

Proposal

to

Charlotte County

for

Design – Wetland Habitat Enhancement and Flooding
Improvements
Charlotte Harbor Flatwoods

RFP NO. 20260279

Monday, March 9th, 2026, 3:00 p.m. (Local Time)



Submitted
by

South Florida Engineering and Consulting LLC



Environmental Solutions through Science and Technology

30 South M Street

Lake Worth Beach, Florida 33460



South Florida Engineering and Consulting LLC

March 9, 2026

Charlotte County Purchasing Division
Attn: Rhiannon Mills, Senior Contract Specialist
18500 Murdock Circle, Suite 344
Port Charlotte, FL 33948-1094

RE: Design – Wetland Habitat Enhancement And Flooding Improvements Charlotte Harbor Flatwoods – RFP NO. 20260279

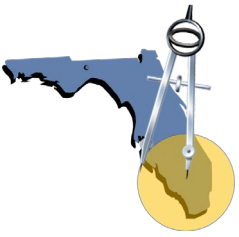
Dear Ms. Mills and Selection Committee,

South Florida Engineering and Consulting LLC (SFEC) is pleased to submit this proposal to provide professional engineering and design services for the Charlotte Harbor Flatwoods hydrologic restoration project. As a firm specializing in water resources and environmental solutions, this project aligns perfectly with our core niche: restoring natural flow to complex wetland systems while balancing the technical demands of flood protection and groundwater recharge.

As a South Florida-based firm specializing in environmental engineering and science-based solutions, we are uniquely positioned to serve the County's needs. Our team of engineers and scientists offers a comprehensive range of engineering, planning, and environmental consulting services. SFEC is a multidisciplinary firm specializing in water resources and environmental engineering, including planning, design, permitting, bid support and construction administration/construction engineering inspection services. The SFEC team routinely works with local, state and federal agencies, and is deeply knowledgeable about current agency rules and regulations.

SFEC brings a robust team of environmental scientists and engineers who are deeply experienced in the specific tasks required to make the Yucca Pens Unit "shovel-ready". Our expertise includes:

- *Advanced H&H Modeling:* Our team has extensive experience utilizing MIKE SHE and MIKE 11 software to simulate surface and groundwater interactions, ensuring our designs restore natural hydroperiods while minimizing offsite flooding.
- *Large-Scale Restoration:* Our experience with regional projects, such as the Loxahatchee River Restoration, C-111 watersheds FPLOS, Western Everglades Restoration Project,



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and the Corbett and Dinner Island WMAs ensure we have the technical depth to handle the 8,000-acre scope of the Charlotte Harbor Flatwoods.

- *Permitting & Compliance:* We are deeply knowledgeable of FDEP, FWC, SWFWMD, and SFWMD regulatory requirements, which is essential for the successful permitting of the proposed seepage barriers and flow-way enhancements.

To ensure a comprehensive approach, SFEC has assembled a specialized team of subconsultants to complement our capabilities:

- *UES Lehigh Acres* will lead the geotechnical field and laboratory testing, providing critical data for the design of the 4.5-mile groundwater seepage barrier and ditch blocks.
- *BDH Consulting Group* will provide the professional topographic surveying needed to augment existing data for accurate local-scale modeling.
- *Advanced Archaeology* will conduct the necessary archaeological investigations and shovel tests to meet Division of Historical Resources requirements.

SFEC's project management philosophy prioritizes close communication and the effective use of project management tools to keep complex, multi-disciplinary projects on schedule and within budget. We are excited about the opportunity to partner with Charlotte County and the Coastal & Heartland National Estuary Partnership (CHNEP) to restore this vital ecosystem.

We appreciate this opportunity to continue supporting the County's vision for a cleaner and resilient environment, and we are committed to delivering technically sound, community-informed solutions tailored to Charlotte County. We look forward to the opportunity to discuss our qualifications further and partner with you on this important project.

Sincerely,

Thomas V. Conboy, P.E.

SFEC President/Principal Engineer

tconboy@sfec.us



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I. Project Team



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I. TEAM PROPOSED FOR THIS PROJECT

South Florida Engineering and Consulting LLC (SFEC) has the capacity, staff, and systems in place to successfully carry out the scope of services described in the RFP. Our current workload is well-balanced, our key staff are available, and we are ready to “hit the ground running” and deliver throughout the duration of this important project.

Key project personnel have been identified for this project, including our Principal Engineer and technical leads, who will be available throughout the project period. No current project commitments will interfere with our ability to carry out the scope required of this RFP.

SFEC maintains a multidisciplinary team of 14 full-time and 10 part-time professionals, including civil and environmental engineers, hydrologists, environmental scientists, GIS specialists, and policy experts. We are structured to support complex, public sector including grant funded projects and have strong internal systems for task tracking, staff allocation, and document control.

If more capacity is required, SFEC can utilize our part-time professionals. As a small business, our inherent organizational structure and adaptability serve as a significant asset for the County, allowing us to manage unforeseen challenges by quickly leveraging our network of highly qualified part-time professionals and readily scaling up our full-time staff as project needs require. Our subconsultants supplement our in-house capacity and expertise as needed.

A. BACKGROUND OF THE PERSONNEL

The core of our proposal is the capability of our multidisciplinary team, a group specifically assembled to meet the varied and specialized demands of this restoration project. Our strength lies in our highly collaborative and *multidisciplinary team*, whose diverse expertise perfectly aligns with the goals outlined in this RFP.

Collectively, our key personnel possess *significant decades of experience* across all engineering and scientific categories, ensuring we bring not only technical competence but also seasoned judgment throughout every phase of this project.

1. Project Manager

Our team is led by **Andrew Gottlieb, Ph.D., PWS** as *Project Manager*, a nationally recognized professional scientist who has managed, designed, and implemented coastal and wetland habitat and water quality projects throughout Florida. Dr. Gottlieb was the project manager for SFEC’s C-38 habitat assessment project (for the SFWMD), the NRCS wetland determination project, and most recently for the Indrio Savannahs and Ancient Oaks hydrologic restoration and water quality improvement projects (for St. Lucie County). He also has wide ranging experience with agency technical coordination and state and federal permitting (ERP, 404, NEPA/Section 7). Dr. Gottlieb has published peer reviewed journal articles on topics that include the microbiology of the Everglades ecosystem and effects of hydroperiod and nutrients on



plant community structure and ecosystem function. His peer reviewed work has appeared in Aquatic Botany, Hydrobiologia, Ecological Indicators, and Environmental Monitoring and Assessment. He has developed quantitative tools used to evaluate and model hydrology, water quality and vegetation patterns for the CERP, as well as for a variety of other natural areas management/flood control projects (Corbett WMA, Dinner Island WMA, Loxahatchee River Watershed Restoration). Prior to joining SFEC, Dr. Gottlieb was a Lead Scientist for the SFWMD and consulted for the USACE Jacksonville Branch. He was the co-chair of the Interagency Restoration Coordination and Verification (RECOVER) Greater Everglades working group, as well as supported performance metric development for the Northern Estuaries sub-team.

Andrew Gottlieb, Ph.D., PWS will be this project's principal and project manager, he will remain so throughout the duration of the project and will not be substituted without the express permission of the County.

2. Other Key Personnel

Thomas Conboy, P.E. is our proposed *Principal Engineer and Lead Designer*. He is President of SFEC. As SFEC's principal, Mr. Conboy has been the Project Manager for multiple hydrologic restoration, resiliency, H&H modeling, and water quality projects (including the J.W. Corbett and Dinner Island WMA Hydrologic Assessments, C-111 and L31E Level of Service and storm surge modeling, and the Bonita Springs Denitrification Bioreactor



Andrew Gottlieb, Ph.D., PWS working in the field with Michael Adler, GTA, CERP in the background

project. He was also the Lead Designer for the Bonita Springs Bioreactor Project, Dinner Island Above Ground Impoundment restoration, Ancient Oaks STA, and Indrio Savannahs Wet Pond Projects. He is an internationally experienced Professional Engineer and Project Manager. He advised the Water Sanitation and Hygiene Program in Kenya; and led the initiative to develop a geospatial database. His accomplishments include sizing reservoir storage and optimizing operations for the C- 44, Ten Mile Creek and C23/24 Reservoirs/STA's for the Indian River Lagoon South component of Comprehensive Everglades Restoration Plan (CERP). Mr. Conboy served as Project Manager for the Loxahatchee River Preservation Initiative in Florida. He provided engineering support, performed hydrologic modeling, and



developed stage flow curves for the Restoration Plan for the Northwest Fork of the Loxahatchee River. He was also the Project Manager for the C-17 Basin Study.

Thomas V. Conboy, P.E. will be this project's lead designer, he will remain so throughout the duration of the project and will not be substituted without the express permission of the County.

Mahmoud Madkour, Ph.D., P.E. as our proposed *QA/QC Manager*, has extensive experience directing all aspects of Fixed Capital Outlay, Capital Improvement and Restoration Projects in the public sector from concept to project close-out as a Professional Engineer Administrator and Federal Aid Coordinator with the State of Florida, Florida Fish and Wildlife Conservation Commission. He has managed a variety of land management projects including hydrologic and habitat restoration, boating and fishing access, and invasive exotic vegetation control. Dr. Madkour holds a bachelor's degree in civil engineering, majoring in structural engineering, a master's degree majoring in hydrology and a Ph.D. majoring in water quality. Dr. Madkour is a licensed Professional Engineer (PE) by Florida Board of Professional Engineers, a Certified Building Contractor (CBC) by Florida Department of Business and Professional Regulation, a LEED® Accredited Professional (BD+C) by the U.S. Green Building Council, a Certified Construction Contracts Administrator (CCCA) by the Construction Specifications Institute and a Florida Certified Contract Manager (FCCM) by the Florida Dept. of Management Services.

While working for the FWC, Madkour managed both the J.W. Corbett and Dinner Island WMA Assessment projects conducted by SFEC staff.

Georgio Tachiev, Ph.D., P.E. as our proposed Principal Modeler, has 26 years of experience in Water Resources, Hydrology, Water Quality, Civil and Environmental Engineering. He has experience in the management of Civil and Environmental Engineering Projects, development of complex numerical models for analysis of remediation strategies, environmental and water resources management. Expertise in all phases of project management, technical reviews, quality control, and reporting. Expert level knowledge of state of the practice numerical software for water resources (MIKE SHE/11/21/FLOOD/ECOLAB, MODFLOW, SWMM, InfoWORKS), spatial analysis using GIS technologies, and statistical processing software (SAS, MATLAB), computer programming and scripting (FORTRAN, C, C++, MATLAB, SAS, PYTHON, UNIX SHELL, PERL, SQL) for automated processing, analysis and visualization of large hydrological and water quality datasets. Dr. Tachiev was the lead modeler for the C-111 LOS project, the Indrio Savannahs Wet Pond project and is currently supporting modeling for the Western Everglades Restoration Project (WERP) and the Loxahatchee River Restoration Project.

Tanzina Afrin, M.S. is a Senior Hydrologic Modeler. She has a Masters Degree in Water Science and Engineering with Specialization in Hydroinformatics from the IHE Delft



Institute in the Netherlands. As a member of our modeling team, she routinely works with Dr. Tachiev and our restoration and resiliency design teams. Ms. Afrin is an experienced Civil Engineer with experience in numerical modeling, river hydraulics, morphology, sediment transport, bridge hydraulics, etc. She has extensive experience working with processed based one- and two-dimensional hydro-morphological model, hydrological model, flood inundation model, urban storm water model, and wave modelling. Ms. Afrin has wide ranging experience in a variety of hydrologic, hydraulic, and GIS software (including the MIKE SHE/MIKE 11 suite).

Christopher McVoy, Ph.D. as our proposed *Lead Environmental/Soil Scientist*, has over 30 years of field, remote sensing, historical and modeling research experience specific to the ecosystems and hydrology of South Florida. He maintains an active geomorphology research program in the Everglades (WCA 3A). Dr. McVoy authored *Landscapes and Hydrology of the Predrainage Everglades*, the definitive characterization of the pre-drainage hydrology and ecology of the Everglades. For the East Lake Tohopekaliga Drawdown and Habitat Enhancement Environmental Impact Statement in Osceola County, Dr. McVoy developed the biological assessment for UFWS and provided environmental expertise in soils and ecology for the NEPA process and development of the EIS. Dr. McVoy also provides support for the Loxahatchee River Restoration Project ecological assessment and performance measure development tasks.



Christopher McVoy, Ph.D. working in the field

Reinaldo Diaz, J.D. as our proposed *Outreach and Policy Director*, is the founder of Lake Worth Waterkeeper, a nonprofit dedicated to the advocacy and education for the Lake Worth Lagoon and its watershed. Mr. Diaz is a longstanding director for the Everglades Coalition, a coalition of around 70 nonprofits dedicated to the advocacy of the Everglades. With a J.D. focused on land use and environmental law, and deep regional partnerships, Mr. Diaz offers specialized expertise in community and interagency engagement, resilience policy, coastal planning, and funding strategies. Mr. Diaz served as a Lake Worth Beach City Commissioner from 2022 to 2025. During his tenure, he participated in public engagement processes, CIP development, and intergovernmental collaboration. He



served on the Lake Worth Lagoon Initiative Steering Committee and the Palm Beach County Water Resources Task Force on behalf of the Palm Beach County League of Cities. He also served on the governing board of the Palm Beach Transportation Planning Agency, a Municipal Planning Organization (MPO).



Reinaldo Diaz, J.D. taking the day off to fish a sunset in SW Florida

3. Consultants

Adam Dornacker, P.E., as our proposed *Geotechnical Department Manager*, of UES' *Lehigh Acres office*, is a registered Professional Engineer with over 12 years of experience specializing in foundation design analysis, installation monitoring, and laboratory soil testing. Mr. Dornacker has direct local experience within the project region, having served as Project Manager for various Charlotte County infrastructure improvements, including fire stations and the Charlotte County Beach Recreation Center. His expertise in riverine and coastal crossing projects is demonstrated by his role as lead geotechnical engineer for the Caloosahatchee Connect reclaimed water transmission pipeline, where he coordinated barge-mounted drilling operations to depths

exceeding 120 feet below sea level. He also managed geotechnical operations for the Sanibel Island Causeway stormwater improvements and roadway widening projects on Marco Island. Mr. Dornacker's background in supervising drilling personnel and generating comprehensive foundation recommendations for US 41 corridor projects ensures precise data collection for the proposed seepage barrier and water control structures.

Ricardo C. Kiriakidis, Ph.D., P.E., as our proposed *Senior Geotechnical Engineer and Manager*, of UES' *Lehigh Acres office*, has 27 years of experience overseeing more than 400 design and 500 subsurface remediation projects across Florida. Dr. Kiriakidis specializes in complex soil investigations, interpreting SPT, CPT, and DCP data to provide engineering recommendations for foundations, retaining walls, and dewatering permits. His technical portfolio includes significant water resource infrastructure, such as the Voyager Avenue Bridge over the C-30 canal and the Lake Hamilton WWTF, where he managed groundwater mounding analysis and sinkhole risk mitigation. He is highly proficient in soil stabilization solutions, including compaction and chemical grouting, and has managed geotechnical exploration for major roadway programs like the I-4 Beyond the Ultimate. With a PhD in Civil Engineering and status as a Florida-licensed Professional Engineer and Neutral Evaluator, Dr. Kiriakidis provides seasoned judgment for complex subsurface challenges in sensitive environments.



Jeff D’Huyvetter, P.E., as our proposed *Senior Geotechnical Engineer*, of *UES’ Lehigh Acres office*, brings over 33 years of extensive experience in geotechnical evaluations, materials testing, and construction quality control across the southeastern United States. Mr. D’huyvetter offers specialized expertise in large-scale Everglades restoration projects, having served as the geotechnical engineer for the CEPP L-67A gated culvert construction and the Picayune Strand Restoration. His deep familiarity with hydrologic infrastructure includes oversight for the Indian River Lagoon C-23/C-24 STA and multiple pump station contracts for the Biscayne Bay Restoration program. A Florida-licensed Professional Engineer and Building Inspector, he is also an AWS Certified Welding Inspector and is certified by the US Army Corps of Engineers in Construction Quality Management for Contractors. Mr. D’huyvetter’s career-long focus on QA/QC for major public industrial projects ensures that the geotechnical components of the Yucca Pens restoration meet the highest technical and regulatory standards.

Joseph F. Mankowski, M.A., RPA, as our proposed *Archaeologist*, is the President and Founder of *Advanced Archaeology, Inc.* (AAI) with over 25 years of professional experience in cultural resource management. Mr. Mankowski is an SOI-qualified archaeologist and architectural historian who meets the U.S. Secretary of the Interior’s Standards and Guidelines for Archaeology and Historic Preservation. He holds a Master’s degree in Archaeology and Heritage and advanced certifications in Landscape Archaeology and the Planning

and Management of Large-Scale Archaeological Projects. His extensive field experience includes developing and implementing Phase I-III archaeological and historical assessments, mitigation bank studies, and monitoring assessments for major agencies including the Florida Division of Historical Resources (DHR), Florida Water Management Districts, and the U.S. Army Corps of Engineers. Notably, his project history includes critical monitoring and assessment work for water management infrastructure, such as the USACE C-111 Contract 8A and the Site 1 Impoundment. Mr. Mankowski will lead the archaeological investigation and desktop analysis required to meet DHR requirements for the Charlotte Harbor Flatwoods project.

Deris H. Bardales, P.E., PSM, as our proposed *Principal Surveyor*, is the founder of *BDH Consulting Group* and brings over 25 years of dual-licensed expertise in civil engineering and surveying throughout Florida. Mr. Bardales specializes in the integration of topographic, hydrographic, and specific-purpose surveying to support large-scale hydrologic restoration and infrastructure projects. His extensive portfolio includes critical survey support for the SFWMD C-23 Estuary Discharge Diversion and hydrologic restoration surveys for the Savannas Preserve State Park and Indrio Savannahs Preserve. He has direct experience providing topographic and mapping services for federally managed lands, including the Sandy Point and Cedar Keys National Wildlife Refuges. With a Bachelor of Science in Civil Engineering focused on environmental applications and a deep proficiency in multi-agency permitting



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coordination (including SFWMD, FDEP, and USACE), Mr. Bardales provides the precise geospatial data and technical

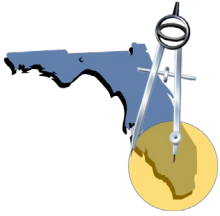
standards required to refine H&H models and ensure project biddability.



