approximately 1,500 feet bls and the final 24-inch seamless casing string will be set to a depth of approximately 2,800 feet bls. Mr. Sabando serves as ADA's Senior Inspector, responsible for ensuring the project is delivered in compliance with the approved drawings and specifications. He was responsible for documenting daily activities, inspecting materials upon arrival to the site and coordination with the Construction Manager.

Waddie D. Ruiz, PE, CGC

Senior Civil Engineer



Experience

26 years

Qualifications/Accreditations

– BS, Civil Engineering University of Puerto Rico (Mayaguez) 1997

– Professional Engineer: Florida No. 62714 (Est. 2005); Puerto Rico No. 16982 (Est. 2000)

– Certified General Contractor: Florida No. 1511731 (Est. 2006)

Relevance to the project:

Mr. Ruiz has 26 years of professional engineering consulting and construction management experience and holds professional engineering licenses in both Florida and Puerto Rico. He's also a certified general contractor in the State of Florida. His work expertise includes project management for both design and the construction of water and wastewater systems, roadways, drainage systems, and land development. Mr. Ruiz's experience also includes permitting, with a focus on Miami-Dade County Water and Sewer Department (WASD), the Florida Department of Transportation (FDOT), the City of Miami Public Works, the Department of Regulatory and Economic Resources (DRER), the Florida Department of Health, and the City of Miami Fire Department.

Project experience

San Marco Island Drainage Pump Station and Storm Sewer System
Role: Senior Civil Engineer
Client**:** City of Miami Capital Improvements Program (OCI)
Location**:** Miami, FL

As part of the General Construction Engineering Observation Contract with Miami, ADA provided staff to observe and document the construction of a new stormwater pump station with drainage wells and an overflow outfall to Biscayne Bay. The stormwater system also included French drainage and gravity storm sewers. Mr. Ruiz assisted as a Senior Inspector for this project, for which he performed inspections of the delivered materials for acceptance according to the contract drawings and specifications. The inspected materials included Portland cement, tack coat, asphalt, and reinforcing steel. He was also responsible for verifying that the proper maintenance of traffic was in place. Daily reports were generated documenting the completed activities and the quantities utilized.

South Bayshore Lane S Stormwater Pump Station
Role: Senior Civil Engineer
Client**:** City of Miami Department of Capital Improvements & Transportation Public Works
Location**:** Miami, FL

ADA designed a new stormwater pump station as Phase II for the Roadway and Drainage Improvements to South Bayshore Lane, between East Fairview Street and West Fairview Street. The purpose of the stormwater pump station is to address the flooding experienced in the area, while addressing the rising King Tide conditions e xperienced in the City's coastal communities. A DA provided the required services including project management, engineering and construction documents for the pump station. The level of effort included development of a site plan, pump design, and structural and electrical design of the pump station, as well as the electrical design for the new backup generator. Analysis of the existing 15" reinforced concrete pipe (RCP) outfall on South Bayshore Lane determined its functionality and effectiveness in conveying the flows from the new stormwater pump station. Mr. Ruiz served as the Project Manager and Engineer of Record in charge of the design and coordination with other disciplines in the development of Contract Documents for the project.

South Bayshore Drive Roadway and Drainage Improvements
Role: Senior Civil Engineer
Client**:** City of Miami Office of Capital Improvements
Location**:** Miami, FL

The project scope of work consisted of 1.5 miles of roadway reconstruction of South Bayshore Drive and included drainage improvements, curb and gutter (in both directions), sidewalks and pedestrian ramps, a bike-way, a

shared common path, landscaping, roadway lighting, traffic signalization improvements, permitting, utility coordination, and signing & pavement markings. Also included was the Master Planning process that identified design and alignment options in conjunction with conducting public involvement and public hearings. Additionally, and during the initial contact with Miami-Dade County Water & Sewer Department (WASD), the need to upgrade an existing water main from a 6-inch to an 8-inch line was added. Mr. Ruiz was the Project Engineer responsible for the design of the roadway including alignment and geometry as well as the utility coordination.