Pine flatwoods of Florida

PERSONNEL SCOPE CROSSWALK

Name	Firm	H&H Modeling	GIS	Geotechnical & Survey	Ecological Assessment	Shovel Ready Restoration Plans	Permitting	Project Management
Thomas V. Conboy, P.E.	SFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Andrew D. Gottlieb, Ph.D., PWS	SFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mahmoud Madkour, Ph.D., P.E.	SFEC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Georgio Tachiev, Ph.D., P.E.	SFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Zaki Moustafa, Ph.D.	SFEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tanzina Afrin, M.S.	SFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mariano Guardo, Ph.D., P.E.	SFEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Daljit Sandhu, Ph.D., E.I.	SFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Christopher W. McVoy, Ph.D.	SFEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Michael Adler, GTA, CERP	SFEC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ellen Ashford, PMP	SFEC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Reinaldo Diaz, J.D.	SFEC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Thomas Prevratil	SFEC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Jennifer Hesser	SFEC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Adam Dornacker, P.E.	UES	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ricardo C. Kiriakidis L., MS, PHD, P.E.	UES	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Jeff D’huyvetter	UES	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joseph Mankowski, M.A., RPA	AA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Deris H. Bardales, P.E., P.S.M.	BDH	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



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Andrew D. Gottlieb, Ph.D., PWS

Principal Scientist / Director of Ecological and Environmental Services



Dr. Gottlieb is a nationally-recognized professional scientist who has managed, designed and implemented coastal and wetland environmental assessment and water quality studies throughout Florida. His peer-reviewed work has appeared in *Aquatic Botany*, *Hydrobiologia*, *Ecological Indicators* & *Southeastern Naturalist*. Dr. Gottlieb also coauthored the book *Microbiology of the Everglades Ecosystem*. He has developed quantitative tools to evaluate and model hydrology, water quality and vegetation patterns for the Comprehensive Everglades Restoration Plan, among other natural area projects, as well as well as managed a variety of urban stormwater projects. [Relevant Experience: 25+ years]

Education

Ph.D.

Biology and Aquatic Ecology
Florida International University

Master of Science
Environmental Science and Agricultural Ecology
Washington State University
Pullman, Washington

Bachelor of Science
Biology and Environmental Studies
George Washington University

Certifications:

Professional Wetland Scientist
PD&E Certified
ESRI I & II
T&E Site Observation Training
Data Integrity
PADI Basic Diver

Principal Environmental Scientist / Biologist

South Florida Engineering and Consulting LLC

- **Water Quality Monitoring and Reporting Services.**
 - Water Quality Bureau Support for Restoration Projects Permit Reporting, 2023-2025 (C-111 SC, Lakeside Ranch & C-44 STA)
- **Ecology and Environmental Scientific and Technology Support Services.**
 - C-51 Canal Sediment Trap and Structure Flow Assessment
 - Biological / Ecological Assessments of the Lake Okeechobee Watershed Restoration Project C-38 ASR Clusters
 - In-Depth Data Analysis and Integration of C-43 Water Quality Treatment and Testing Project – Phase I Bioassays/ Mesocosms
 - Spatial Soil Sampling in the C-44 and Lakeside Ranch Phase II Stormwater Treatment Areas and the Ten Mile Creek Water Preserve Area (plant taxonomy, soil survey, and lab analysis)
- **Kraken Mitigation, West Palm Beach Project Manager/Principal Scientist**, Worked with FDEP to modify permit and UMAM regarding mitigation in the City's mitigation bank for FPL substation expansion. Modification improved the mitigation by removing impacts from logging equipment. Also developed a program for robust vegetation monitoring.
- **River Park Baffle Boxes Construction Management.** Project Manager/Principal Scientist, Site assessment and BMP compliance.
- **Indrio Savannahs Wet Pond Restoration.** Project Manager / Lead Environmental Scientist, Conducted ecological assessments including vegetation, habitat, and topographic mapping. Supported design of wetland and water quality treatment LID project elements. H&H model evaluation, environmental permitting and public meeting support.
- **Ancient Oaks Stormwater Treatment Area.** Project Manager/Lead Environmental Scientist, Evaluation and design of a stormwater treatment area for Ancient Oaks Preserve in support of the State of Florida water quality goals outlined in the St. Lucie River and Estuary

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BMAP. Project included environmental assessment, public meetings, alternative evaluation, feature design, water quality and H&H modeling, and Environmental Resource Permitting.

- **Loxahatchee River Watershed Restoration Project, Flow-Way 3.** Principal Environmental Scientist/Biologist – Conducted field survey and habitat assessments including vegetation and topographic mapping in support of project design, permitting and operations. Develop performance metrics/quantitative post processing tools to evaluate hydrologic model results.
- **East Lake Tohopekaliga Environmental Impact Statement.** Developed the Listed Species Biological Assessment for submission to USFWS. Conducted vegetation and soil environmental assessment. Provided expertise in water quality and ecology to refine project alternatives. Per NEPA requirements, conducted project alternative affects analysis for water quality, wetlands, and fish and wildlife. Provided scientific technical support for public / stakeholder meetings and interagency workshops.
- **Dinner Island Ranch WMA Hydrologic Assessment.** Analyzed the development of restoration strategies and management activities to reestablish sheet flow and rainfall driven hydroperiods to improve the function of terrestrial and aquatic habitats within the 34 square mile WMA. Developed performance measures for hammock and depressional wetland communities. Conducted field assessments including vegetation surveys. Conducted research - aimed at restoration of pasture to wet prairie habitat - comparing the effects of inundation duration on native and exotic seed germination rates.
- **J. W. Corbett WMA Hydrologic Assessment.** Conducted habitat assessment and evaluated restoration strategies for the 60,000-acre natural area. Developed scientific presentations for stakeholder meetings.

Senior Environmental Scientist (CECOS)

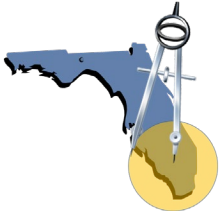
- **State Road 710 Environmental Assessment/Project Development and Environmental Study/Permitting.**
- **Wood Stork Roadside Habitat Utilization Study.**

Lead Environmental Scientist(SFWMD)

- **Comprehensive Everglades Restoration Plan Research.** Evaluate vegetation patterns, hydrology, and water quality concerns. Develop monitoring design for the Everglades Ridge and Slough landscape. Develop quantitative tools to post-process hydrologic model output to better predict ecological responses to restoration alternatives.
- **Benthic Habitat Surveys.** Caloosahatchee River Watershed and Estero.

Senior Scientist / Senior Project Manager(PBS&J)

- **SJRWMD, Wekiva Springs Watershed Hydrology and WQ Project.** Conduct scientific studies on algal community structure/function.
- **U.S. Army COE Evaluation of Everglades Restoration Projects.**



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Thomas V. Conboy, P.E.
President / Principal Engineer



Mr. Conboy is the President and Principal Engineer of South Florida Engineering and Consulting LLC. An internationally-experienced Professional Engineer and Project Manager, he advised the Water Sanitation and Hygiene Program in Kenya; and led the initiative to develop a geospatial database. His accomplishments include sizing reservoir storage and optimizing operations for the C-44, Ten Mile Creek and C23/24 Reservoirs/STA's for the IRL South component of CERP. Mr. Conboy served as Project Manager for the Loxahatchee River Preservation Initiative in Florida. He provided engineering support, performed hydrologic modeling, and developed stage-flow curves for the Restoration Plan for the Northwest Fork of the Loxahatchee River. [Relevant Experience: 30 years]

Education

**Bachelor of Science
Environmental Engineering
University of Florida**

Registration

Professional Engineer

Leadership

**NSPE Delegate Professional
Engineers in Construction
Executive Board**

Memberships

**Society of American
Military Engineers (SAME)**

Principal Engineer

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- **FPLOS (Flood Protection Level of Service) Assessment for Current and Future Conditions in C-111 Coastal, C-111 South, C-111 AG, Model Land, and L-31NS Watersheds, Miami-Dade County, Florida.** Project manager- Currently involved in the hydrological and hydraulic model development for the project area. The primary objectives are to develop and calibrate hydrologic and hydraulic models for the watersheds C111 South, C-111 Coastal, C-111 AG, Model-Land, and L-31NS, and to use those models in the evaluation of the FPLOS for existing and future conditions. Evaluations were assessed using six (6) performance metrics defined by the District. (\$596,270.91)
- **Loxahatchee River Watershed Restoration Project, Flow-Way 3, Martin County, Florida.** SFEC Project Manager - The hydraulic modeling tasks includes the development of seven different hydraulic models and analysis of the existing and proposed hydraulic structures to determine the channel hydraulics, flooding, and backwater effects in support of structure design. As a sub-consultant to WSP, SFEC is responsible for the development and analysis of seven detailed H&H models for the project areas included within the Flow Way 3 and used these models to evaluate extension and proposed conditions. The detailed hydraulic modeling effort focused on channel hydraulics, backwater effects and structure design. (\$721,158)
- **SFWMD Ecological, and Environmental Scientific and Technology Support Services** Program Manager for a work order-

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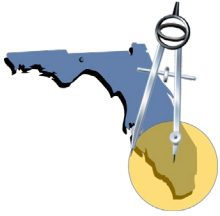


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based contract with SFWMD not to exceed \$15,500,000. This was a 5-year professional services contract in which SFEC has been reselected for up to 5 more years. SFEC has received 13 work orders and provided Ecological and Scientific Professional Service to SFWMD.

- **SFWMD 4600003017 WO No. 1 G-716 Divide Structure.** Review and edit Stormwater Treatment Area 1 East G-716 Divide Structure Design and Technical Specifications. Worked with Dr. Checks to resolve comments and issues. (\$549,827)
- **SFWMD 4600003017 WO No. 8 Future Rainfall Estimates.** Determination of future rainfall frequency estimates for planning flood protection projects. Reviewed rainfall frequency approaches in South Florida and made recommendations to SFWMD for their Level of Service modeling inputs. (\$24,966)
- **USACE FWC East Lake Tohopekaliga EIS.** Directed the NEPA process and development of the EIS. Provided project management and engineering support. (\$353,179)
- **FWC Corbett WMA Hydrologic Assessment.** Direct restoration and management strategies to reestablish sheet flow and rainfall-driven hydroperiods to improve terrestrial and aquatic habitat function of 94 square mile wildlife management area. (\$600,000)
- **Bonita Springs Woodchip Bio-Reactor Pilot Project.** Oversee chemical and biological summaries, and implement Everglades West Coast Basin Management Action Plan pilot project to improve Imperial River water quality. Project Budget: \$99,661
- **Palm Beach County C-51 Sediment Trap.** Provided direction and oversight to collect structure stage and canal to estimate sediment loading to estimate future LOS for flood protection. (\$76,814)
- **Dinner Island Ranch WMA Hydrologic Assessment.** Directing the development of restoration strategies and management activities that reestablish sheet flow and rainfall driven hydroperiods in order to improve the function of both terrestrial and aquatic habitats within the 34 square mile wildlife management area. Project Budget: \$334,000.



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Mahmoud Madkour, Ph.D., P.E., LEED® AP

Civil Engineer / Coastal Engineer / Fisheries Scientist / Project Management



Dr. Madkour's career spanned 25 years with the Florida Fish and Wildlife Conservation Commission. As a Professional Engineer Administrator, he was responsible state-wide for planning and implementing engineering designs and specifications for new or altered roads, trails, bridges, dams, office buildings, parks, water control structures, and other facilities. He prepared technical specifications and bid packages, and ensured that projects complied with purchasing, permitting and LEED standards. He inspected facilities and projects to ensure safety, efficiency and effectiveness. Dr. Madkour oversaw and reviewed habitat and environmental restoration plans/projects, hydrologic assessments, and other works developed by the FWC's Lake Restoration and Wildlife Management Areas staff, water managements districts, and other entities, for lakes, rivers, estuaries, shorelines management, sustainable funding mechanisms, feasibility and recommended improvements. [Relevant Experience: 25 years]

Education

BSCE Structural
Engineering
Ain Shams University
Cairo-Egypt.

MCE Hydrology
Auburn University,
Alabama

Ph.D. Fisheries-Water
Quality
Auburn University,
Alabama

Registration

Licensed Professional
Engineer.
Certified Building
Contractor.

Certification

LEED® AP (BD+C)
by the U.S. Green Building
Council.

Engineer/Project Manager

South Florida Engineering and Consulting

- **FDEP Jensen Beach Hydrologic Restoration Project.** The Jensen Beach Hydrologic Restoration Project was intended to restore sheet flow, hydroperiod, and wetland extent within the southern Savannas system, increase quality of wetland habitat, and reduce invasive exotic plant infestations in wetlands and adjacent uplands due to disturbance caused by altered hydrology. These goals are consistent with the Savannas Preserve State Park Acquisition and Restoration Council Approved Unit Management Plan, specifically within Natural Communities Management and Hydrological Management.
- **USFWS Sandy Point National Wildlife Refuge - St. Croix, U.S. Virgin Islands - Design of Parking Lot and Drainage Repair** Reconfigure & Rehabilitation of parking lot to accommodate a minimum of 20 vehicle parking spaces with new wheel stops. Design drainage structures to accommodate pedestrian crossing from parking lot to visitor center with sufficient capacity for stormwater conveyance, as determined by hydrologic assessment findings.

Engineer of Record (Sample Projects)

Florida Fish and Wildlife Conservation Commission

- **East Lake Tohopekaliga Drawdown and Habitat Enhancement Environmental Impact Statement** Developed a comprehensive Habitat Management Plan for East Lake Tohopekaliga (Osceola



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Certified Construction
Contracts Administrator
(CCCA)
by the Construction
Specifications Institute
(CSI).

Florida Certified Contract
Manager (FCCM) by the
Florida Dept. of
Management Services

County, Florida). Renovation would include dewatering of the lake (gravity and pump-down), removal of aquatic plant and sediment with heavy equipment, creation of in-lake disposal islands, installation of temporary dam material (e.g., sheet pile material) to isolate sections of the lake, management of aquatic plants using herbicide and prescribed fire, and planting of native vegetation.

- **West Bay Estuarine Habitat Restoration Phases I, II and III.** Designed, permitted, oversaw construction and managed the construction contracts for eighty (80) oyster reef units within West Bay, St. Andrew Bay, Panama City, a Class II Florida Waterbody. Each reef measured approximately 150-foot by 15-foot (2,250 square-foot of area each).
- **Don Pedro Island State Park Hydrologic Restoration.** Designed, permitted, oversaw construction and managed the construction contract for the removal and regrading approximately 2.79 acres of spoil material along the 994-foot canal bank of an artificial berm within Don Pedro Island State Park, Cape Haze, Charlotte County.
- **Fisheating Creek WMA – Cowbone Marsh Channel Restoration.** Designed and permitted the restoration of hydrologic connection important to wetland habitat areas in Cowbone Marsh within Fisheating Creek WMA, Glades County. The plans included the construction of 1.2 miles of temporary access road overlaid with composite interlocking mats. Utilize the temporary access road to transport approximately 24,000 CY of sand fill to be excavated and obtained from a nearby borrow pit to backfill about 10,000 feet of an existing channel.
- **Rotenberger WMA Drill Pad Road Removal.** Designed, permitted, oversaw construction and managed the construction contract for the removal of an approximately 3,200 CY of unimproved road (875 feet long, 1.51-acre area) that lead to an abandoned drill pad island within Rotenberger WMA, Palm Beach County.
- **Restoration of Historic Mosquito Lagoon Saltmarsh.** Designed and permitted restoration of a FWC property in New Smyrna Beach to historic saltmarsh. The project included construction of a shoreline stabilization demonstration area with associated educational signage to highlight various industry techniques. The total site footprint including slopes with stabilization features is ~5.2 acres. The saltmarsh supports ongoing environmental education and restoration programs in the region.
- **Expert Witness.** Provided expert testimony in hydrology, water resources, environmental restoration and boat ramps construction.



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Project Manager (Sample Projects)

Florida Fish and Wildlife Conservation Commission

- **East Lake Tohopekaliga Drawdown and Habitat Enhancement Environmental Impact Statement** Developed a comprehensive Habitat Management Plan for East Lake Tohopekaliga (Osceola County, Florida). Renovation would include dewatering of the lake (gravity and pump-down), removal of aquatic plant and sediment with heavy equipment, creation of in-lake disposal islands, installation of temporary dam material (e.g., sheet pile material) to isolate sections of the lake, management of aquatic plants using herbicide and prescribed fire, and planting of native vegetation.
- **Florida Bass Conservation Center.** Managed the Florida Bass Conservation Center project in Sumpter County from concept to construction. This state-of-the-art hatchery is capable of recycling 100% of its water use, and consists of 39,000 square feet under roof, a fish production facility, with offices, labs, conference room, exhibit area with 1,700-gallon aquaria, 63 ponds holding 48 acres of water and producing 1 million advanced fingerling bass, 1.5 million normal fingerling bass, 250,000 sub-adult channel catfish, 1 million striped and sunshine bass fingerlings and 3 million bluegill and/or red ear sunfish fingerlings.
- **Guana Dam Revetment Replacement.** Managed the design and construction of the replacement of Guana Dam Revetment at Ponte Vedra Beach, including dewatering, removal and disposal of an existing concrete mat and concrete rip-rap, installation of sheet piles, grading of earthen dam for new concrete revetment, construction of concrete revetment and pile cap, and erosion and sediment control measures.
- **Hickory Mound Impoundment Embankment Repair.** Managed the design and construction for repairing the embankment around Hickory Mound Impoundment and associated water control structures located in the Big Bend Preserve, which was damaged during hurricane.
- **Yellow Fever Creek Preserve Hydrologic Restoration.** Managed the construction for hydrologic restoration in Yellow Fever Creek Preserve in Lee County. Project involved re-contouring an existing 3-acre pond, removing a berm and filling a ditch (with berm material).
- **Hilochee WMA Hydrological Assessment.** Managed the professional services needed to develop and support restoration strategies and management activities that reestablish sheet flow and rainfall driven hydroperiods in order to improve the function of terrestrial and aquatic habitats within the 16,000-acre Hilochee Wildlife Management Area in Polk and Lake counties.



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Environmental Solutions through Science and Technology

Georgio Tachiev, Ph.D., P.E.
Principal Modeler



Georgio has 30 years of experience in Civil and Environmental Engineering, Water Resources, Hydrology, Water Quality, Stormwater management including: (i) Experience in development of complex numerical models for analysis of environmental and water resources management solutions, remediation strategies and risk management. (ii) Expert level knowledge of state of the practice numerical software for water resources for 1D, 2D and 3D models (MIKE SHE/11/21/FLOOD/ECOLAB, MODFLOW, XPSWWM, ICPR, CFD), (iii) Spatial analysis using GIS technologies, statistical processing software (SAS, MATLAB), computer programming and scripting (FORTRAN, C, C++, MATLAB, SAS, PYTHON, UNIX SHELL, PERL, SQL) for automated processing, analysis and visualization of large hydrological and water quality datasets. (iv) Expertise in all phases of project management, technical reviews, quality control, and reporting.
[Relevant Experience: 30+ years]

Education

PhD Environmental
Engineering and Water
Resources
Vanderbilt University

MSC Chemical
Engineering
Vanderbilt University

BS Civil Engineering,
VIAS Bulgaria

Licenses and Certifications

Professional Engineer
with the State of Florida

Project Management
Certification

Princeton Remediation
Course

Senior Hydrodynamic Modeler

South Florida Engineering and Consulting LLC (SFEC)

- **CERP WERP Crossings, Collier and Monroe Counties (Big Cypress National Preserve), Florida.** Principal Modeler. Responsible for site-specific H&H analysis for the culverts and basins along Loop Road, which shall be incorporated into the Design Report. Highway culvert capacity formulas will be used to evaluate the culverts along 11-Mile Road. A site-specific Computational Fluid Dynamics (CFD) H&H analysis will be performed for the crossings on US 41. A Bridge Hydraulics Report (short format) shall be prepared for submittal and approval by FDOT following the FDOT Bridge Hydraulics Handbook and FDOT Bridge Scour Manual.
- **Loxahatchee River Watershed Restoration Project (LRWRP) Flow-way 3.** Principal Modeler. Responsible for Quality Assurance of seven different 1D/2D coupled hydraulic models that are being developed with HECRAS software to fix structural design and to evaluate the flooding and backwater impact.
- **Indrio Savannahs Wet Pond Project, St. Lucie County.** Principal Modeler. Developed MIKE SHE / MIKE HYDRO integrated model for Taylor Flow Way. Model development included: initial processing, calibration, validation, uncertainty / sensitivity, alternative runs, WQ modeling and alternatives, alternative analysis and performance measures, model report.
- **S-71 Spillway Structure Replacement Preliminary Design Project.** Principal Modeler. Prepare the hydraulic design calculations and perform hydraulic 3D (computational Fluid Dynamic (CFD) modeling within the limits of the Project, including design of canals,



South Florida Engineering and Consulting LLC

Environmental Solutions through Science and Technology

pump station, boat lock, and water control structures. Perform a frequency analysis of hydrological and hydraulic data based on the historical discharge and water stage data of the S71 spillway to provide boundary conditions for the hydrostructure design and CFD model study. Utilize Ansys Fluent Flow or Flow Science Flow 3D software and 3D nonhydrostatic Reynolds-Averaged-Navier-Stokes (RANS) model with turbulence closure software.

- **Work Order No. 13: High Level Project Description and Cost Estimates of Recommended FPLOS Phase I Assessments for the C-111, C-111 South, C-111 Ag, Model Land and L-31ns Watersheds FPLOS Study.** Provided a high-level project description and cost estimates. The project recommendations will be incorporated into the SFWMD Sea Level Rise and Flood Resiliency Plan and may also be used as part of internal cost-benefit feasibility analysis being developed as part of grant applications to prioritize mitigation and adaptation alternatives for current and future conditions.

Principal

GIT Consulting, LLC

- **Flood Protection Level of Service of South Miami-Dade County, Florida** Lead Model Developer- The project developed a 550 square miles model, including reservoirs, and water supply wells, and 600 miles of canals of integrated surface and groundwater model to analyze the Flood Protection Level of Service of 4 watersheds of South Miami-Dade (C-1, C-100, C-102 and C-103). The project included development of calibration and validation models for two recent storms and design events which included 5-, 10-, 25- and 100-yr and Sea Level Rise alternatives based on 0, 1, 2 and 3 ft of SLR with storm surge at the coastal boundary. The model included the entire hydrologic cycle and took into consideration future land use changes, topography and infrastructure changes. The Flood Protection Level of Service was evaluated using a set of 6 performance metrics. Project also summarized flood Mitigation Strategies for future SLR and Storm Surge conditions.
- **Update of Stormwater Master Plans for Miami-Dade County** Principal Engineer for the Update of Miami Dade County's stormwater models of Basins C1, C2, C3, C4, C5 C6, C7, C8, C9, C103. QA/QC Reviewer for the update of basins C100, C102 and C111. The update included submittal of model C8 and C9 to the Federal Emergency Management Authority (FEMA). The project conducts hydrologic and hydraulic modeling for current and future conditions, develops pollutant load estimates, documents the models for each basin, and provide analysis of climate change conditions, including sea level rise for near and long term and provides model simulations reflecting changes in hydrology.



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Environmental Solutions through Science and Technology

M. Zaki Moustafa, Ph.D.
Principal Modeler / Scientist



Dr. Moustafa is an expert in hydrodynamic and water quality modeling, WQ sciences, data analysis/modeling, water resources engineering, environmental science, wetland ecology, and restoration modeling. He applied models (EFDC, ICM-CEQUAL, HSPF and BASINS) to a gamut of projects requiring EIS, EA and specialized experience (water quality, sediment transport, wetlands, Stormwater Treatment Areas (STAs), Florida & Biscayne bays). Dr. Moustafa spent the last 30 years working on STAs design/P optimization. Analyzed large STA WQ databases; provided the methodology to determine & evaluate phosphorus removal efficiencies in STAs; selected optimum locations for inflow to WACA2A & STA discharge outflow; reduce monitoring costs while achieving permit requirements; developed project technical reports; and all published journal articles focused on practical designed methods to optimize P retentions in Wetlands/STAs and developed the 1st Wetland Water Quality Model (Hydro & WQ).

Education

Ph.D. Oceanography,
Hydrodynamic &
Water Quality
Modeling

Virginia Institute of
Marine Science
(VIMS), School of
Marine Science,
College of William
& Mary

Developed large and small field scale research programs to determine vegetation resistance and internal hydraulics in large, constructed wetlands. The focus of this approach is to send pre-selected discharge waves with pre-selected frequencies and amplitudes through large STAs and small wetlands, monitor water pressure changes in the interior, and determine vegetation resistance as a function of water depth & slope and plant density; first of its kind. Results of this experiment were used to provide guidance on how to design & optimize P retention in STAs. He applied hydrodynamic and WQ models for mixing zone permits, TMDL and regulatory compliance evaluation. Permit Experience includes, NPDES, 404, TMDLs and PRI, Extensive contract & personnel management experience. [Relevant Experience: 35 years]
<https://www.researchgate.net/profile/Zaki-Moustafa-2>

Memberships

Society of American
Military Engineers
(SAME)

Advancing Earth and
Space Science

American Society of
Geophysical Union
(AGU)

Principal Modeler / Scientist

South Florida Engineering and Consulting LLC

- **Sustainable Landscape and Treatment in a Stormwater Treatment Area Study** The overarching goal of this project is to develop the relationships among “*human-controlled*” hydraulic parameters to optimize P uptake in existing STAs. P removal in STAs is accomplished via two processes: 1) biological /chemical processes that remove P from the flow path, which is not in “*human-control*,” and 2) physical processes of transport and mixing (diffusion & dispersion) that are in “*human-control*” & determines wetland’s area that can be used to improve P retention and sustain healthy vegetation community. This project intends to achieve sustainability of low P concentrations & healthy vegetation, while maintaining controllability of flow, water depth, and water slope in STAs.



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Youth Sports

22-years volunteer Soccer Coach with the American Youth Soccer Organization (AYSO) and seven years soccer coach for special needs Children (VIP) in West Palm Beach.

- **C-111 Level of Service Assessment for Current and Future Conditions West Palm Beach, Florida QA/QC Officer** - assisted SFWMD in conducting system-wide review of water management infrastructure to determine the flood protection level of service being provided by existing infrastructure under current and future conditions. Major work products from this study are additional model development and conceptualization; calibrated and validated hydrologic and hydraulic models; assessment of existing level of flood protection and of future sea level scenarios flood protection; and Storm Surge and Tidal Boundary Conditions under Current and Future Sea Level Conditions
- **C-51 Canal Support & Sediment Trap Assessment Study** Designed sediment & water quality monitoring plans and provided monitoring & modeling support. The objectives were to characterize soils for contaminants and analyze the efficiency of the sediment trap during current and future flow conditions. SFEC conducted stream gaging; collected necessary stage at the coastal structure; and collected water quality and sediment samples. Data collected were used to estimate current sediment trap efficiency and export of nutrients and sediment to the Lake Worth Lagoon.
- **C-43 Nitrogen Mesocosms Phase I Study** Provided in-Depth Data Analysis of C-43 Water Quality Treatment & Testing Project and integrated results of the mesocosm, bioassay, and denitrification studies into a comprehensive assessment of nitrogen dynamics within the different treatments; Assessed dissolved organic dynamics and potential for removal under different operational conditions (season, flow rate, etc.); Created a mass balance model of all available components to reflect the nitrogen cycle in the mesocosms; and Developed recommendations for additional questions to address in future studies.

South Florida Water Management District (SFWMD)

- **Hydrologic and Environmental Systems Modeling (HESM)** Developed large and small field scale research programs to determine vegetation resistance and internal hydraulics in large, constructed wetlands. The main focus of our approach is to send pre-selected discharge waves with pre-selected frequencies and amplitudes through large STAs and small (~two acres) wetlands, monitor pressure changes in the interior, to determine vegetation resistance as a function of water depth and plant density; the first of its kind, particularly for the large-scale STA.

South Florida Water Management District (SFWMD): Office of Modeling:

- **Florida Bay Freshwater Impact Analysis (EFDC Model)** The goal was to determine how freshwater inflow to Florida Bay (FB) impacts salinity & nutrients distributions and the impacts of freshwater contributors (Creeks, Slough, and Rainfall) on salinity.



South Florida Engineering and Consulting LLC

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Tanzina Afrin, M.S.
H & H Modeler / Water Resources Engineer



Ms. Afrin is an experienced Civil Engineer with experience in numerical modeling, river hydraulics, morphology, sediment transport, bridge hydraulics, etc. She has Solid experience on working with processed based one- and two-dimensional hydro- morphological model, hydrological model, flood inundation model, urban storm water model, wave model, etc. Extensive experience in a variety of hydrologic, hydraulic, and GIS software. Ms. Afrin's interests lead her to author Morphodynamic modeling of a small coastal river during an extreme flood event in 2016.

[Relevant Experience 15 years]

Education

MSc. Civil
Engineering Water Resources
Louisiana State
University

MSc. Water Science
and Engineering,
Specialization:
Hydroinformatics
IHE Delft,
The Netherlands

BSc in Civil
Engineering Military Institute
of Science and Technology,
Bangladesh

Memberships

American Geophysical Union
(AGU)
American Society of
Civil Engineers
(ASCE)

Water Resources Engineer

South Florida Engineering and Consulting LLC

- **FPLOS (Flood Protection Level of Service) Assessment for Current and Future Conditions in C-111 Coastal, C-111 South, C-111 AG, Model Land, and L-31NS Watersheds** Hydrological Modeler - review and evaluate the existing facilities to identify stormwater system components, which may underperform under the current LOS, and to develop sustainable stormwater management solutions considering both existing and future condition with SLR. The LOS analysis is based on results from numerical simulations of watershed hydrology using an integrated surface groundwater hydrologic model, developed with MIKE SHE- MIKE 1D modeling tool.
- **Ancient Oaks STA, St. Lucie County** Hydrologic Modeler-modeled, developed, and designed drainage options including water control structures (stormwater pond) as well as other improvements that benefit both water quality, natural storage, and drainage. Provided modeling reports describing expected nutrient removal, and hydrological function for incorporation into the County's BMAP.
- **AECOM Compass FEMA Erosion Modeling Support** Involved with Risk Mapping Program of the Federal Emergency Management Agency (FEMA) with AECOM/Compass to provide technical support in the Risk Mapping, Assessment, and Planning Program. Specific responsibility refers to expanding binary coastal erosion hazard information into a graduated hazard and damage information source capitalizing on existing FEMA methodologies, specifically, transect and SWEL compilation. Used the ArcGIS tool for this project.
- **STA-5/6 Connection to Lake Okeechobee – Phase 1** Hydraulic Modeler - worked with South Florida Water Management District



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(SFWMD) with main consultant CDM Smith. This is the subsequent study of a feasibility study of developing conceptual designs to move Lake Okeechobee water south for treatment within Stormwater Treatment Area (STA)-5/6 and eventual delivery to benefit the Everglades. Accomplished H&H modeling with HEC-RAS 1D for designing of the proposed project features of the interim and permanent pump stations, box culvert, bridge, STA-5/6 North Seepage Ditch and Outfall Ditch into the L-2/L-3 Canal.

- **Loxahatchee River Watershed Restoration Project (LRWRP)**

Flow-way 3 Hydraulic modeler with WSP USA, Inc. for SFWMD project to improve the quantity, quality, timing, and distribution of water flows to and within the Everglades system. LRWRP will improve water flows to the NW Fork of the Loxahatchee River and restore the connectivity of wetlands and watersheds that form the river headwaters to ensure the appropriate hydrological conditions to support healthy flood plain vegetation. Seven different 1D/2D coupled hydraulic models are being developed with HECRAS software to fix structural design and to evaluate the flooding and backwater impact.

- **SFWMD WO No. 15: Vertical Datum Upgrade**

Implementation in Operations and SCADA. South Florida.

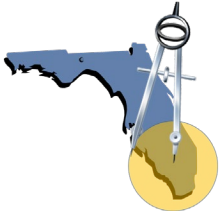
Established the offsets for South Florida Water Management District (SFWMD) sites, benchmarks, and structures. Performed error analysis of offsets by comparing surveyed offsets with generated offsets using the COPRSCON program. Created an inventory of each SFWMD site with corresponding SCADA offsets, documented Regulation Schedules for 17 large water basins, wrote reports and completed other tasks as required under the Professional Engineering Services Work Order Contract with SFEC. This project is needed for the National Spatial Reference System, as the National Geodetic Survey is replacing the North American Datum of 1983 (NAD 83) and the North American Vertical Datum of 1988 (NAVD 88) with a new geometric reference frame and geopotential datum.

Engineering Specialist / Intern

South Florida Water Management District

- **Implementation of the Tamiami Trail Flow Formula.**

Designed a program to predict weekly flow using all previous and current data for different variables. The program can be adjusted considering flow difference occurred in past weeks. In addition, performed percentile analysis for both rainfall and potential evapotranspiration to use in case of unavailability of data for any given week.



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Mariano Guardo, Ph.D., P.E., BC.WRE, M.ASCE
Lead Civil / Water Resources Engineer



Dr. Guardo is a civil/environmental engineer with experience in hydraulics and hydrology (H&H), water resources, earth dams and reservoirs design, wetland hydrology and restoration, environmental studies, water quality, soil mechanics, statistical analysis, modeling simulations (1-D steady flow, hydrologic, tide, seepage, 1-D and 2-D hydrodynamics, groundwater and regional), coastal engineering, project management, and teaching and training.

He retired in 2020 as the State Hydrographic Engineer for the Florida Department of Environmental Protection (DEP) where he was a lead advisor and reviewer of permits in the Environmental Resource Permitting (ERP) program. He conducts research on water quality, hydrodynamic modeling, and develops computer programs for DEP permit reviewers. He also represents DEP as an expert witness and develops and instructs courses on H&H and on steady-state flow, hydrodynamics, and water quality modeling simulations. [Relevant Experience: >30 years]

Education

Ph.D. Hydraulic Engineering.
Colorado State University

MSCE. Hydrology and Water
Resources. Colorado State
University

Diploma of Civil Engineer.
Catholic University, Caracas

Registration/Certification

Licensed Professional
Engineer
Qualified Stormwater
Inspector

Professional Affiliations

ASCE
Engineers Without Borders
American Water Resources
Assoc.

South Florida Engineering and Consulting LLC

- **AECOM Compass FEMA Coastal – Graduated Erosion Project.**
Lead Civil Engineer/Program manager, Provided technical support for FEMA's Risk Mapping, Assessment, and Planning Program. Involved Processing GIS data for computing erosion hazards.
- **AECOM Compass FEMA Wolf River Watershed QA/QC Project Shelby, Fayette, and Hardeman Counties, Tennessee**
Lead Civil Engineer/Program manager, providing QA/QC support for FEMA's Region IV, focusing on the hydrology and hydraulics of the Wolf River watershed using HEC-RAS to analyze the 10, 25, 50, 100, and 500-year storm events.

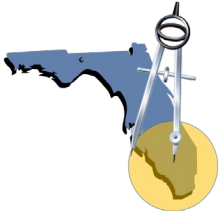
Florida Department of Environmental Protection (DEP)

- **State Hydrographic Engineer**, (2013-2020) ERP Program on hydrodynamics and water quality modeling, and H&H for state projects. Developed and taught courses and webinars on H&H and modeling. Researched and developed computer programs on water quality, steady-state tidal flows, and coastal hydrodynamics. Served as expert witness.

South Florida Water Management District

- **Everglades Regulation Dept.** (2008-2011) Lead Engineer, Worked on Non-ECP Basins phosphorus source control, C-139 Basin, Big Cypress Reservation, Pump calibrations, Agricultural AGIs, PC-17A Structure H&H Analysis, Flow verification for EAA farms, Irrigation

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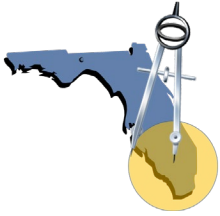
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Venezuelan Professional
Engineers Association
Venezuelan Committee on
Large Dams
Faculty Association of the
Catholic University
Venezuelan Society of
Hydraulic Engineering

- flows and schedules for Variances (Water Restrictions). Instructed courses on fluid mechanics and pump calibrations.
- **Water Supply Dept.** (2004-2007) Lead Civil Engineer, Worked on Regional Water Supply Plans, Project Manager for Broward County Projects (wetlands rehydration, hydraulic structures replacement, basin improvements). Hydraulic analysis for additional pumping from C-51 into E-1 Canal (Control No.2) of the Lake Worth Drainage District. Alternative Water Supply (AWS-06&07) Projects in Okeechobee, Broward, and Miami-Dade Counties. Hydraulic analysis and dredging for the C-18 E Canal upstream reach, multiple projects in the Indian Prairie Basin, Lake Istokpoga and Brighton Reservation, including the Southern Indian Prairie Operational Plan.
 - **Water Supply, Planning, Research, and Ecosystem Restoration Depts.** (1990-2004) Senior Civil Engineer, H&H modeling, hydraulic design, water resources analysis, STA Design Group; H&H modeling (with MBR/Cascade model); Dredge production analysis; Everglades Nutrient Removal (ENR) Project, involving hydrologic budget analysis, seepage modeling, hydrodynamic modeling, groundwater modeling, and vegetation roughness. Managed: cooperative project with USGS on 2-D hydrodynamic modeling and with Florida Atlantic University on seepage/groundwater modeling. Supervised experiments into seepage and dye studies to estimate flow velocities.