Shorecrest Roadway and Drainage Improvements Project
Role: Senior Civil Engineer
Client**:** City of Miami Office of Capital Improvements (OCI)
Location**:** Miami, Florida

ADA provided engineering design for the roadway and drainage improvements in the Shorecrest area located south of NW 79 Street. The purpose of the project is to address the flooding currently being experienced in the area due to rising King Tide conditions being experienced in the City's coastal areas. Services rendered include project management, engineering analyses, design and permitting in addition to construction phase services such as shop drawings review, procurement support, responding to RFIs, performing periodic inspections to ensure construction is in adherence to the approved Contract Documents and completed in accordance with City Standards and Specifications. The level of effort includes development of plan and profile drawings, details, summary of pay items and cost estimating. ADA will coordinate with the County's RER and FDOT for their permitting requirements. Mr. Ruiz is the Engineer of Record (EOR) for the Civil Design of the Drainage Sewer System, Roadway Reconstruction, Typical Sections, Pavement, Markings, Storm Water Pollution, Prevention plan, and Maintenance Of Traffic.

Outfall Assessment for Collins Avenue and Alton Road Drainage Systems – Phase I
Role: Senior Civil Engineer
Client**:** FDOT District 6
Location**:** Florida

For this project, Mr. Ruiz performed the field assessment of the outfall. As part of the FDOT District 6 district-wide Drainage Design and Plans Review Consultant Contract, our Firm assisted the FDOT in preparing an Outfall Assessment Report regarding the condition of the outfalls associated with the Collins Avenue and Alton Road drainage systems. Our scope of work included: Data Collection and Evaluation; Outfall Field Assessment; Outfall GIS Database U pdate; O utfall A ssessment Report Development (Phase I); and Outfall Diving Inspection. The Outfall Assessment Report (Phase I) documented the conditions of the existing outfalls associated with these two roads and provided recommendations and costs for the outfalls that require repairs. This report also provided recommendations and costs for outfalls that required diving or video inspections and easement or right-of-way evaluations to better assess the required repairs.

Outfall Assessment – Collins Ave. Drainage System from NE 159th Street to NE 174th Street
Role: Senior Civil Engineer
Client**:** ***FDOT District 6***
Location**:** Florida

ADA Engineering played a crucial role as part of the Design team, providing professional engineering services to the FDOT Drainage Department for evaluating seven outfalls along Collins Avenue. The project involved comprehensive activities, including data collection from FDOT D-6 and the City of North Miami Beach, field inspections to assess outfall conditions and locations, hydraulic analysis for capacity evaluation, identification of repair needs and retrofit measures, preliminary structural evaluations, coordination meetings, and the development of the Outfall Assessment Report – Phase II. Additionally, ADA updated the GIS Geo Database with inspected outfalls and facilitated coordination meetings with FDOT throughout the project.

West Fairview Roadway & Drainage Improvements & Watermain
Role: Senior Civil Engineer
Client**:** City of Miami Capital Improvements Program (CIP)
Location**:** Miami, FL

This project was a Joint Participation Agreement (JPA) between the City of Miami and Miami-Dade Water and Sewer Department. The project objective was to have one project in which all the proposed improvements were constructed concurrently. ADA provided design services for roadway and drainage improvements as well as new eight-inch DIP water main for the project limits consisting of West Fairview Street, East Fairview Street, and South Bayshore Lane. The roadway improvements included roadway reconstruction, new pavement markings, a new concrete curb, replacement of damaged curbs, and replacement of damaged sidewalk. Drainage improvements consisted of the installation of three inline valves in the existing outfalls to mitigate tidal flooding, replacement of an existing drainage collection system with a continuous, water-tight collection system, and lining a portion of the current drainage system. As the Engineer of Record (EOR), Mr. Ruiz designed the new storm sewer system and the reconstruction of the roadway, and also assisted with the development of construction contract documents and the preparation of permit applications.