Other Relevant Technical Coursework and Training

2D Hydraulic Modeling with SMS and ADCIRC, AQUAVEO and Seahorse Coastal Consulting; Soil-Cement in Water Resources, Portland Cement Association, FDEP & ASDSO; Wastewater Treatment Processes and Operation, TREEO Center, University of Florida; Off-Stream Dam Failure Analysis Using FLDWAY/BREACH Models, FDEP & ASDSO; Seepage for Earth Dams, FDEP & ASDSO; IS 630 and IS 631, Emergency Management Institute, FEMA, SFWMD; Earth Dam Design and Performance Evaluation, BCI; FEMA Public Assistance, FEMA & FL DEM, SFWMD; Stormwater Management and Design, FES; HEC-RAS, SFWMD; Treatment Wetlands Short Course, CH2MHILL; Water Quality and Hydrodynamic Modeling with CE-OUAL-W2 Portland State University; Trigrud and 2-D Modeling with FESWMS, USGS; Arc-Info for Modelers, SFWMD; Hydrologic and Water Quality Modeling with SWMM-IV, University of Florida; Ecological Modeling, Ohio State University, SFWMD; SAS, SAS, SFWMD; C Language, SFWMD; Unsteady State Modeling using DWOPER, Arizona State University; 1-D Hydrodynamic Modeling with UNET, SFWMD; Advanced Fluid Mechanics, Colorado State University; Hydrology for Engineers, SVIH; Tower Intakes, Outlet Works and Diversion during Construction of Earth Dams, SVIH; Theory and Design of Water Supply Systems, CIV; Pipe Flow Design, SVIH; River Mechanics, National Hydraulics Laboratory and Colorado State University; Soil Mechanics and Design and Construction of Earth Dams, CIDIAT.



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Daljit Sandhu, E.I., Ph.D. **Water Resources Engineer**



Dr. Sandhu is a State of Florida Engineering Intern with experience in hydrology and hydraulics. He has research experience in studying the response of Everglades to changing climate and anthropogenic activities, and the effects of sinkhole events on contaminant transport in the Floridan aquifer. In addition, he studied the relationships between karst formations in Florida to hydrological processes by simulating karst evolution. A talented engineer and H&H modeler, his work experience entails supporting the SFWMD in replacing the vertical datum from NGVD29 to NAVD88. The purpose of this project was to convert all elevation data, regulation schedules, Operational Decision Support System (ODSS), and relevant structure documents to the new vertical datum. In addition, he has supported various drainage/dewatering projects and has experience with AutoCAD, GIS, and Python/MATLAB. [Relevant Experience: 9 years]

Education

Ph.D. Civil Engineering
University of Central
Florida

M.S. Civil Engineering
Water Resources
University of Central
Florida

B.S. Civil Engineering
University of Central
Florida

Memberships

American Geophysical
Union (AGU)

American Society of Civil
Engineers (ASCE)

Environmental Water
Resources Institute
(EWRI)

Water Resources Engineer

South Florida Engineering and Consulting LLC (SFEC)

- **St. Lucie County River Park Baffle Box (RPBB) Project.** Construction Engineering Inspection (CEI) – Provided inspection services for the construction of eight (8) baffle boxes along with other drainage structures by different construction firms in the River Park area of St. Lucie County.
- **Western Everglades Restoration Project (WERP) Crossings.** Project Manager – Currently overseeing SFEC’s role in the project. Attends weekly progress meetings, submits invoices, and provides GIS support for this project located along Tamiami Trail and Loop Road.
- **Dupuis Seepage Project.** Provided engineering and GIS support for the installation of monitoring wells to monitor and analyze water level stages and flow across SFWMD pumping operations.
- **Ancient Oaks Preserve Project.** Provided engineering and permitting support for the design of stormwater ponds and swales to improve stormwater management in St. Lucie County. Developed design plans to be submitted for an environmental resource permit (ERP) with SFWMD.
- **C-111 Level of Service Modeling Project.** Provided engineering support for the modeling of six (6) South Florida watersheds for evaluating flood protection level of service (FPLOS) in collaboration with the SFWMD. Assisted in

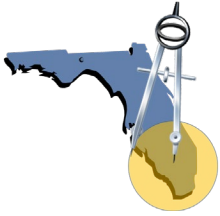


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Environmental Solutions through Science and Technology

Society of American
Military Engineers
(SAME)

- providing potential mitigation solutions based on modeling results. Documented meeting minutes at each meeting.
- **AECOM Compass FEMA Coastal – Graduated Erosion Project.** GIS Analyst – Provided technical support for FEMA’s Risk Mapping, Assessment, and Planning Program. Reviewed raw flood and erosion GIS shapefile data for Martin and Indian River counties. GIS data were corrected as required by AECOM prior to computing erosion hazards.
 - **Boynton Beach Lake Ida Water Quality Monitoring Project.** Water Resources Engineer – Provided rainfall analysis in support for the water quality monitoring analysis for Lake Ida in Boynton Beach. Rainfall statistics and frequency analysis are computed to explain ongoing water quality trends.
 - **Stormwater Inspection Services.** Assisted P.E. in inspecting various stormwater systems throughout Broward County in support of county requirements.
 - **USDA ARS Storage Tank Permit Project.** Inspected and developed storage tank plans in support of obtaining a Broward County permit for client TTI Environmental.
 - **L-31 East Storm Surge Modeling.** Collaborated with Arcadis for the L-31E Modeling project for the SFWMD. Collected daily peak stage data for tidal structures and analyzed stage-frequency relationships.
 - **Big Cypress Canal Dewatering Permitting Project.** Provided engineering and permitting support assistance for the dewatering analysis in support of the Cypress Canal Control Structure relocation project in the Big Cypress Basin by the SFWMD. Collaborated with Kiewit and the SFWMD to obtain a dewatering permit for this project.
 - **Indian Creek Village Dewatering Permitting Project.** Provided engineering and permitting support for the dewatering of Indian Creek Village for their stormwater drainage system upgrade project in Miami.
 - **Oasis Condominium Driveway Project.** Provided engineering support for improving the entrance and exit driveway design for the Oasis Condominium in Palm Beach as part of a greater renovation project. Designs received approval from the FDOT.
 - **Murphy Bridge Dewatering Permitting Project.** Provided engineering and permitting support for the dewatering of Murphy Bridge in Martin County in support of the Murphy Bridge replacement project conducted by Kiewit. Analyzed flow rates, and areas of influence to obtain a dewatering permit from the SFWMD.



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Christopher W. McVoy, Ph.D.

Lead Environmental Scientist / Hydrologist / Biologist



Dr. McVoy is a noted eco-hydrologist, Everglades expert, author, and empiricist trained in systems analysis and simulation modeling. He is experienced in remote sensing, historical and modeling research, and the ecosystems and hydrology of South Florida. Dr. McVoy authored *Landscapes and Hydrology of the Predrainage Everglades*, the definitive characterization of the pre-drainage hydrology and ecology of the Everglades. His work has been published in *Ecological Economics*, *Agriculture, Ecosystems and Environment*, and other peer-reviewed journals. He maintains a geomorphology program in Water Conservation Area 3-A. [Relevant Experience: 27 years]

Education

Post-Doctoral
Systems Ecology
Technical University of
Braunschweig, Germany

Ph.D.
Soil Physics
Cornell University, Ithaca,
New York

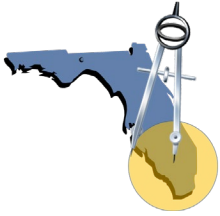
Master of Science
Soil Physics
University of Florida,
Gainesville, Florida

A.B.
Biology / Systems Ecology
Cornell University, Ithaca,
New York

Senior Hydrologist

South Florida Engineering and Consulting LLC

- **Ecology and Environmental Scientific and Technology Support Services.**
 - C-51 Canal Sediment Trap and Structure Flow Assessment Technical Support.
 - Biological / Ecological Evaluations of the Lake Okeechobee Watershed Restoration Project C-38 ASR Clusters.
 - In-Depth Data Analysis and Integration of C-43 Water Quality Treatment and Testing Project – Phase I Bioassays and Mesocosms.
 - Spatial Soil Sampling in the C-44 and Lakeside Ranch Phase II Stormwater Treatment Areas and the Ten Mile Creek Water Preserve Area.
- **East Lake Tohopekaliga Environmental Impact Statement.** Developed the Biological Assessment for USFWS and provided environmental expertise in water quality and ecology for the NEPA process and development of the EIS.
- **Bonita Springs Woodchip Bio-Reactor Pilot Project.** Analyzed peer-reviewed and gray literature on woodchip bio-reactors to evaluate feasibility and develop design of C-enriched, anaerobic reactors to remove nitrate-N from stormwater runoff for the Everglades West Coast Basin Management Action Plan.
- **Corbett WMA Hydrologic Assessment.** Analyzed the restoration and management strategies to reestablish sheetflow and rainfall-driven



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hydroperiods to improve terrestrial and aquatic habitat function of 94 square mile wildlife management area.

- **Dinner Island Ranch WMA Hydrologic Assessment.** Analyzed the development of restoration strategies and management activities that reestablished sheetflow and rainfall driven hydroperiods to improve the function of both terrestrial and aquatic habitats within the 34 square mile wildlife management area.

Senior Environmental Scientist

South Florida Water Management District

- **Book: Landscapes and Hydrology of the Predrainage Everglades (University Press of Florida, 2011).** Lead multi-year, interdisciplinary research effort characterizing the Everglades of the 1800s, prior to human constructed compartmentalization and drainage. Researched and wrote book on predevelopment ecohydrology. Performed field and remote sensing research of hydrology, geomorphology and landscape ecology. Synthesized historical observations with soil, water and vegetation data to develop a spatially explicit reconstruction of predevelopment conditions. The resultant book was published in 2011 by University Press of Florida and forms the basis for regional hydrologic models. Budget: \$110,000.
- **The Role of Flow in the Everglades Ridge and Slough Landscape, Science Coordinating Team Paper.** Co-authored a critical paper that shifted the focus of hydrologic restoration from water depths to the actual movement of water. Demonstrated the link between absence of flow and loss of characteristic Everglades vegetation and geomorphology.
- **Predrainage Hydrology of the St. Lucie Watershed, Estimated from Historical Sources.** Reconstructed the predevelopment hydrology of the wetland/upland mosaic originally present in the St. Lucie watershed to support regional modeling of surface and groundwater behavior and set minimum flows for the St. Lucie River and Estuary.
- **Monitoring Water Flow and Sediment in the Everglades.** Used robotics and specialized field instrumentation to identify causal relationships between: environmental drivers, including temperature, flow, wind, and rainfall; water transport of flocculent organic material; and preservation of characteristic Ridge and Slough landscape morphology. [See: www.ridgeandslough.org]



Michael Adler, GTA, CERP
Environmental Scientist / GIS



An accomplished ecologist, inventor, writer, and natural resources specialist, Mr. Adler has a thorough understanding of most of Florida’s natural communities, along with their management needs and common sources of degradation. He can identify them in the field as well as from aerial imagery. Mr. Adler is skilled in the identification of native and invasive plants. He is an accomplished field researcher and is familiar with control of nuisance and invasive plants. Mr. Adler participated in inventing a system for acoustic monitoring of bats [Patent No. 8379486]. His skills include ESRI GIS analysis and mapmaking. He has experience sampling water according to FDEP protocols, RTK surveying, and working with DC electricians. He has training in wildland fire management, wetland delineation, and gopher tortoise relocation. He is an Authorized Gopher Tortoise Agent and Certified Ecological Restoration Practitioner. [Relevant Experience: 17 years]

Education

M.S. Ecological Restoration,
Forest Resources and
Conservation, University of
Florida

B.S. Zoology
University of South Florida

Registration/Certs.

Authorized Gopher Tortoise
Agent GTA-21-00063

SER Certified Ecological
Restoration Practitioner

SFAEP Wetland Delineation

Professional Affiliations

Society for Ecological
Restoration (SER)

The Native Plant Society
(NPS)

Palm Beach County Rare Fruit
Council (RFC)

Society of American Military
Engineers (SAME)

Environmental Scientist

South Florida Engineering and Consulting LLC

- **Kraken Mitigation, West Palm Beach** Environmental Scientist – Worked with FDEP to allow modification of permit regarding mitigation in the City’s mitigation bank for FPL substation expansion. Modification improved the mitigation by removing impacts from heavy equipment to log out treated invasive trees by allowing them to decompose in place. Also began program for 10yr vegetation monitoring. Created GIS maps and was responsible for plant identification.
- **Indrio Savannahs Wet Pond Project, St. Lucie County** Environmental Scientist - Contributed to ecological field evaluation of site conditions, provided GIS support for study of site and planning, such as development of alternatives for restoration and hydrologic reconnection. Also provided GIS support for model development. Made maps for permit application. Wrote revegetation plan.
- **Ancient Oaks STA, St. Lucie County** Environmental Scientist - Contributed to ecological field evaluation of site conditions, provided GIS support for study of site and planning, such as development of alternatives for conceptual location and configuration of stormwater pond conveyances, and berms. Also provided GIS support for model development including study of existing permits and water flow analysis. Made maps for permit application.
- **Loxahatchee River Watershed Restoration Project, Flow-Way 3 Martin County, Florida** Environmental Scientist - part of team that accomplished field surveys examining vegetation, ecological conditions, and topography, to make recommendations for most beneficial citing of hydrologic conveyances for ecological benefit. Conducted GIS analyses and produced charts of transects.
- **AECOM Compass FEMA Erosion Modeling and Support** Worked as part of the SFEC GIS team under subcontract to AECOM, to refine and QA/QC geographic data to make data inputs suitable for use in the FEMA coastal erosion modeling tool. As part of this effort, developed a protocol for accomplishing one of the necessary edits to the data.
- **Ecology and Environmental Scientific and Technology Support Services** Biological / Ecological Evaluations of the Lake Okeechobee Watershed Restoration Project C-38 ASR Clusters. Evaluated biological conditions, assessed protected species, documented wetlands. Completed USACE Data Sheets for habitats within the area. Deliverables facilitated SFWMD efforts in State and Federal Permitting.
- **East Lake Tohopekaliga Environmental Impact Statement.** Developed the Biological Assessment for USFWS and provided environmental expertise in water quality and ecology for the NEPA process and development of the EIS.
- **Dinner Island Ranch WMA Hydrologic Assessment.** Data collection, data processing, charting, plant identification, plant community characterization,



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restoration planning, T&E Species surveying, GIS analysis of model data, map development and ERP Permitting.

- **Wetland Determinations for Natural Resources Conservation Service.** Field wetland determinations, forensic investigation into historic wetlands & possible wetland alteration/loss, and GIS mapping

Assistant Staff Ecologist

Pandion Systems, Inc.

- **Re-Bat System Development.**

Invent and deploy a system for acoustic monitoring of bats. Survey and relocate gopher tortoises. Complete GIS analyses and project maps. Organized 4,000 item literature library.

Employee

Kestrel Ecological services

- **Invasive plant control.** Worked as a member of a team and individually to skillfully and carefully treat invasive and problematic plants, while protecting special species, in forests, fields, wetlands, and restoration areas, in most weather conditions and Florida terrain types. Measured and mixed chemicals for these treatment efforts.

Adjunct Professor

Santa Fe State College

- **Teach “Energy and Ecology.”** Developed lectures, assignments, and assessments; and provided lectures, assistance, and grades to students. The course topics included the ecological impacts of civilization’s energy sources, basic ecology principles, and Florida ecosystems.

President

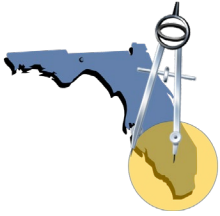
Edible Plant Project, Gainesville, Florida

- **Edible Plant Project.** Organizational leadership for a non-profit serving Gainesville and the surrounding areas. Propagated and distributed fruit trees, perennial vegetables and seeds of locally appropriate species that are not generally available from other sources. Lead the organization through successful expansion and relocation of facilities. Developed and prioritized activities necessary to propagate, distribute and maintain stock. Acquired and selected approximately 50 species for production and maintained stock of up to 3,000 potted plants.

Director

Tortoise garden restoration area, Gainesville, Florida. (2011-present)

- **The Tortoise Garden** is an experimental longleaf pine forest restoration project intended to improve understanding of restoration ecology processes and procedures as well as restoring diverse populations of appropriate rare species. Activities include acquiring local propagules (seeds, cuttings, rescue transplants), clearing undesirable vegetation to make room for restoration plantings, weed management, prescribed fires, recruiting and training volunteers, providing seeds and site-soil to a partner nursery and planting resulting container stock, conducting experiments. The area now hosts over 120 appropriate plant species, and a study (for publication) on seasonality of seed planting is underway.



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Ellen A. Ashford, PMP Project Manager / Biologist



Ms. Ashford is an effective communicator and as a Project Manager at South Florida Engineering and Consulting LLC she is detail oriented and exhibits a high degree of organization. She is also an enthusiastic educator, experienced in presenting engaging lessons, in person and virtually, to a diverse student body. She organized the Glades Central Green Team, becoming a Green School of Quality. She was awarded the Green Schools Recognition Program Rookie of the Year in recognition of her service in developing a school-wide culture to help children to develop environmental responsibility. As a Biologist, Ms. Ashford is trained in observing and identifying flora and fauna, collecting, and preserving field samples and maintaining records. [Relevant Experience: 12 years]

Education

Bachelor of Science
Biology
University of Florida
Gainesville, FL

Post-graduate coursework in
Curriculum and Instruction,
University of Montana
Missoula, MT
2008-2010

Professional Membership

Project Management
Institute 2020-current

The Wildlife Society
2020 - current

Florida Association of
Environmental
Professionals
2023 - current

Community

Green Schools Recognition
Program
Awarded Rookie of the
Year 2020

Project Manager / Biologist

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- **FDEP - Jensen Beach Hydrologic Restoration Project – Savannas Preserve State Park (B8DB70).** Managed project to develop a restoration plan for a network of historic ditches in the southernmost management units of the Savannas Preserve State Park (\$34,400.00)
- **SFWMD - Water Quality Sampling and Quality Assurance Support (4600004015-WO08R3 & 4600004767-WO4).** Managing two to three full-time staff to assist SFWMD staff with water quality sampling and quality assurance duties. (\$ 920,061.94 & 476,554.00)
- **SFWMD - Technical Support for Monitoring Biological and Hydrologic Responses in the Central Everglades Planning Project - South (CEPP-S) and Active Marsh Improvement (AMI) Projects.** (4600004949-WO03 & 4600004949-WO04). Managing two staff. Participated in identifying, collecting and processing ecological samples, conducted monitoring of associated biogeochemical and physical conditions, and associated lab and data management (\$412,921.76 combined)
- **Wetland Determinations for Natural Resources Conservation Service.** Follow USACE Protocols with NRCS modifications to determine wetland boundaries. Characterize hydrology, soils, and vegetation to determine if hydric conditions are present. Conduct work to help agricultural landowners comply with the Wetland Provisions of the Food Security Act of 1985, as amended.
- **Cities of Boynton Beach & Delray Beach - MS4 Lake Ida TMDL Report Sampling (PO# 211144, 220426, 220426co1, 230451)**
Conducted monthly water quality monitoring surface water grabs according to FDEP F.A.C. 62-160 (QA Rule) and FDEP's SOPs for



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Appointed Volunteer to
City of Lake Worth Beach
Educational Task Force –
North Grade K-8
representative
2023-2025

North Grade K-8 School
Advisory Council Member
2024/2025 School Year

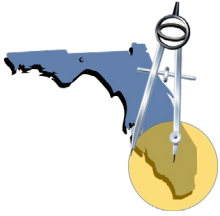
Audubon Jay Watch
Volunteer
2022- current

Explorer Post 57
Advising youth in
environmental club
2004-2008, 2018-2021

Board Member of Lake
Worth Waterkeeper
2024

Sample Collection Activities (DEP-QA-001/01) (FDEP SOPs) at each of the seven (7) sample stations. (62,811.50)

- **SFWMD - Spatial Soil Sampling in the C-44 and Lakeside Ranch Phase II Stormwater Treatment Areas and the Ten Mile Creek Water Preserve Area** (46000004015-WO10) Conducted a synoptic sediment sampling event in the C-44 STA, LRSTA and TMC WPA Polishing Cell. This involved collection, transportation, processing and submission of samples to the subcontracted laboratory for analysis. Followed F.A.C. 62-160 (QA Rule 4/2008) and FDEP's Standard Operating Procedures. (77,041.56)
- **Water Quality Bureau Support for FY2024 Restoration Projects Permit Reporting SFER Chapters and Water Quality Bureau Support for FY2025 Restoration Projects Permit Reporting** (4600004767-WO3 & 4600004767-WO5) In collaboration with SFWMD staff, work to prepare annual permit report for the project LRSTA to satisfy the reporting requirements for permits issued to SFWMD by FDEP; including data processing and analysis, statistics, spreadsheets, report preparation, technical review, quality assurance/quality control, graphics, email correspondence, and meeting participation. (\$93,755.00 & \$97,888.00)
- **City of West Palm Beach - Kraken Substation Site Assessment, UMAM Comparison Review, and Florida Department of Environmental Protection Permit Modification & Monitoring and reporting required for the FP&L Kraken Substation Mitigation Area** (27788.01 & 27788.02) Assisted with site visits to confirm baseline exotics mapping, evaluate plant community structure, evaluate the range of melaleuca density and size class, and characterize light penetration within the Melaleuca stands. Reviewed UMAM scores. Submitted permit modification. Assisted to establish the baseline condition and develop the baseline monitoring report using the stratified random sampling protocol, sampling stations were assessed to evaluate performance relative to stated success criteria and habitat enhancement goals for herbaceous and forested wetlands during both wet and dry seasons. (22,287.80 & 30,140.54)
- **SFWMD - Field Sampling and Laboratory Support for the Restoration Strategies Science Plan Studies** (4600004015-WO07R2). Assisted to calibrate and conduct monthly maintenance of remote sensing equipment including EXO Multiparameter Sondes, Onset Hobo light sensors, and Onset Level Loggers located used in various STAs. Surface Water Quality, Soil and Floc sampling and lab support for several Restoration Strategies Science Plan studies conducted by the Water Quality Treatment Technologies team. (388,320.00)
- **Construction Engineering Inspection (CEI) Services River Park Baffle Boxes** (C24-09-1026 & C24-12-1039). Assisted to complete daily inspections of construction sites, correspondence with County PM, weekly written reports. (\$181,101.00 & \$102,112.50)



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Reinaldo Diaz, J.D.

Interagency Coordinator and Strategic Engagement Lead



As a native Floridian and avid outdoorsman, I was raised with an admiration for its lifestyle and natural resources, and that came with a great desire to protect the unique community that I call home. This has inspired me toward a variety of pursuits that collaborate toward our environment's success. Much of my experience is in organization structure and development for both government and non-government organizations, especially regarding funding management and sustainability. My education and experience are broad, but have allowed me to develop a profound understanding of effective communication skills across various media with a deep understanding of Florida's environment and its development, all to better facilitate meaningful dialogue.

[Relevant Experience: 13 Years]

Education

Juris Doctor, Land Use and Environmental Law, Nova Southeastern University

Bachelor of Arts, Communication, Minor in Anthropology, Florida Atlantic University

Ethnography Field School, Centro de Investigaciones Salango, Ecuador

Registration/Certification

PADI Divemaster

Professional Affiliations

Florida Association of Environmental Professionals (FAEP)

Awards

FAEP Environmentalist of the Year

Interagency Coordinator and Strategic Engagement Lead

South Florida Engineering and Consulting LLC

▪ **Procurement Lead**

Lead proposal development and submission in response to numerous solicitations from various types of clients, from local municipalities to major Federal agencies.

▪ **Business Development Director**

Develop company strategies for strategic business improvement. Improving company efficiency with scheduling, organization strategy, and communication. Identify company opportunities for engaging the community as a recognized HUBZone small business enterprise.

▪ **Dispersed Waters**

Project Manager. Manage the operation and maintenance of water sampling field crew and equipment for the South Florida Water Management District's Dispersed Waters Project, a public/private partnership with landowners throughout Central Florida.

City Commissioner

City of Lake Worth Beach

▪ **City of Lake Worth Beach Commission**

City Commissioner. Collaborated with fellow commissioners, the mayor, and staff to implement and manage the city's annual budget. Secured different funding sources for various city projects. Provided legislative and policy oversight to guide the city's growth, infrastructure, and public services. Collaborated with fellow commissioners, the mayor, staff, and community members and stakeholders to develop and implement policies addressing public safety and economic development.

▪ **Palm Beach Transportation Planning Agency**

30 South M Street, Lake Worth, Florida 33460

561-412-6997 • www.sfec.us



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Governing Board Member. Member who represents the City of Lake Worth Beach. Collaborated with fellow local elected officials and agency staff on the implementation and management of countywide transportation infrastructure funding initiatives.

- **Palm Beach County Water Resources Task Force**

Board Member. Member representing the Palm Beach County League of Cities, where I collaborated with fellow elected officials, providing input and sharing information regarding various scientific research and water management efforts throughout the county.

- **Lake Worth Lagoon Initiative Governing Board**

Board Member. Member representing the Palm Beach County League of Cities, where I collaborated with fellow elected and agency officials, providing input and sharing information regarding various scientific research, water management, legislative funding, and community outreach effort for the Lake Worth Lagoon.

President

Lake Worth Waterkeeper

- **Lake Worth Waterkeeper, Waterkeeper Alliance**

Waterkeeper/President. Founded a local nonprofit and member of Waterkeeper Alliance dedicated to the protection and restoration of the Lake Worth Lagoon and its watershed. Built and started a water quality laboratory and implemented a first-of-its-kind substantial monitoring program throughout the Lake Worth Lagoon and its watershed. Monitoring includes enterococcus and E. coli bacteria, cyanobacteria, and red tide throughout the watershed, starting in Lake Okeechobee, to our beaches. Other work includes extensive education programs for students of all ages and legal advocacy and policymaking.

- **LaGoonies Outdoor Experiential Educational Program**

Manager. Responsible for curriculum development and management of 3 teachers and facilitators who carried out a weekly after-school education program for elementary and middle school-aged students. The program focused on the intersection of people, infrastructure, and natural habitats. Also provided curriculum to local schools through district professional development days.

- **FWC Horseshoe Crab Watch Monitoring**

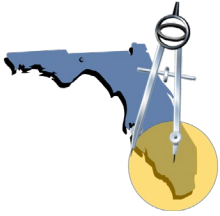
Palm Beach County Coordinator. Coordinate citizen science volunteers to collect data and tag wild horseshoe crabs in the Lake Worth Lagoon to contribute to a statewide scientific research effort. Achievements: first ever to tag horseshoe crabs in the county.

Director

Everglades Coalition

- **Board of Directors**

Board Member/Team Liason. Organize member meetings and retreats.



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Sue Byrd Technical Editor



Ms. Byrd has over two decades of experience serving as Lead Technical Editor on water resource, habitat restoration and utilities projects. She was the Lead Technical Editor for the East Lake Tohopekaliga Impact Statement and Biological Assessment, Sumter National Forest Stream Restoration Environmental Impact Statement, and Environmental Impact Statement and many Comprehensive Everglades Restoration Projects. She is skilled at maintaining a consistent flow of documents by multiple authors, editing, formatting, developing document templates, and coordinating changes and input from authors and reviewers.

[Relevant Experience: 25 years]

Computer Skills

Word
PowerPoint
Publisher
Excel
SharePoint

Awards

Member of U.S. Army Corps
of Engineers 2009 C-111
Spreader Canal Project
Delivery Team of the Year

Lead Technical Editor

South Florida Engineering and Consulting LLC

- **Central Florida Water Initiative Regional Water Supply Plan** Lead Technical Editor for this project that involved three water management districts regarding future planning for water use. Provided editing, formatting, document compilation and configuration management for this final and draft document. And, formatted the document to meet ADA standards.
- **East Lake Tohopekaliga Environmental Impact Statement and Biological Assessment** Lead Technical Editor for the project that involved a temporary deviation in the regulation schedule for East Lake Tohopekaliga, an approximately 12,000-acre lake located in Osceola County, Florida. Maintained Administrative Record.

Lead Technical Editor

- **Sumter National Forest Stream Restoration for U.S. Forest Service** Lead Technical Editor for the project that involved approximately 100,000 linear feet of stream restoration activities in five watersheds with a one-year start-to-finish National Environmental Policy Act process.
- **Final and Draft Broward County Water Preserve Area Project Implementation Report and EIS** This USACE Project addressed loss of ecosystem function within the Everglades due to damaging discharges of runoff from developed areas in western Broward County excessive nutrient loading, and excessive water seepage into developed areas. Provided editing, formatting, document compilation and configuration management for this final and draft, five-volume PIR and EIS document.



EDUCATION

BS, Civil Engineering, Florida Gulf Coast University

YEARS OF EXPERIENCE

12

LICENSES

- Professional Engineer - FL #85319

CERTIFICATIONS

- OSHA 10-Hour

ADAM DORNACKER, PE

GEOTECHNICAL DEPARTMENT MANAGER/PROFESSIONAL ENGINEER

Mr. Dornacker is a registered Professional Engineer with over twelve years of experience. His expertise includes foundation design analysis and recommendations, foundation installation monitoring, and field and laboratory testing of soil and concrete. He is responsible for managing and coordinating all work performed by UES' Fort Myers Geotechnical Department. He prepares and reviews geotechnical and materials engineering inspection reports, coordinates and supervises engineering staff and drilling personnel. He also conducts foundation observations and foundation design reviews, geotechnical instrumentation monitoring, and reviews and signs materials testing reports.

PROJECT EXPERIENCE**CHARLOTTE COUNTY FIRE STATIONS #3, #6 & #17**

PUNTA GORDA AND PORT CHARLOTTE, FL
UES was contracted by Schenkel-Shultz to perform geotechnical services (including a geotechnical evaluation) for construction of three fire stations within the county. Mr. Dornacker served as Project Manager.

CHARLOTTE COUNTY BEACH RECREATION CENTER

PORT CHARLOTTE, FL
UES provided concrete/grout/mortar testing for the construction of a 20,751-square-foot recreation center with meeting and event space, a full catering kitchen, staff offices and a waterfront deck with a drop-off area. Mr. Dornacker served as Project Manager.

DESOTO COUNTY WASTEWATER TREATMENT PLANT

DESOTO COUNTY, FL
Contracted by Kimley-Horn, UES conducted a geotechnical evaluation for construction at a county wastewater treatment plant. Mr. Dornacker served as Project Manager.

GOLDEN GATE PARKWAY BRIDGE OVER SANTA BARBARA CANAL

NAPLES, FL
This project involved phased demolition of the existing bridge along Golden Gate Parkway and the new construction of a four-lane, two-way bridge over the Santa Barbara Canal. The proposed bridge includes two lanes of travel in each direction over a three-span bridge with boarding pedestrian sidewalks. Mr. Dornacker coordinated completion of geotechnical borings to depths of 100 feet below ground surface, as well as the GPR survey and MOT operations. He also reviewed geotechnical findings and generated report recommendations (with foundation piling recommendations per FDOT standards).

MULTIPLE FIRE STATION/ TRAINING FACILITIES

- COLLIER COUNTY, FL
- Fire Station #32 Ave Maria
 - Immokalee Fire Station #30

NAPLES COMMUNITY HOSPITAL

NAPLES, FL

The project, which includes a new 189,000 SF, five-story heart center, is part of a \$295 million investment in advanced cardiovascular and stroke care for the Southwest Florida community. UES provided geotechnical foundation engineering studies.

WALKER'S CAY - NEW HOTEL

MARCO ISLAND, FL

UES provided geotechnical foundation engineering study for the construction of Walker's Cay on Marco Island. This project is a significant project that includes a luxury hotel/condominium, marina, and various amenities.

SANIBEL ISLAND CAUSEWAY

SANIBEL, FL

This project consisted of stormwater facility improvements along the Sanibel Island Causeway in Sanibel, Florida. UES performed a Geotechnical Exploration consisting of nine standard penetration test borings to depths of 30-feet below grade, five double ring infiltrometer tests, and four permeability tests on samples collected during field operations. Mr. Dornacker was the project manager for the geotechnical operations.

US 41 UTILITY REPLACEMENT PROJECT

FORT MYERS, FL

The intent of this project was to relocate City of Fort Myers utilities along US 41 between Winkler Avenue and Victoria Avenue in association with FDOT's roadway improvement project for the US 41 corridor. UES performed a Geotechnical Exploration consisting of soil survey borings along US 41 for the proposed jack and bore locations and along the proposed directional drill areas, and 25 cores of the existing asphalt for each of the outside lanes of US 41 where the proposed replacement utilities are located. Mr. Dornacker was the project manager for the geotechnical operations and is also the geotechnical engineer of record for the foundation recommendations.

YELLOWBIRD STREET ROADWAY WIDENING

MARCO ISLAND, FL

This project involved roadway improvements to widen Yellowbird Street (approximately 3,800 feet) from Bald Eagle Drive to N. Collier Boulevard. The improvements are to widen the pavement to 11-foot travel lanes and add a new four-foot wide paved shoulder along both sides of roadway. Mr. Dornacker performed hand auger soil borings and soil classifications, and coordinated the completion of the geotechnical report.

CALOOSAHATCHEE CONNECT

FORT MYERS TO CAPE CORAL, FL

This project will serve to connect a reclaimed water transmission pipeline from the City of Fort Myers to the City of Cape Coral just South of the Midpoint Bridge. The transmission pipeline will be installed underneath the Caloosahatchee River using large-scale directional drilling operations, Mr. Dornacker was the lead Geotechnical engineer for the project and was responsible for the coordination of drilling operations, review of soil samples, review of laboratory testing (including direct shear and consolidation testing), and generation of geotechnical report and recommendations. Geotechnical borings were completed in the Caloosahatchee River using a truck-mounted drilling rig atop a push barge with specially designed platforms, borings were performed to depths exceeding 120 feet below sea level.

CITY OF FORT MYERS RWTM**PHASE 5: A, B, C, D, S****PHASE 6: A, B, C, SGRW**

FORT MYERS, FL

The project encompassed the installation of over 40,000 linear feet of new raw water transmission lines, linking the Southern Wellfield within the City. The transmission main was installed using a combination of open-cut and directional drilling methods. UES conducted geotechnical explorations along the entire project corridor, with boring depths ranging from 10 to 50 feet, and provided comprehensive foundation and installation recommendations. Mr. Dornacker served as the lead geotechnical engineer, overseeing all aspects of the geotechnical scope including drilling operations, soil classification, laboratory testing, and the preparation of the final geotechnical report.

EDUCATION

MSCE, Civil Engineering,
Georgia Institute of
Technology

BSCET, Civil Engineering,
Southern College of
Technology

YEARS OF EXPERIENCE

33

LICENSES

- Professional Engineer -
FL #59716
- Building Inspector -
FL #BN3667

CERTIFICATIONS

- Certified Welding Inspector
- ICC Structural Masonry
Inspector
- ACI Concrete Special
Inspector
- ACI Construction
Transportation Inspector
- PTI Level 1 Inspector
- AWS Certified Welding
Inspector (#10010131)
- US Army Corps of
Engineering – Construction
Quality Management for
Contractors
- ICC Structural Masonry
Inspector
- ICC Structural Steel & Bolting
- OSHA 10-Hour

JEFF D'HUYVETTER

SENIOR PROJECT ENGINEER

Mr. D'huyvetter has over 33 years of experience in the engineering industry. He also assists with the oversight and engineering for airport and USACE projects throughout south Florida. Operations include geotechnical evaluations, construction materials testing, structural design, building inspection, threshold inspection, forensic and plan review services for residential, commercial, public, and industrial projects. He has worked on a variety of projects throughout the southeastern United States encompassing both design and construction. He has a wide range of experience in geotechnical, materials testing and engineering, and inspection services. Mr. D'huyvetter has focused on quality assurance and quality control for construction of major projects.

PROJECT EXPERIENCE

CEPP L-67A

This project consists of the construction of three new gated culverts in the levee adjacent to the existing L-67A canal. In addition to the new structures, removal of spoils piles along the L-67A canal and backfilling of an agricultural ditch are included within the scope. This project is part of the overall Everglades restoration program. Acted as the contractor's geotechnical engineer as well as providing Concrete Construction Special Inspections (CCSI) for onsite cast in place concrete construction. Work was performed in 2021 as part of the Kiewit contract. The contract was cancelled and rebid. Work resumed under Herve Cody Construction in 2023 and is ongoing.