Education
Geomatics Certificate, University of Florida, 2024

BA, University of South Florida, 2021

AA, Hillsborough Community College, 2011

Professional Certifications
OSHA 10 Hr Certification

PowerSafe (Duke Energy)

IMOT

First Aid/CPR

Nicholas Fewell, CST

Subsurface Utility Engineering (SUE) Lead | SUE Investigator

Mr. Fewell has over 14 years of field and management experience. He is one of CED's lead SUE managers, responsible for leading designating and locating crews to successful completion of assignments. His responsibilities include project management, serving as client liaison, communicating with utility owners, contacting state "One-Call" systems, and ensuring compliance with all CED safety and subsurface utility engineering operations.

As a subsurface utility engineering investigator, Mr. Fewell has worked on various project assignments for numerous departments of transportation and other clients such as FDOT, GDOT, LaDOTD, TxDOT, DUKE Energy, Mosaic, Florida Power & Light, TECO Electric, TECO Peoples Gas, Kinder Morgan, Florida Gas Transmission, various state and local governments/municipalities, various contractors, DOD, and Marine and Airport Authorities.

Key Projects

Calusa Trace Flow Diversion, *Hillsborough County, FL*
CED provided survey and SUE services under a professional services contract in support of the design of 3,200 ft of proposed force main. The scope of services included a topographic survey, establishing control, right of way mapping, identifying existing utility easements and property lines and their respective boundaries, utility designation and utility locating. The survey with utility designates were provided to the engineers so they could design their path. Utility locates were completed after design of the force main path at critical utility conflict locations as well as the two tie-in points to the existing wastewater systems.

WO3 SUE Services - City of Tampa Survey Contract, City of *Tampa, FL*
CED was awarded a SUE services work order under the City of Tampa Survey Contract. The purpose of the work order is to provide SUE services in support of wastewater engineering. CED has completed three tasks in support of wastewater facilities design providing QL-B designates and QL-A testholes to verify the precise horizontal and vertical positions of utilites in conflict with the proposed design. Our services have provided additional information on utilities that were not known to be within the scope to be included on the design plans. CED has also completed one emergency task related to a joint Storm water project between FDOT and City of Tampa. Time was of the essence for this request to reduce construction delays and costs CED had crews on-site as soon as the 811 ticket was active. Field work & office work was completed and deliverables provided the same day.

TECO Master Services Survey Contract, *Various Counties, FL*
CED has successfully located gas pipelines, in multiple locations, that TECO locators determined were unlocatable. CED used survey-grade data to update TECO People's Gas GIS system for multiple projects to enable future accurate locates. CED used as-built records, historical aerials, utility designation, test holes and air lance probing to locate undetectable high priority gas mains. CED was also able to repair the tracer wire in some instances to allow ease for future locates.

Evergreen & SR 50 Casings, *Hernando County, FL*
CED provided QL-A and QL-B services in support of roadway design. CED was tasked with locating the ends of casings for a water main, force main and gravity sewer. CED utilized QL-D through QL-A services to successfully locate the end of the casings to verify that their lengths were sufficient for roadway expansion along SR 50 in Hernando County.

Grace World Church Addition, *Brooksville, FL*
Provided QLA & QLB services associated with expansion of development on the Church campus on an approximately 13.3 acre property. The development consists of an approximate 5,200 SF two-story building addition and an approximate 8,500 SF gathering building area.

District Wide SUE Designate, Locate and Coordination, FDOT District 1, *FL*
Prime contract holder with 30+ TWOs performing SUE designates and locates for projects in final design. These tasks entail SUE and survey support services to assist in the design and resolution of conflicts for stormwater, roadway and traffic improvements. Typically, these include accelerated schedules to ensure conflicts were resolved prior to construction with significant UAO and stakeholder coordination.

Reclaimed Water Transmission Main Design, *Braden River, FL*
Provided designating (CI/ASCE 38-02 Quality Level B) and locating (CI/ASCE 38-02 Quality Level A) subsurface utility engineering and supporting survey services to map the underground utilities within the project limits to support design efforts for the reclaimed water transmission.