INDIAN RIVER LAGOON C-23/C-24 STA

This project consists of the construction of a Stormwater Treatment Area (STA) in association with the proposed North and South Reservoirs for the overall Indian River Lagoon Restoration. The project consists of five cells with a total of 2850 acres. There are a

total of 16 water control structures to move water between the various cells and across two roadways. Mr. D'huyvetter acts as the contractor's geotechnical engineer and provides Concrete Construction Special Inspection (CCSI) and Certified Welding Inspector (CWI) services. Work was started in 2022 and is ongoing.

INDIAN RIVER LAGOON C-23/C-24, NORTH RESERVOIR, PUMP STATION S-426

This project consists of the pump station adjacent to the C-24 canal to the North Reservoir for the overall Indian River Lagoon Restoration. In addition to the pump station, the contract involved the construction of an access road from SR-70 to the North Reservoir. A portion of the final levee and seepage canal are being constructed between the pump station and the access at SR-70. Mr. D'huyvetter acts as the contractor's geotechnical engineer and provides Concrete Construction Special Inspection (CCSI) and Certified Welding Inspector (CWI) services. Work was started in 2024 and is ongoing.

BISCAYNE BAY RESTORATION

This project involved multiple contracts for pump stations as part of the Biscayne Bay Restoration program. Work for pump stations S-703, S-705, S-709, S-710 and S-711. In addition, the S-710 & S-711 contract included a precast spreader canal. Work was performed under four contracts for two different general contractors (Kiewit and Harry Pepper). Acted as the contractor's geotechnical engineer as well as providing Concrete Construction Special Inspections (CCSI) for offsite precast as well as onsite cast in place concrete constructions. In addition, provided welding inspections for onsite welding for the S-710 and S-711 pump stations. Work was performed between 2021 and 2024.

HERBERT HOOVER DIKE RESTORATION PROGRAM – CULVERT REPLACEMENTS

Quality control and inspection for multiple contracts as part of the overall Herbert Hoover Dike Restoration Project. Contracts were for C-6, KI-1 and KI-2 culverts on the Kissimmee River; IP-2 and IP-3 culverts on the Indian Prairie Canal and HP-1, HP-5 and HP-6 on the Harney Pond Canal. Work was performed under eight contracts for three different general contractors (Kiewit, Harry Pepper and Thalle Construction). Mr. D'huyvetter acted as the contractor's geotechnical engineer for all eight contracts as well as providing Concrete Construction Special Inspection (CCSI) and Certified Welding Inspector (CWI) services. Work was performed between 2004 and 2022.

C43 RESERVOIR CONTRACT 3

Contract 3 consisted of the construction of a 1,500 cfs pump station to fill the reservoir. Acted as the contractor's geotechnical engineer as well as performed concrete, masonry and welding inspections during construction. Work was performed between 2019 and 2022.

PICAYUNE STRAND RESTORATION

SOUTHWEST FLORIDA

Quality Control and Inspection for multiple contracts (SFWMD) as part of the overall Picayune Strand Restoration. Contracts included QC Testing for the construction access off of Alligator Alley, QC Testing and Structural Steel Inspections for Merritt Pump Station, QC Testing for Merritt Pump Station spreader berm, QC Testing for Merritt Canal Plugs (2 contracts),

QC Testing and Structural Steel Inspections for Faka Union Pump Station and Spreader Berm, QC Testing for Miller Pump Station and geotechnical drilling and sampling for Miller Pump Station (for construction QC). Work performed between 2009 and 2019.

C43 RESERVOIR CONTRACT 2

Contract 2 consisted of the construction of a 195 cfs pump station to provide irrigation water supply to the south of the proposed reservoir. Acted as the contractor's geotechnical engineer and performed specialty concrete testing and welding inspections for this project. Work was performed between 2016 and 2019.

C43 RESERVOIR CONTRACT 1

This project consisted of the installation of surcharge mounds at the proposed structures. As part of this contract, piezometers were installed to various depths below the surcharge mounds. Oversaw the drilling services associated with these installations. Work was performed in 2015 and 2016.

MODIFICATION TO SR 90 (US41)

MIAMI/DADE COUNTY, FL

Quality Control and inspection oversight under Kiewit Infrastructure South Co. on the Tamiami Trail project in Miami, Florida. Project consisted of the construction of a one-mile, low profile bridge and the rehabilitation and/or reconstruction of nine miles of roadway as part of the Comprehensive Everglades Restoration Program (CERP). Work was performed between 2010 and 2013.

US ARMY CORPS SITE 1 IMPOUNDMENT

PALM BEACH COUNTY, FL

The project consists of levee construction for purpose of water impoundment and retention. The Phase I contract consists of the rehabilitation of +/- 15,000 LF of existing levee on the north and west side of the proposed impoundment area. The rehabilitation consists of new spillway construction, regarding the exterior side of the levee and construction of an armoring system composed of ACBM block, soils cement and drainage mats on the interior side of the levee. Services consist of QC and Materials Testing services. Work was performed under two contracts and completed in 2016.



RICARDO C. KIRIAKIDIS L., MS, PHD, PE

GEOTECHNICAL DEPARTMENT MANAGER/SENIOR GEOTECHNICAL ENGINEER

Ricardo has 27 years of geotechnical engineering experience, overseeing more than 400 design projects, 2,500 forensic exploration projects, and 500 subsurface remediation projects across Florida. He specializes in soil investigations, including boring selection, soil classification, and interpreting SPT, CPT, DCP, and hand-auger data. Ricardo has managed geotechnical design for residential, commercial, and institutional developments, providing engineering recommendations for pavements, stormwater management, foundations, retaining walls, and dewatering permits. His recent work includes forensic geotechnical analysis of subsidence damage and soil stabilization solutions such as compaction grouting, chemical grouting, helical piles, micropiles, and flowable fill.

EDUCATION

PHD, Civil Engineering, West Virginia University

MS, Civil Engineering, West Virginia University

BS, Civil Engineering, West Virginia University

YEARS OF EXPERIENCE

27

LICENSES

- Professional Engineer, FL #70602
- State of Florida Neutral Evaluator

PROJECT EXPERIENCE

STOF LAKELAND TRUST INFRASTRUCTURE-PH 4

LAKELAND, POLK COUNTY, FL

This project involved the geotechnical exploration and providing design recommendations for the Lakeland Estates residential development Phase Four (4) of the community includes the design of the infrastructure, construction of the infrastructure and home construction.

VOYAGER AVENUE BRIDGE, SUNBRIDGE NORTHEAST DISTRICT ("NED")

OSCEOLA COUNTY, FLORIDA

This project consisted of the Voyager Way bridge over the C-30 canal designed to be a Florida I-beam Bridge (FIB) with a span of about 114 feet with two travel lanes, shoulders, and a bike trail (total of approximately 48 feet in width) with an end bent on each side of the canal. UES was retained to explore the general subsurface conditions at the site (accomplished by utilizing our in-house drilling equipment and team) and to provide geotechnical engineering recommendations for the bridge and MSE wall foundations

and related construction issues. Challenges associated with this project included directional drilling for utility installations below the canal and the adverse effects of construction vibrations on the nearby residential neighborhood. As the engineer/manager, Dr. Kiriakidis provided oversight and quality review of all work products, scheduling, and budgeting.

I-4 BTU SEGMENTS A & B

CENTRAL FLORIDA, FL

I-4 Beyond the Ultimate (BtU) comprises six design segments and several interim projects all with the goal of rebuilding and improving 40 miles of Interstate 4 (I-4). I-4 Beyond the Ultimate is an extension of the I-4 Ultimate project that continues the reconstruction of I-4 20 miles to the east and 20 miles to the west. This project covers segments 1A, 1B and 2. UES's scope of services includes preparing and providing geotechnical exploration, design, and the plans and specifications.

TURNPIKE (SR91) / NOLTE ROAD INTERCHANGE IMPROVEMENTS DESIGN-BUILD

OSCEOLA COUNTY, FL

The project involves the widening and reconstruction of the mainline, increasing capacity from four to eight lanes, with striping initially set for a four-lane facility to accommodate future growth. A key feature of the project is the extension of Nolte Road from Old Canoe Creek Road, which will include a Diverging Diamond Interchange (DDI) with ramps to facilitate all movements to and from SR 91. The project also replaces two existing SR 91 bridges over the St. Cloud Canal and constructs two new overpass bridges along Nolte Road over SR 91, enhancing connectivity in the area. UES's scope of services includes preparing and providing geotechnical exploration, design, and the plans and specifications.

TURNPIKE WIDENING SR-50 MINNEOLA INTERCHANGE

LAKE/ORANGE COUNTY, FL

Florida's Turnpike Enterprise, part of the Florida Department of Transportation (FDOT), to widen Florida's Turnpike Mainline/SR 91 from O'Brien Road (Milepost 285.8) to the US 27 North interchange (Milepost 289.3) from a four-lane divided expressway to an eight-lane divided expressway. This project will provide additional capacity to meet future traffic demand in 2045, improve emergency evacuation times, and improve safety within the corridor. The design and construction will provide eight (8), 12-foot travel lanes (four in each direction) with 12-foot shoulders and a 26-foot median with a barrier wall. UES's scope of services includes preparing and providing geotechnical exploration, design, and the plans and specifications.

HORIZON WEST ROADWAY IMPROVEMENTS

SEMINOLE COUNTY, FL

Numerous projects for Horizon West improvements under this program includes street lighting, sidewalks, and roadway safety improvements. UES's scope of services includes preparing and providing geotechnical exploration, design, and the plans and specifications.

DR. PHILLIPS PACKING DISTRICT REDEVELOPMENT

ORLANDO, FL

Mr. Kiriakidis was responsible for planning the original scope with other members of the design team. He also performed final review of the work and design. UES completed the geotechnical exploration for this redevelopment project involving a four-story multi-family residential building with a pre-cast concrete parking garage within the northern portion of the property (roughly 3.7 acres). Additional items included two retail/commercial spaces along with the associated paved parking areas and underground stormwater systems.

TAVARES PUBLIC WORKS COMPOUND

TAVARES, FLORIDA

UES provided geotechnical services for the Tavares Public Works Compound, conducting subsurface investigations to assess soil conditions and foundation suitability. Our team performed soil borings, laboratory testing, and geotechnical analysis to support the structural design and site development. The findings helped ensure a stable foundation and informed construction decisions for the facility's long-term performance.

TAVARES LIBRARY PROPERTY

TAVARES, FLORIDA

UES provided geotechnical subsurface investigation services for the Tavares Library project. Our team conducted a comprehensive evaluation of the site's subsurface conditions to support the design and construction of the new facility. The investigation included soil borings, laboratory testing, and geotechnical analysis to determine the bearing capacity, soil classifications, and potential settlement concerns.

UES' expertise ensured that the foundation recommendations aligned with site conditions, mitigating risks associated with unsuitable soils and providing critical data for structural design. Our team's commitment to quality and efficiency contributed to the successful planning and development of the Tavares Library, supporting the community with a safe and stable facility for future generations.

GEOTECHNICAL EXPLORATION FOR PROPOSED STORM WATER MANAGEMENT AREAS, LEGACY PARK PHASE III

SEMINOLE COUNTY, FL

Mr. Kiriakidis was the Project Engineer responsible for completing a limited geotechnical exploration for the proposed storm water management areas at the Legacy Phase III development located at 2000 Seminola Boulevard in Casselberry, Seminole County, Florida. He reviewed the subsurface conditions found in the soil borings performed at the pond areas. He also provided geotechnical engineering recommendations for groundwater considerations, retention pond design parameters, suitability of site soils for re-use as fill material, drawdown analysis, and site preparation for pond areas.

LAKE HAMILTON WWTF PHASE I

POLK COUNTY, FLORIDA

The proposed project involved the construction of a Wastewater Treatment Facility (WWTF) for the Town of Lake Hamilton in Polk County, Florida. The proposed facility included two RIBs and a new wastewater treatment plant. UES was retained to explore the general subsurface conditions at the site (SPT soil borings were performed with a UES-owned ATV-mounted drilling rig) to provide geotechnical exploration with groundwater conditions and mounding analysis. Challenges associated with this project included an area of concern within the vicinity of the site: an off-site depression that required additional analysis. As the engineer/manager, Dr. Kiriakidis provided oversight and quality review of all work products, scheduling, and budgeting.

DAVENPORT WWTF PHASE 2 EXPANSION

POLK COUNTY, FLORIDA

This project involved expanding the Davenport Wastewater Treatment Facility (WWTF) in Polk County, Florida. The proposed expansion of the site, which had two existing effluent percolation ponds, included the construction of a third pond. UES was retained to perform a geotechnical exploration within the new pond footprint and to provide a groundwater mounding analysis of the proposed RIB system. SPT soil borings were performed in-house with a UES-owned ATV-mounted drilling rig. Challenges associated with this project included an evaluation of the impact of the proposed RIBs on the nearby properties. As the

engineer/manager, Dr. Kiriakidis provided oversight and quality review of all work products, scheduling, and budgeting.

PROPOSED X-ORLANDO DOWNTOWN, PHASE 1

Orlando, Orange County, FL

Mr. Kiriakidis was responsible for supervising the work performed and provided final review of the work product prior to submittal for this geotechnical exploration project. The Phase 1 portion of the development included the development of a new 20-story residential tower including a six-story retail/parking garage podium with stormwater collected on-site within an existing underground exfiltration system.

LAKE HAMILTON WWTF STRUCTURES, WATER TANK ROAD

POLK COUNTY, FLORIDA

The proposed project involved the construction of a new Wastewater Treatment Facility (WWTF) for the Town of Lake Hamilton in Polk County, Florida. The site plan indicated a 200,000 gpd influent storage tank, associated generator pads, chlorine contact basins, pump stations, office buildings, and a 20-foot wide stabilized unpaved drive to be constructed around the facility's perimeter.

In addition, two RIBs were proposed, each approximately 1.6 acres in plan dimension. UES was retained to explore and evaluate the general subsurface conditions at the site with particular attention to potential problems that could impact the proposed development, to provide soil and groundwater conditions at the boring locations, and to provide geotechnical engineering recommendations for foundation design, storage tank design, unpaved driveway sections, and subgrade preparation. The SPT soil borings were performed in-house with a UES-owned ATV-mounted drilling rig. As the engineer/manager, Dr. Kiriakidis provided oversight and quality review of all work products, scheduling, and budgeting.

GEOTECHNICAL EXPLORATION AND SINKHOLE EVALUATION, PLANTATION WATER TREATMENT PLANTS

CITY OF LEESBURG, LAKE COUNTY, FL

Mr. Kiriakidis completed a geotechnical exploration for sinkhole evaluation of a proposed tank location at the southern portion of an existing Water Treatment Plant located on Plantation View Drive. The project

involved a small depression, approximately 12 feet in diameter, that was noted in the ditch area located about 30 feet to the south of the proposed 39-foot diameter above-ground storage water tank. Due to concerns arising from the surface-developed depression, a geotechnical exploration was requested to evaluate the potential for sinkhole development within the proposed storage tank footprint. Mr. Kiriakidis was responsible for the exploration of the deep geologic formation with regard to sinkhole activity. He interpreted and reviewed the subsurface conditions with respect to sinkhole activity and the development of the ground surface depression located south of the site and provided preliminary recommendations for sinkhole risk mitigation.

SUBSURFACE EXPLORATION AND RECOMMENDATIONS FOR RETENTION POND DESIGN FOR SOCIAL SECURITY ADMINISTRATION BUILDING

ORLANDO, FL

As the Project Engineer, Mr. Kiriakidis' main responsibilities were to select boring locations, select samples for laboratory testing, analyze the soils present, select suitable foundation sizes and estimated settlement, and to provide recommendations for retention pond design.

RACETRAC GAS STATIONS/CONVENIENCE STORES

CENTRAL FLORIDA

Mr. Kiriakidis was responsible for selecting the location of SPT soil borings, hand-auger, and on occasions, DRI and electric resistivity test locations, as well as providing geotechnical recommendation to over 10 RaceTrac gas stations/convenience stores throughout Central Florida. Every RaceTrac project included selecting building, pavement, canopies, underground tanks, and stormwater pond borings.

PUBLIX SUPERMARKETS

CENTRAL FLORIDA

Mr. Kiriakidis was responsible for designing the geotechnical investigation and providing geotechnical design recommendations for several Publix Supermarket locations throughout Central Florida. His responsibilities included selecting the location of numerous soil borings to explore the proposed building footprint, pavement areas, loading docks,

and stormwater ponds. He also provided geotechnical recommendations for ground water conditions.

PROVIDENCE SUBDIVISION

ORLANDO, FL

As part of the design team for this residential development project, Mr. Kiriakidis selected the location of more than 300 soil borings including building, pavement, and stormwater pond borings. Upon completion of the field work and classification of the soil samples, he provided geotechnical design recommendations for seasonal high /low groundwater levels, pavement design, cut and fill, and compaction recommendations to be used in the final design by MSCW. He also obtained all required dewatering permits. involved a small depression, approximately 12 feet in diameter, that was noted in the ditch area located about 30 feet to the south of the proposed 39-foot diameter above-ground storage water tank. Due to concerns arising from the surface-developed depression, a geotechnical exploration was requested to evaluate the potential for sinkhole development within the proposed storage tank footprint. Mr. Kiriakidis was responsible for the exploration of the deep geologic formation with regard to sinkhole activity. He interpreted and reviewed the subsurface conditions with respect to sinkhole activity and the development of the ground surface depression located south of the site and provided preliminary recommendations for sinkhole risk mitigation.

DERIS H. BARDALES, PE, PSM
PROFESSIONAL ENGINEER AND SURVEYOR & MAPPER
P: (561) 452-2348 | E: deris@bdhcg.com

BACKGROUND/RESPONSIBILITIES

Florida-licensed Professional Engineer and Professional Surveyor and Mapper with leadership experience delivering civil engineering and surveying services for municipal and private sector infrastructure, site development, and waterfront projects throughout South Florida. Founded BDH Consulting Group, LLC in 2012, providing continuing, as-needed services that integrate civil engineering, surveying and mapping, hydrographic and coastal surveying, and land planning to support design development, permitting, and construction-phase delivery.