SRQ International Airport Culvert and Utilities Exploration, *Sarasota, FL*
Provided subsurface utility engineering in accordance with (CI/ASCE 38-02 Quality Levels A and B) and supporting survey services to map the horizontal and vertical position of existing underground utilities in support of the design and construction of all taxiways, runway and drainage improvements. CED used the results of the forensic exploration to provide remediation recommendations for the issues (i.e. depressions) caused by the existing stormwater pipeline. Careful coordination between the SUE team, geophysical team, and geotechnical team were critical to provide a seamless deliverable to the airport that accurately depicted the locations of utilities, all subsurface anomalies indicated by the GPR, and the results of the physical that were used to correlate the GPR results. In addition, the entire program had to be performed at night within an accelerated timeframe, to avoid disturbing the functioning airport.

RSW Airport Taxiway/Runway Rehabilitation, *Lee County, FL*
Provided subsurface utility engineering in accordance with (CI/ASCE 38-02 Quality Levels A and B) and supporting survey services to map the horizontal and vertical position of existing underground utilities in support of the design and construction of all taxiways, runway and drainage improvements.

Years of Experience
17 Years

Education
BS, Geomatics, University of Florida, 2009

Professional Registrations
Professional Surveyor and Mapper (PSM) Florida, 2016

R. Wyatt Altman, PSM

Senior Project Manager | Survey | Right of Way

Mr. Altman is an experienced Survey Project Manager with extensive and diversified expertise that includes digital imaging and mapping, geodesy, GIS, GPS, photogrammetry, land tenure and cadastral studies, LiDAR, and remote sensing techniques. He has performed hydrographic, ALTA, full topographic, and boundary surveys; sub-surface utility locating; and construction layout. He also has expertise performing data processing using AutoCAD, CAice, Trimble Business Center, GeoPAK and Starnet.

Key Projects

SR 54 Design-Build Survey Services, FDOT District 7, *Pasco County, FL*
Survey Crew Chief providing Mobile LiDAR services and post-processed and delivered data for this design-build contract, which consisted of road widening, sidewalk design, and signal redesign for seven miles of SR 54. Responsibilities included utilizing Mobile LiDAR, Static LiDAR, and Aerial LiDAR to create standard FDOT compliant deliverables. TopoDOT was used to extract 3D break lines, features, and ground points for creation of a detailed DTM and standard 2 planimetric files. This information was also combined with conventional boots on the ground survey data and existing information provided by the FDOT from earlier surveys in order to completely cover the corridor width. This investigation found about 70% of the corridor needed to be resurveyed, a process that was completed in a timely matter by leveraging the LiDAR technology.

District Wide SUE Designate, Locate and Coordination, FDOT District 1, *Districtwide, FL*
Performed task work orders to provide Quality Level A and B subsurface utility investigations. Quality Level A involves the use of the use of nondestructive digging equipment at critical points to determine the precise horizontal and vertical position of underground utilities, as well as the type, size, condition, material, and other characteristics. Quality Level B involves the use of surface geophysical techniques to determine the existence and horizontal position of underground utilities.

Hillsborough Transportation Design and General Engineering Services, *Hillsborough County, FL*
CED was awarded a county wide contract with Hillsborough county for continuing service for survey support. This contract has provided 2 tasks. Task 1 we provided a topographic and SUE survey for the intersection of Durant Road and Miller road. Under task 2 we provided topographic and SUE survey for the intersection of CR 579 and Old Hillsborough road.

SR 519 from I-95 to North of SR 520, FDOT District 5, *Brevard, FL*
CED acted as a subconsultant to Tetra Tech to support this four (4)-mile pavement rehabilitation project. The project scope included milling and resurfacing of the roadway, drainage improvements, various safety and ADA improvements as well as a Right of Way Control Survey for the corridor. Colliers Engineering & Design leveraged a combination of Terrestrial Mobile Lidar and conventional survey to expedite the creation of a digital terrain model of the roadway with significant detail for cross slope correction and curb design. We designated Subsurface utilities for the entire corridor in order to assist with design decision and improvements..

R. Wyatt Altman, PSM

SR 528 from Narcoossee Road to 1.3 Miles east of International Corporate Park Boulevard, *Orlando, FL*
Survey Crew Chief & CADD Technician for mobile scanning of seven (7) miles of a major arterial roadway in the metro Orlando area. Performed topographic survey data collection using terrestrial mobile LiDAR scanning and assisted in the development of digital planimetric drawings.

SR 694 Gandy Boulevard, FDOT District 7, St. Petersburg, *Pinellas County, FL*
Managed the data collection for the location of the entire storm water network in only two days which would have taken twice the time using conventional survey techniques. Analyzed the data for proper flow and missing structures further saving time in the field for the main topographic survey. Attribute data such as inverts, pipe type, pipe size and direction were then used as a QC tool to create the final storm water deliverable. Project consisted of a design survey for the SR 694/Gandy Blvd. from West of Interstate 275 to East of 4th street for the purpose of redesigning the intersection of Gandy Blvd, Roosevelt Blvd and 4th St., as well as Gandy Blvd and 9th Street. Team delivered design files for planametics, 3D DTM files, and storm water location files. The storm sewer infrastructure within this project was complex and due to the coastland elevations, confusing to determine storm water flows. Team implemented Trimble RTK GPS with integrated GIS libraries to quickly map the storm structures, decipher flow direction, and collect pertinent attribute data prior to conventional location.

Gateway Expressway Design Build, FDOT District 7, *Pinellas County, FL*
Awarded to the Archer Western-de Moya JV team in the summer of 2017, this design-build project is changing the existing roadway system in Pinellas County in order to enhance safety, add capacity, and improve mobility by creating two new four-lane elevated tolled roadways. With approximately 90 miles of roadway affected by this construction, fast and accurate survey data collection was paramount to the design process. Colliers Engineering & Design supported BCC Engineering on this project by providing mobile LiDAR collection for the entire proposed corridor and design survey file creation to produce topography and a digital terrain model over the entire project limits.

SR 417 Widening from Landstar to Boggy Creek, Central Florida Expressway Authority (CFX), *Orange County, FL*
CED acted as a subconsultant to Horizon Engineering Group, Inc. in support of the design of highway widening and various other improvements along SR 417 from Landstar Blvd to Boggy Creek Rd. The survey scope of work included planimetric mapping and digital terrain modeling of the entire project corridor, from Right of Way to Right of Way for over four miles of highway and cross streets. Colliers Engineering & Design provided underground utility designates and locates, Mobile LiDAR, and UAS LiDAR, which were used to locate and document existing ground features along the roadway. Areas not visible for LIDAR collection, such as drainage ditches and wooded areas, were collected conventionally by RTK GPS or Total station. The resulting datasets were merged to create a highly detailed and comprehensive final design survey deliverable. Mr. Altman managed and coordinated field activities and survey data process.

Appendix B

→ Licenses

State of Florida
Department of State

I certify from the records of this office that GHD SERVICES INC. is a Delaware corporation authorized to transact business in the State of Florida, qualified on October 16, 2003.

The document number of this corporation is F03000005291.

I further certify that said corporation has paid all fees due this office through December 31, 2025, that its most recent annual report/uniform business report was filed on April 14, 2025, and that its status is active.