CORE CIVIL ENGINEERING EXPERTISE

- Municipal stormwater and surface water management systems, drainage analysis, and design
- Water distribution and wastewater collection systems, including lift stations and force mains
- Site civil design for residential and commercial development (grading, paving, drainage, utilities, parking, site lighting)
- Permitting support (local, county, state, USACE and federal coordination) and agency comment responses
- Construction-phase services including construction management support, construction observations, and closeout documentation
- Surveying and mapping in support of civil design, permitting, and construction (boundary, topographic, hydrographic, utility)

LICENSURE

- Professional Engineer (Florida), Registration No. 64661 (2006)
- Professional Surveyor and Mapper (Florida), Registration No. LS 6778 (2010)

EDUCATION

Florida International University, Miami, Florida
Bachelor of Science in Civil Engineering (Environmental Engineering emphasis), 1998

PROFESSIONAL EXPERIENCE

BDH Consulting Group – Engineering, Surveying & Planning, Boynton Beach, Florida
Engineering/Surveying/Planning Associate, 2018 – Present

Phoenix Residential Subdivision, Glades County, Florida (2025–Ongoing)

- Principal Engineer, Surveyor, and Planner for an approximately 19.3-acre single-family

subdivision along U.S. Highway 27 in Moore Haven.

- Site development services from ALTA survey through planning, design, and multi-agency permitting.
- Engineering design for paving, grading, drainage, potable water, wastewater, and off-site turn-lane improvements.
- Permitting coordination with Glades County, FDOT, FDEP, and SFWMD; coordination with transportation, geotechnical, environmental, and landscape subconsultants.

SFWMD Pump Stations S2 & S4 Concrete Refurbishment and Coatings – Construction Management Services, Palm Beach County (2025–Ongoing)

- Construction Management Services under Taylor Engineering for SFWMD Work Order No. 4600005086-WO5.
- On-site oversight of concrete repairs, expansion joint replacement, surface preparation, and protective coatings at Pump Stations S2 and S4.
- Daily coordination with SFWMD staff and contractor oversight; documentation, submittal review, and schedule and progress tracking.

Cliff Berry, Inc. - Continuing Professional Services (2017 - Ongoing)

- Principal Engineer and Surveyor providing engineering and surveying and mapping support for regulatory affairs and special projects.
- Services include engineering and permitting support for operation and maintenance improvements and facility-related projects statewide.
- Prepared Spill Prevention Control and Countermeasure (SPCC) plans and supported contingency planning and emergency response documentation.

Boynton Beach Office Condominium, Palm Beach County, Florida (2023–Ongoing).

- Principal Engineer and Planner responsible for site plan preparation and approvals.
- Design for paving, drainage, water, sewer, and NPDES, stormwater, site lighting and components.
- Support during construction including observations, bidding assistance, construction stakeout, as-built surveying, and final certification.

SURVEYING AND MAPPING IN SUPPORT OF CIVIL ENGINEERING

IRL South C-23 Estuary Discharge Diversion Project – Specific Purpose Survey, Martin County (2025)

- Surveying and Mapping services for SFWMD (Work Order No. 4600004910-WO7) for a multi-mile Specific Purpose Survey along the C-23 Canal corridor.
- Performed record research and survey control review; established GPS ground control targets tied to SFWMD/NGS monuments.
- Coordinated LiDAR and imagery requirements and produced deliverables including a 1-foot DEM, point cloud files, ortho-imagery, and CAD-based survey deliverables meeting SFWMD technical standards.

Palm Beach County Water Utilities - Wellfield Improvements Phase 1 (WUD Project No. 19-022) (2023)

- Principal Surveyor providing construction surveying support across 14 wellfield sites in Palm Beach County.
- Services included verification of horizontal and vertical control, rough and final construction stakeout, and construction as-built surveying.

West Palm Beach CRA – 610–620 Douglas Avenue Historic Restoration (2025–Ongoing) —

- Providing Boundary and Topographic Survey services, including preparation of six sketch and legal descriptions to subdivide the property for restoration. Responsibilities include field and office surveying to establish new corners, coordinating with the client on subdivision requirements, and preparing additional legal descriptions for common areas or easements as needed. Ongoing work includes project coordination, permitting support, responding to review comments, and updating survey documents to meet City of West Palm Beach standards, supporting accurate parcel definition for redevelopment.

Sandy Point National Wildlife Refuge, St. Croix, U.S. Virgin Islands (2024)

- Principal Surveyor providing specific purpose topographic surveying and mapping services to support parking lot and drainage repair design at a federally managed wildlife refuge
- Performed horizontal and vertical data collection to document existing site conditions for use in stormwater management and infrastructure repair planning.
- Prepared CADD-based topographic survey drawings and delivered an ASCII file of survey points; services limited to surveying and mapping and excluded boundary surveying and engineering design.

C-7 Canal Bridge Low Chord Survey, Miami-Dade County, Florida (2023)

- Topographic survey to locate low chord elevations for 26 bridges.
- Surveying performed in accordance with Chapter 5J-17, Florida Administrative Code and Section 472.027, Florida Statutes.

Ancient Oaks Preserve Hydrologic Restoration Project (2022)

- Conducted a topographic survey to determine low chord elevations for 26 bridges in Miami-Dade County, Florida.
- Completed a hydrographic survey of an adjacent canal to support project hydrologic restoration evaluations.
- Performed work in accordance with the minimum technical standards in Chapter 5J-17, Florida Administrative Code, and Section 472.027, Florida Statutes.

Savannas Preserve State Park Hydrologic Restoration Survey, Jensen Beach, Florida (2022)

- Topographic and hydrographic survey support for restoration design, including transects of existing drainage ditches and key hydrologic features.
- Surveying performed in accordance with Chapter 5J-17, Florida Administrative Code and Section 472.027, Florida Statutes.

Indrio Savannahs Preserve, St. Lucie County, Florida (2022)

- Principal Surveyor collecting topographic and hydrographic field data to support hydrologic restoration design of historic ditches, wetlands, and lakes.
- Data supported identification of features disrupting hydrologic function and development of proposed restoration alterations.

Seahorse Key Dock Replacement, Cedar Keys National Wildlife Refuge, Florida (2021)

- Principal Surveyor providing upland, dock structural, and hydrographic surveying services in support of dock replacement at a federally managed wildlife refuge within the Cedar Keys National Wildlife Refuge.
- Performed detailed upland and dock structural surveys documenting existing wooden decking, piles, ramps, pavilion structure, bulkhead elements, and adjacent shoreline features to capture existing physical conditions.
- Conducted hydrographic surveying within Suwannee Sound (Gulf of Mexico), including water depth measurements and submerged feature mapping around the dock and floating dock areas, referenced to NAVD 88 vertical datum.
- Established and verified horizontal and vertical control tied to published benchmarks, with elevations and features shown relative to recorded tidal and low-water conditions noted on the plans.
- Prepared planimetric and topographic survey deliverables illustrating dock geometry, pile locations, structural elements, shoreline conditions, and hydrographic soundings for use in permitting and dock replacement planning.
- Survey data supported federal coordination and replacement planning efforts; services were limited to surveying and mapping and excluded engineering design and structural analysis.

West Palm Beach CRA - 610-620 Douglas Avenue Historic Restoration (2025 - Ongoing)

- Boundary and topographic surveying services including preparation of multiple sketch and legal descriptions to subdivide property for restoration.
- Coordination with client and support for permitting and review comment responses to meet City of West Palm Beach requirements.

Joseph F. Mankowski, M.A., RPA

Advanced Archaeology, Inc.
1126 S. Federal Hwy. #263
Ft. Lauderdale, FL 33316
Phone: 954-270-6624
E-mail: contact@advancedarchaeology.com

Education:

University of Leicester. England, United Kingdom.
M.A. Degree in Archaeology and Heritage
July 2006

Florida Atlantic University. Boca Raton, Florida.
B.A. Degree in Anthropology
August 2002

Employment History:

August 2006	President
to Present	Advanced Archaeology, Inc.

Professional Experience:

Mr. Mankowski is the President and Founder of Advanced Archaeology, Inc. (AAI), who has over 25 years of professional archaeological experience in all aspects of cultural resource management, and is a SOI-qualified archaeologist and architectural historian that meets the *U.S. Secretary of the Interior's (SOI) Standards and Guidelines for Archaeology and Historic Preservation*. Presently, Mr. Mankowski is a Ph.D. candidate at the University of Leicester's School of Archaeology and History, where he holds an M.A. degree in Archaeology and Heritage. As part of his graduate degree program, he also holds certifications in Landscape Archaeology, Archaeology of Standing Structures, Planning and Management of Large-Scale Archaeological Projects, and Preservation of Archaeological Sites.

Mr. Mankowski is a trained Architectural Historian, who has extensive experience in research and report writing in the subject of architectural history, restoration, and preservation for numerous historic structures found in both the United States of America and England, in part as result of his graduate degree program, which included coursework in American Architectural History that resulted in the historic architectural assessment of the Baez House, located in Davie, Florida. Since then, he has conducted numerous historic architectural assessments as the Principal Investigator for Advanced Archaeology, Inc.

Mr. Mankowski's archaeological experience includes developing and implementing successful large-scale Phase I-III archaeological and historical assessments, highway evaluations, reconnaissance surveys, due diligence investigations, mitigation bank studies, monitoring assessments, telecommunications tower assessments, and historic designation assessments.

Mr. Mankowski has successfully completed many archaeological and historical assessments throughout his years of professional experience in Florida and the Caribbean. As a result of these assessments, Mr. Mankowski has authored numerous archaeological and historical reports, which have been submitted to private, city, county, state, and federal reviewing agencies. Mr. Mankowski

has successfully implemented numerous archaeological assessments that have been under review by the Florida Division of Historical Resources, Florida Department of Transportation, Florida Water Management Districts, the United States Army Corps of Engineers, Florida tribes, United States Environmental Protection Agency, the Federal Communications Commission, and the United States Department of the Interior. Mr. Mankowski currently serves as the Archaeological Consultant for the Town of Jupiter in Florida.

Selective Authored Reports:

- 2025: Borrow Area at 03-15-17 CRAS, Levy County, Florida.
- 2024: 9700 Bulldog Lane Solar Farm CRAS, Bay County, Florida.
- 2023: Wittkop Water Treatment Facility CRAS, City of Homestead, Florida.
- 2022: Alachua Verde Development Phase 2 Assessment, Alachua County, Florida.
- 2021: Apopka Apartments Project Area CRAS, Orange County, Florida.
- 2020: 305 2nd Street (8PB19617) Historical and Architectural Designation Assessment, Town of Jupiter, Florida.
- 2019: Central District Wastewater Treatment Plant CRAS and Historic Architectural Assessment of sites 8DA18178-8DA196, Miami-Dade County, Florida.
- 2018: Kroegel Homestead CRAS and Architectural Study of sites 8IR1807-8IR1811, Indian River County, Florida.
- 2018: Fire Station 11 Cell Tower CRAS, Miami-Dade County, Florida.
- 2017: USACE C-111 Contract 8A Monitoring, Miami-Dade County, Florida.
- 2017: Temple Sinai FCC 620 Assessment, Palm Beach County, Florida.
- 2016: CRAS of the Historic University of South Florida, Andros Hillsborough County, Florida.
- 2015: Newberry Corners CRAS and Historic Architectural Study, Alachua County, Florida.
- 2015: CRAS of Hardy Park and Historic Architectural Assessment, Broward County, Florida.
- 2014: Site 1 Impoundment Monitoring for USACE, Palm Beach County, Florida.

Professional Affiliations:

Register of Professional Archaeologists
American Cultural Resources Association
Archaeological Institute of America
Society for Historical Archaeology
Florida Anthropological Society
Society for American Archaeology

II. Proposed Management Plan



Measuring elevations in a flatwoods at Jonathan Dickinson State Park

South Florida Engineering and Consulting LLC



Environmental Solutions through Science and Technology



II. PROPOSED MANAGEMENT PLAN

South Florida Engineering and Consulting LLC (SFEC) is energized by the opportunity to support Charlotte County and the Coastal & Heartland National Estuary Partnership (CHNEP) in achieving the ambitious hydrologic restoration goals for the Yucca Pens Unit. Our management philosophy is built on the integration of high-level scientific modeling with practical, "shovel-ready" engineering design. To ensure the successful delivery of this 14-month multi-disciplinary project, we have structured a management plan that prioritizes clear accountability, concurrent tasking for schedule efficiency, and a culture of extensive stakeholder coordination. The following sections outline our specialized team structure and our comprehensive approach to delivering a technically sound restoration for the Charlotte Harbor Flatwoods ecosystem.

A. TEAM ORGANIZATION

SFEC has assembled a multidisciplinary team specifically structured to address the complex hydrologic, geotechnical, and ecological requirements of the Charlotte Harbor Flatwoods restoration. As the Prime Consultant, SFEC will provide over-arching project management, lead engineering, and advanced H&H modeling. Our subconsultant partners: **UES (Geotechnical)**, **BDH Consulting Group (Surveying)**, and **Advanced Archaeology, Inc.** (Archaeology) have been selected for their specialized technical niches and proven track records with Florida water management agencies.

1. Program Management, Scheduling, and Logistics

Dedicated Leadership: **Andrew Gottlieb Ph.D., PWS** will serve as the Project Manager (PM) for this effort, acting as the primary point of contact for the County's Project Administrator to ensure all deliverables meet County standards and regulatory requirements. The PM will not be substituted without the express permission of the County

Schedule Optimization: Our team is committed to identifying efficiencies to finish the project ahead of the 14-month performance period. By streamlining workflows, we aim to provide sufficient time for thorough reviews of all project phases.

Concurrent Tasking: To accelerate the timeline, we will execute non-dependent tasks simultaneously. For example, the Archaeological Assessment will be conducted concurrently with the Ecological Assessment, ensuring that both critical assessments are secured earlier in the project lifecycle to free up time for review.

Logistical Agility: Our team is accustomed to statewide deployment and will utilize integrated project management software to track real-time progress across all subconsultant tasks.

2. Data Collection, Survey Work, Modeling and Analysis



Topographic and Hydrographic Surveying: BDH Consulting Group will lead the review and augmentation of existing topographic data to ensure a high-fidelity foundation for local-scale modeling.

Geotechnical Investigation: UES will conduct the necessary soil borings and laboratory analysis to optimize the location of ditch blocks and provide the design parameters for the 4.5-mile seepage barrier. Borings will be conducted with specific focus on characterization of geology and groundwater conditions adjacent to the proposed seepage barrier.

H&H Modeling: SFEC will perform refined local-scale modeling (MIKE SHE/MIKE 11) to simulate key scenarios including ditch block performance, groundwater seepage effectiveness, and dry-season flow-way delivery. SFEC will extend the period of record run, revise the model mesh grid and update/revise model inputs based on the survey, ecological assessment and geotechnical analysis.

Archaeological Assessment: Advanced Archaeology, Inc. will perform the desktop analysis and shovel tests required to secure Florida Division of Historical Resources (DHR) clearance.

3. Project Meetings

Stakeholder Integration: We recognize that stakeholder coordination is of the "utmost importance". Our team will lead a formal kick-off meeting/site visit

and facilitate monthly project team meetings.

Transparent Documentation: SFEC will be responsible for preparing all agendas and providing comprehensive meeting notes and "Comment/Response" documents within one week of each session.

Public Presentations: Our team is prepared to present final design plans to a broad stakeholder group, including state/federal agencies and local citizen groups when needed.

4. Design Plans/Permit Application and Support

Phased Design Delivery: We will provide a biddable package through sequential 30%, 60%, 90%, and 100% design submittals, including detailed cost estimates for budgeting.

Comprehensive Permitting: SFEC will lead the preparation and submission of all local, state, and federal permit applications.

Regulatory Liaison: Our team will manage all Requests for Additional Information (RAIs) and incorporate agency conditions directly into the final "shovel-ready" construction plans.



Pine flatwoods

III. Previous Experience of Team



Pine flatwoods

South Florida Engineering and Consulting LLC



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III. PREVIOUS EXPERIENCE OF PROPOSED TEAM

South Florida Engineering and Consulting LLC (SFEC) prides itself on assembling teams that combine long-term stability with highly specialized technical niches. Our team's collective experience spans decades of successful hydrologic restoration, environmental assessment, and complex engineering design throughout the State of Florida. We believe that the strength of a project team lies in its history of reliable delivery and its capacity for collaborative problem-solving even when working with new partners. The following section details our proven track record of collaboration and the strategic depth we bring to the Yucca Pens restoration effort.

A. PROVEN COLLABORATION AND STRATEGIC PARTNERSHIPS

South Florida Engineering and Consulting LLC (SFEC) has a long-standing history of successful collaboration with BDH Consulting Group. Over the years, our firms have coordinated on a diverse array of projects. BDH provided survey support to SFEC for Indrio Savannahs and Ancient Oaks projects for St. Lucie County, for the Landscape flow and mixing project with SFWMD, and the Savannahs hydrologic restoration project for FDEP, among others. This established relationship allows for an efficient workflow between our engineering and science teams and BDH's surveying and mapping services. Because we have integrated our workflows on numerous previous projects, we can guarantee that the topographic and hydrographic data collected

by BDH will be perfectly formatted for immediate use in our H&H modeling software.

B. STRATEGIC TEAM INTEGRATION AND GROWTH

While this project potentially marks our first formal contract execution with Advanced Archaeology, Inc. (AAI) and UES, these firms were selected based on years of professional relationship-building and technical mutual respect.

Advanced Archaeology, Inc. (AAI): SFEC has known the AAI team for years and has been strategically included on multiple project teams in the past. While previous contract scopes did not ultimately trigger the need for archaeological services, we have maintained a "ready-to-deploy" relationship with Mr. Mankowski. We are excited to finally bring this long-term collaboration to fruition on the Charlotte Harbor Flatwoods project, where his expertise in DHR requirements is a critical project component.

UES: Similarly, our relationship with UES spans several years with many proposed teaming opportunities. Our selection of UES for geotechnical services is based on their reputation for excellence in Florida's unique hydrogeological conditions. We are eager to integrate their precise soil boring and laboratory analysis into our design for the seepage barrier.

C. SYNERGISTIC APPROACH TO HYDROLOGIC RESTORATION



South Florida Engineering and Consulting LLC

Charlotte County, Design-Wetland Habitat Enhancement and Flooding Improvements
Charlotte Harbor Flatwoods
RFP NO. 20260279

The SFEC team is energized by the growth of our collaborative network. We believe that the combination of our solid long-term partnership with BDH and our newly formalized relationships with AAI and UES creates a project team that is both stable and

highly specialized. This mix of long-term reliability and specialized new growth ensures that Charlotte County receives a fresh, high-energy approach backed by decades of collective experience in the Greater Everglades Ecosystem.