I further certify that said corporation has not filed a Certificate of Withdrawal.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Fifth day of June, 2025

Secretary of State

Tracking Number: 3797564024CU

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication


STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
DAVIS, JESSE W.
25000 SW 189TH AVE
HOMESTEAD FL 33031
LICENSE NUMBER: PE70660
EXPIRATION DATE: FEBRUARY 28, 2027


STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
TIRADO, VICTOR
47 WHEELHOUSE WAY
BLUFFTON SC 29910
LICENSE NUMBER: PE90925
EXPIRATION DATE: FEBRUARY 28, 2027


STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
BURNS, MELISSA KALEN
625 MAYFAIR
ALTAMONTE SPRINGS FL 32701
LICENSE NUMBER: PE82221
EXPIRATION DATE: FEBRUARY 28, 2027


STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
JANOSIK, STEVEN A.
436 S. RIVERHILLS DRIVE
TEMPLE TERRACE FL 33617
LICENSE NUMBER: PE69825
EXPIRATION DATE: FEBRUARY 28, 2027


STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
BARNETT, MICHAEL ROBERT
3762 OAKWOOD LANE
MOBILE AL 36608
LICENSE NUMBER: PE44625
EXPIRATION DATE: FEBRUARY 28, 2027


STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
RAKICH, JESSICA RENEE
3209 COLONY CLUB RD
APT
POMPANO BEACH FL 33062
LICENSE NUMBER: PE100951
EXPIRATION DATE: FEBRUARY 28, 2027

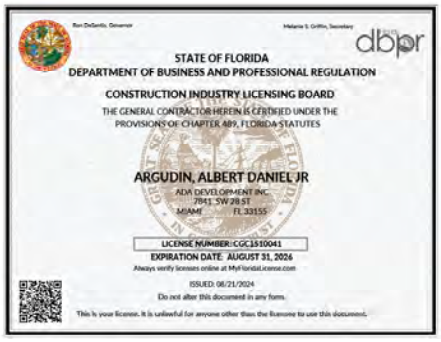

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
HESS, JEREMY K.
6300 26TH AVENUE N
ST. PETERSBURG FL 33710
LICENSE NUMBER: PE82353
EXPIRATION DATE: FEBRUARY 28, 2027


STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
MOORE, BRIAN
911 LUMSDEN RESERVE DR
BRANDON FL 33511
LICENSE NUMBER: PE64017
EXPIRATION DATE: FEBRUARY 28, 2027


STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
PHILLIPS, JOHN COLLIER
2111 HILLS AVENUE
TAMPA FL 33606
LICENSE NUMBER: PE47586
EXPIRATION DATE: FEBRUARY 28, 2027


STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
BRENT, JONATHAN ALLEN
55 TWIN FLOWER PL
SAINT JOHNS FL 32259
LICENSE NUMBER: PE89641
EXPIRATION DATE: FEBRUARY 28, 2027


STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
ARGUDIN, ALBERTO DEJESUS
13041 SW 26 ST
MIAMI FL 3317572
LICENSE NUMBER: PE23547
EXPIRATION DATE: FEBRUARY 28, 2027


STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
CONSTRUCTION INDUSTRY LICENSING BOARD
THE GENERAL CONTRACTOR HEREIN IS CERTIFIED UNDER THE PROVISIONS OF CHAPTER 489, FLORIDA STATUTES
ARGUDIN, ALBERT DANIEL JR
ADA DEVELOPMENT INC
7941 SW 28 ST
MIAMI FL 33155
LICENSE NUMBER: CGC1510041
EXPIRATION DATE: AUGUST 31, 2026
ISSUED: 08/21/2024

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

BIAGIONI, MARCO ANTONIO
10225 nw 63 TERRACE APT 104
DORAL FL 33178

LICENSE NUMBER: PE60014
EXPIRATION DATE: FEBRUARY 28, 2027
Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.
This is your license. It is unlawful for anyone other than the licensee to use this document.

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

RUIZ-RIVERA, WADDIE D.
15030 BRISTOL LN
DAVIE FL 33331

LICENSE NUMBER: PE62714
EXPIRATION DATE: FEBRUARY 28, 2027
Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.
This is your license. It is unlawful for anyone other than the licensee to use this document.

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

LI, JINGWEI
3380 FAIRLANE FARMS RD
SUITE 14
WELLINGTON FL 33414

LICENSE NUMBER: PE86659
EXPIRATION DATE: FEBRUARY 28, 2027
Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.
This is your license. It is unlawful for anyone other than the licensee to use this document.

THE OFFICIAL SITE OF THE FLORIDA DEPARTMENT OF BUSINESS & PROFESSIONAL REGULATION

dbpr

HOME CONTACT US MYACCOUNT

ONLINE SERVICES
Apply for a License
Verify a License
View Food & Lodging Inspections
File a Complaint
Continuing Education Course Search
View Application Status
Find Exam Information
Unlicensed Activity Search
AT&T Delinquent Invoice & Activity List Search

LICENSEE DETAILS 4:52:12 PM 10/09/2025

Licensee Information

Name:	BIAGIONI, MARCO ANTONIO (Primary Name)
Main Address:	10225 NW 63RD TERRACE APT 104 DORAL Florida 33178
County:	DADE
License Mailing:	10225 NW 63 TERRACE APT 104 DORAL FL 33178
County:	DADE
License Location:	10225 nw 63 TERRACE APT 104 DORAL FL 33178
County:	DADE

License Information

License Type:	Professional Engineer
Rank:	Prof Engineer
License Number:	60014
Status:	Current,Active
Licensure Date:	06/23/2003
Expires:	02/28/2027

Special Qualifications	Qualification Effective
8th Edition, Florida Building Code	01/07/2025

Alternate Names

THE OFFICIAL SITE OF THE FLORIDA DEPARTMENT OF BUSINESS & PROFESSIONAL REGULATION

dbpr

HOME CONTACT US MYACCOUNT

ONLINE SERVICES
Apply for a License
Verify a License
View Food & Lodging Inspections
File a Complaint
Continuing Education Course Search
View Application Status
Find Exam Information
Unlicensed Activity Search
AT&T Delinquent Invoice & Activity List Search

LICENSEE DETAILS 4:53:56 PM 10/09/2025

Licensee Information

Name:	CASEY, MEEGHAN KIMBERLY (Primary Name)
	GHD SERVICES INC (DBA Name)
Main Address:	163 23RD AVENUE NE ST. PETERSBURG Florida 33703
County:	PINELLAS

License Information

License Type:	Professional Geologist
Rank:	PG
License Number:	PG2738
Status:	Current,Active
Licensure Date:	05/03/2012
Expires:	07/31/2026

Special Qualifications	Qualification Effective

Alternate Names

View Related License Information
View License Complaint

2601 Blair Stone Road, Tallahassee FL 32399 Email: Customer Contact Center Customer Contact Center: 850.487.1395
The State of Florida is an AA/EEO Employer. Copyright ©2023 Department of Business and Professional Regulation - State of Florida.
Privacy Statement
Under Florida law, email addresses are public records. If you do not want your email address released in response to a public records

Appendix C

→ References

GHD References

GHD is proud of the teams we assemble, the work we complete, and the satisfaction our clients experience in the quality of our deliverables. GHD presents four references below who serve as testaments to our excellence. Each reference can not only speak to our experience and knowledge across the needed technical fields for the Engineering Design Consultant Services Community Center Shoreline Rehabilitation but also the client-centric approach with which that experience and knowledge is delivered.

1. **City of Miami**
   Point of Contact: Richard A.Pope, Project Manager
   444 SW 2nd Ave, Miami, FL 33130
   T: 305.416.1285
   E: rpope@miamigov.com
   Length of time providing services: 2020 - Ongoing
   List of any other related services provided: Phase I/II Environmental Site Assessments, contamination assessment water quality monitoring, civil design, construction management, design, permitting, construction phase services, seawalls, living shorelines, stormwater outfalls, compound flooding assessments, adapting to sea level rise, neighborhood flood improvements.

2. **Miami-Dade County RER-DERM**
   Point of Contact: Amy Cook, Senior Professional Engineer, Division of Water Management
   701 NW 1st Court, 5th Floor, Miami, FL 33136
   T: 786.683.5833
   E: Amy.Cook@miamidade.gov
   Length of time providing services: 2020 - Ongoing
   List of any other related services provided: Beach planning, permitting, design and construction phase services.

3. **U.S. Army Corps of Engineers - Jacksonville District**
   Point of Contact: Manny Vianzon Jr., Project Manager
   701 San Marco Blvd, Jacksonville, FL 32207
   T: 904.232.3292
   E: Emmanuel.A.Vianzon@usace.army.mil
   Length of time providing services: 2023 - 2024
   List of any other related services provided: Beneficial use of dredge materials, stakeholder engagement, multi-criteria analysis.

4. **City of Fort Lauderdale**
   Point of Contact: Todd Hiteshew, Compliance Manager, Public Works Department
   949 NW 38th Street, Fort Lauderdale, FL 33309
   T: 954.828.7807
   E: THiteshew@fortlauderdale.gov
   Length of time providing services: 2016 - Ongoing
   List of any other related services provided: Phase I/II Environmental Site Assessments, contamination assessment, industrial hygiene, emergency response, and water quality monitoring and data evaluation.

CED References

1. **Charotte County**
   Point of Contact: Brian Hatfield
   T: 941.769.4054
   E: Bryan.Hatfield@charlottecountyfl.gov
   Length of time providing services: 2024 – Ongoing
   List of any other related services provided: Charlotte County, Subsurface Utility Engineering Verification

2. **Pinellas County Parks and Conservation Resources**
   Point of Contact: Greg Milam
   T: 727.582.2537
   E: gmilam@pinellascounty.org
   Length of time providing services: Ongoing
   List of any other related services provided: Professional Engineering Services for Countywide Unmanned Aerial Services & Outback Key Tidal Erosion

RP-23 Proposal Requirements

Team Organization, Management, and Key Personnel Commitment

GHD identified the business group leader (signing authority), project manager, and technical leads for this project in the organizational chart and resumes provided in Section I & II. We affirm that these individuals are integral to the success of this project and will not be substituted without the express written permission of Charlotte County. This commitment ensures continuity of leadership, technical expertise, and accountability throughout all phases of design and construction support.

Lead Designer References

For this project, the Project Manager will serve as the Engineer of Record (EOR) and is supported by a team of technical leads for structural, coastal, civil, geotechnical and environmental disciplines. Section III maps these individuals to their respective roles and the project descriptions provided in Section VI. These project descriptions also include client contact details, which collectively satisfy the County's requirement for references. Please refer to those sections for the complete reference list.

Appendix D

→ Forms

DRUG FREE WORKPLACE FORM

The undersigned vendor in accordance with Florida Statute 287.087 hereby certifies that GHD Services Inc. does:
(name of business)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

Proposer's Signature

February 23, 2026
Date

NAME OF FIRM GHD Services Inc.

(This form must be completed and returned)

HUMAN TRAFFICKING AFFIDAVIT
for Nongovernmental Entities Pursuant To FS. §787.06

Charlotte County Contract #20260251

The undersigned on behalf of the entity listed below, (the "Nongovernmental Entity"), hereby attests under penalty of perjury as follows:

1. I am over the age of 18 and I have personal knowledge of the matters set forth except as otherwise set forth herein.

2. I am an officer or representative of the Nongovernmental Entity and authorized to provide this affidavit on the Company's behalf.

3. Nongovernmental Entity does not use coercion for labor or services as defined in Section 787.06, Florida Statutes.

4. This declaration is made pursuant to Section 92.525, Florida Statutes. I understand that making a false statement in this declaration may subject me to criminal penalties.

Under penalties of perjury, I declare that I have read the foregoing Human Trafficking Affidavit and that the facts stated in it are true.

Further Affiant sayeth naught.

Signature

Melissa Burns, PE

Printed Name

Vice President, Business Group Leader

Title

Nongovernmental Entity

February 23, 2026

Date

END OF PART IV

NAME OF FIRM GHD Services Inc.

(This form must be completed and returned)