Cypress marsh in severe drought in Corbett WMA

IV. Project Control



Andrew Gottlieb, Ph.D., PWS in the field at Kitching Creek

South Florida Engineering and Consulting LLC



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IV. PROJECT CONTROL

A successful restoration project requires more than technical expertise; it demands rigorous oversight, proactive risk management, and constant communication. South Florida Engineering and Consulting LLC (SFEC) approaches project control through a combination of high-frequency stakeholder coordination and the use of advanced scheduling and cost-tracking software. Our goal is to ensure that the Charlotte Harbor Flatwoods project is delivered "shovel-ready," ahead of schedule, and within the established budget. By implementing a three-tiered Quality Assurance and Quality Control (QA/QC) process, we provide Charlotte County with the dependable results and seasoned judgment necessary for a large-scale hydrologic restoration effort.

A. SCHEDULE

South Florida Engineering and Consulting LLC (SFEC) maintains a proactive and transparent schedule control process led by our Project Manager, Andrew Gottlieb, Ph.D., PWS.

Scheduling Tools: We utilize ClickUp for real-time task tracking and deliverable scheduling, which allows our team to manage complex, interdisciplinary milestones. This software provides a shared interface to track meeting notes, document versions, and schedule adjustments instantaneously.

Early Identification: Our project managers use these tools to identify potential impacts

early, allowing for rapid mitigation before they affect the critical path.

Communication of Changes: If unanticipated changes occur – such as weather delays impacting geotechnical borings or ecological site visits – the PM will immediately notify the County's Project Administrator. We prioritize "informal communication rhythms" and quick syncs to resolve schedule adjustments collaboratively.

Negotiation Process: Any required schedule modifications will be formally presented to the County with a concise work plan and an updated deliverable schedule for approval.

B. COST

Our commitment to fiscal responsibility is demonstrated by our track record of delivering projects within approved budget parameters.

1. Changes

Communication of Cost Changes: Should unforeseen circumstances arise – such as the need for additional topographic data identified during the initial review – SFEC will provide a detailed technical memorandum outlining the necessity and the associated data deliverables. We negotiate any changes transparently before proceeding with additional work.

2. Project Cost Control

Ability to Meet Project Cost Control: SFEC has a proven ability to hit budgetary targets through front-end Value Engineering. For example, on the Indrio Savannahs project,



our team proactively engineered a solution that reduced the project footprint, resulting in a final cost approximately 10% below the original budget.

3. Responsibility

Responsibility for Cost Control: Andrew Gottlieb will be directly responsible for cost control, including the rigorous tracking of all internal and subconsultant expenditures.

C. RECENT, CURRENT AND PROJECTED WORKLOAD

SFEC has the immediate capacity and systems in place to prioritize the Charlotte Harbor Flatwoods project.

Balanced Workload: Our current workload is well-balanced, and our key technical leads are available to start immediately upon the June 1, 2026, Notice to Proceed (NTP).

Resource Transition: An analysis of our projected workload through FY2028 shows that the scheduled expiration of several existing contracts coincides with the start of this project, allowing for a seamless transition of our Senior Hydrologic Modelers and Environmental Scientists.

Adaptability: As a small business, our inherent structure allows us to manage unforeseen challenges by quickly leveraging a network of highly qualified part-time professionals and scaling our staff as project needs require.

QA/QC PROCESS (INTEGRATED FOR PROJECT EXCELLENCE)

South Florida Engineering and Consulting LLC (SFEC) maintains a proactive and transparent QA/QC process led by our

Principal Engineer, Project Manager, and supported by designated task leads. Quality control is embedded at three levels:

1. **Task-Review Level:** each deliverable is reviewed by the technical lead before internal distribution.
2. **Internal Peer Review:** a secondary staff member with relevant expertise performs an independent check, verifying technical accuracy, formatting, and alignment with scope.
3. **Principal-Level Approval:** before submission to the client, all materials undergo a final review by the Principal Engineer and Project Manager, ensuring consistency, clarity, and compliance with client's and any relevant agency's requirements.

We use ClickUp for task tracking, deliverable scheduling, and accountability management, allowing us to manage complex deliverables across interdisciplinary teams. Meeting notes, document versions, and schedule adjustments are all tracked in real time, ensuring transparency across the team. As needed and depending on the size of the project, SFEC provides a client interface to our management software that allows clients to see project progress and resource allocation.

Our quality approach also applies to stakeholder engagement, where public-facing materials are reviewed for clarity, accessibility, and consistency with the client's branding and messaging goals.



Past Performance

SFEC's past performances on contracts with various government agencies and private industry clients demonstrates positive performance and successful accomplishment of all assigned tasks. The project examples described in this proposal demonstrate that the SFEC team of engineers and scientific/technical support staff (including sub-consultants) is ready to provide experienced, expert consulting services in all listed required service areas. SFEC staff pride themselves on completing quality projects on schedule and on budget.

Dependable Results

This proposal demonstrates SFEC's ability to deliver the comprehensive services requested in this solicitation. In addition, SFEC has well-established procedures to ensure accurate and reliable delivery of our work.

Workflow

SFEC begins all projects by discussing project-specific goals and objectives with the client's Project Manager. Although the City's scope of work clearly outlines expectations, in our experience, it is important that the client and SFEC staff review these together to confirm the same understanding of approach, methods, and budget. This helps establish a clear appreciation of expectations (tasks, deliverables, and timelines) and facilitates ongoing communication throughout the assigned project. Within an agreed-upon timeline (typically within one to two weeks), the SFEC Project Manager will submit

meeting notes and a concise work plan including deliverable schedule.

The status of all project deliverables is routinely tracked using Project Management software. SFEC uses a variety of Project Management tracking tools and techniques, including online dashboards, password-protected file-sharing systems, and a host of other tools (ESRI, ClickUp, MS Project and others) to meet the needs of each project. We select the software package that best meets the needs of our clients. A key to the success of our approach to schedule control is our project managers' knowledge and experience in the use of scheduling tools, which allow the early identification of issues with the potential to impact.

In addition to scheduling tools, SFEC has developed a variety of techniques to make sure project deliverables are provided on time and within budget. Our wide-ranging modeling and design experience helps us to have realistic expectations for the time needed for data collection and data review/evaluation, model calibration, model alternative development, and the production of meaningful/actionable reporting and design documents. The SFEC team is already deeply knowledgeable of the relevant watershed hydrologic, rainfall, and topographic information needed and very familiar with the habitat types found in and surrounding Babcock-Webb and Yucca Pens.

Cost Savings Examples

The SFEC Team routinely works with a variety of subconsultants, and our Project Managers (PMs) are accustomed to managing resources from across all working



groups. Our PMs will facilitate data flow, communication, identification of uncertainties and data needs, and will rapidly apply necessary resources to resolve outstanding issues.

Our team's experience has resulted in cost savings for many of our clients. SFEC's cost management strategy has proven itself for a variety of projects, including hydrologic modeling, project alternative development, and construction. For the Dinner Island Wildlife Management Area (WMA) and J.W. Corbett WMA Hydrologic Assessments, SFEC recognized that detailed elevation data would be critical to develop the hydrologic model and related restoration scenarios. SFEC had previously worked with our subcontractors to install survey monuments in areas lacking local benchmarks. This allowed the team to use Real-Time Kinematic GPS to both validate recently acquired LiDAR and correct for bias in the LiDAR.

This application of RTK GPS reduced project survey costs by limiting surveys to canal cross sections, structures, and essential benchmarks and allowed the team to collect additional biologically relevant data.

Accountability in Cost Management

Our commitment to precise and realistic cost estimation is demonstrated by our track record of delivering projects well within the approved budget parameters, often below the original estimates. We prioritize front-end value engineering and rigorous cost tracking to ensure the County receives the

best value and maximum fiscal responsibility.

An example of our strategic cost management is the **Indrio Savannahs Wet Pond** project. The original estimate for this project was \$1,220,000, plus contingency. To align the project with the County's available budget, our team proactively engineered a solution to *reduce the project footprint*, which successfully removed approximately one-third less fill than the initial design while still accomplishing the original goals of the project. This resulted in a revised opinion of probable cost (OPC) of \$899,000. The low bid for the project was \$803,000. The contractor was able to come in below the OPC by identifying an opportunity to sell the removed fill for beneficial use on another nearby project. These combined efforts resulted in the final project cost coming in approximately 10% *below the original budget*, demonstrating not only our ability to hit budgetary targets but also our proactive value engineering.

SFEC prides itself on managing projects such that all deliverables are provided to our clients on time and on budget. Given our experience as agency employees, SFEC understands the importance of maintaining schedule and budget. SFEC has requested few minor change orders based on expansion of scope requested by our clients.



Flowering marsh



QA/QC Process

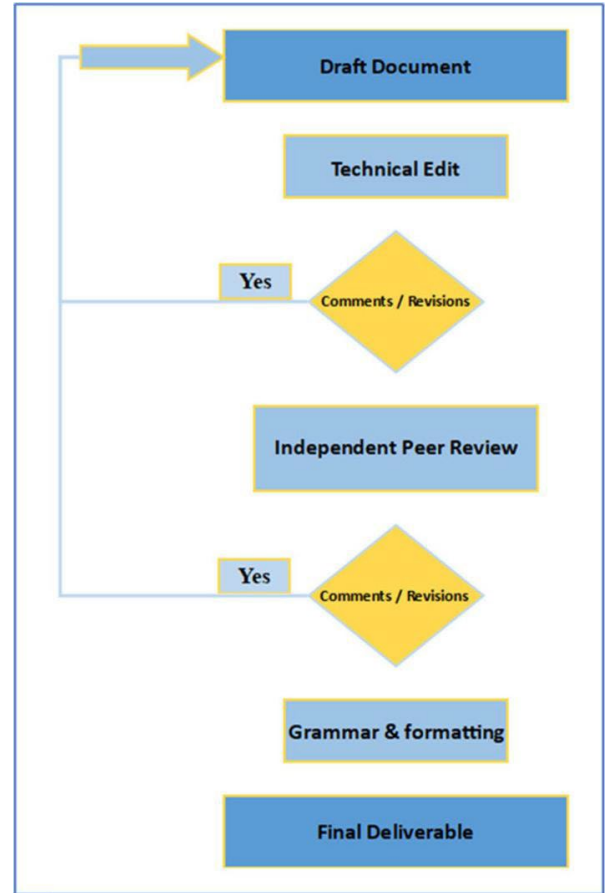
Given our rigorous QA/QC, continuous improvement, and continuing education programs, all products meet or exceed the needs of our clients. SFEC’s staff have authored many of the QA/QC protocols utilized by local and state agencies. Our products undergo internal team and external peer review prior to being delivered to our clients. Additionally, our team includes expert technical writers and technical editors. These internal processes, along with detailed project management and ongoing communication with the City’s Project Manager (PM), will ensure quality products delivered for each task, both on time and within the established budget.

SFEC utilizes Quality Management Planning (QMP) and Continuous Quality Improvement (CQI) to identify the appropriate project technical resources and back up resources to address QA/QC review. This allows us to provide a seamless transition if key project roles need to be changed. The larger SFEC team has the capacity that a new QA/QC representative with an appropriate technical background can readily be assigned by the Program Manager.

Summary of SFEC’s Quality Management Plan

1. *Develop a Detailed Work Plan.* The work plan for each task order or project establishes the major tasks, identifies appropriate technical staff who will complete the tasks, estimates how much time the tasks will take, designates the quality

control review staff, and details the



SFEC deliverable QA/QC review process.

- project schedule for completion.
2. *QA/QC Responsibility.* SFEC Project Manager or Project Technical Lead will assign qualified professionals to conduct QA/QC for each project area. All assigned QA/QC representatives will have the appropriate technical background and any necessary special discipline training or expertise. QA/QC review comments are then addressed by our technical working group before submitting for final internal review.
3. *Peer Reviews.* SFEC coordinates peer reviews to check work and provide oversight of work activities.



Qualified individuals who are not directly responsible for performing project tasks will conduct peer reviews—offering an unbiased technical evaluation at every step of the project. Given our team resources, we can readily identify independent technical reviewers. As needed, SFEC staff have extensive experience coordinating external peer review panels.

4. *Detailed Project Documentation.* All documents will be supported by appropriate data and work papers that detail the choices that were evaluated and the basis for recommendations. A file of all inspections conducted by the Contractor and corrective actions taken. This includes follow-up inspections to ensure that corrective action was appropriate, complete, and timely. Documentation will be logically and chronologically organized, kept current, and be made available to the Contracting Officer during the term of the contract.
5. *Project Management.* The Project Manager will evaluate each project deliverable for clarity, accuracy, completeness, and scope compliance. Quality work is the direct result of careful, properly sequenced and supervised production, and continuous checking of each work element for completion and correctness by the task leader and project manager. At the project

manager's level, the quality review is continuous so that deliverables meet our clients' needs. At the end of each phase, a QA/QC review will be conducted internally (within the project team), as well as through a peer review process as one of several checks to make sure project deliverables not only are technically correct but also meet our client's goals and objectives.

SFEC's formal QA/QC program is based upon assigning experienced, senior professionals who are qualified and previously managed similar projects to serve as independent quality control reviewers.

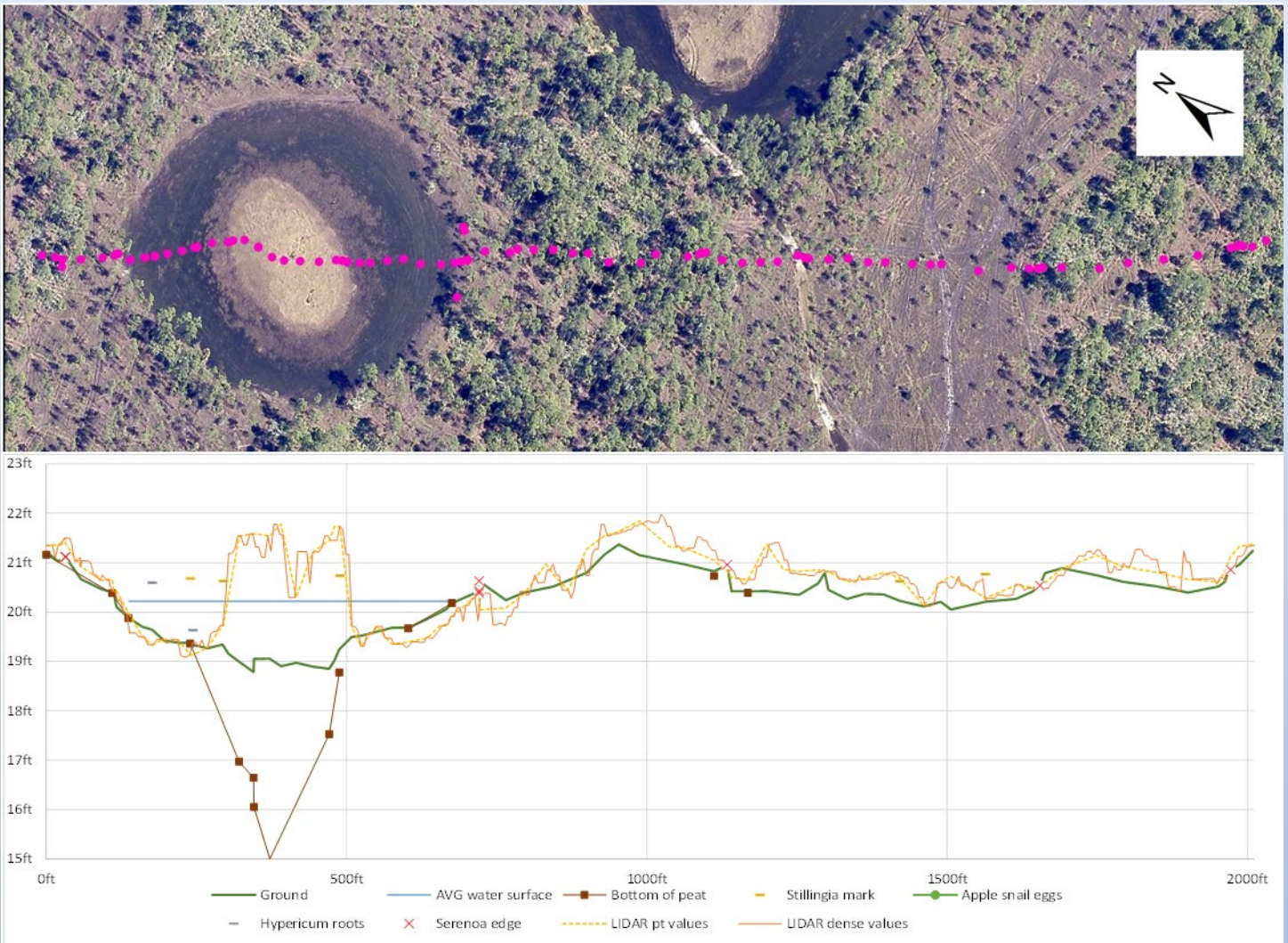
Given the depth, capacity, and structure of the SFEC Team, SFEC can readily supply experienced, qualified independent project reviewers. Any changes or modifications required to respond to the comments and recommendations of the peer review team will be incorporated prior to submitting and all deliverables.

Schedule and Budget

Control

SFEC prides itself on managing projects such that all deliverables are provided to our clients on time and on budget. Given our experience as agency employees, SFEC understands the importance of maintaining schedule and budget. After the first decade in business, SFEC has requested a few minor change orders based on expansion of scope requested by our clients.

V. Design



Field investigation showing LiDAR bias in dense marsh vegetation

South Florida Engineering and Consulting LLC



Environmental Solutions through Science and Technology



V. PRESENT PROPOSED DESIGN APPROACH

The successful hydrologic restoration of the Yucca Pens Unit requires a design approach that is both scientifically defensive and constructible in a challenging field environment. South Florida Engineering and Consulting LLC (SFEC) has developed a technical strategy that utilizes high-fidelity, local-scale MIKE SHE/MIKE 11 modeling to transform conceptual restoration goals into final, "shovel-ready" construction documents. Our approach prioritizes value engineering at every stage – from optimizing the alignment of the 4.5-mile groundwater seepage barrier to the strategic placement of earthen ditch blocks and low-water fords. By integrating real-time groundwater data with advanced hydraulic simulations, we ensure that our designs restore natural freshwater sheet flow and protect the Charlotte Harbor estuary while maintaining strict flood protection standards for adjacent lands. The following narrative, prepared by our technical subject matter experts, details our systematic process for executing data collection, modeling scenarios, and the development of biddable design packages.

A. SCHEDULING AND COORDINATION

SFEC has extensive experience in landscape scale hydropattern/ecosystem restoration in Florida. We are extremely familiar with not only the habitat types being restored at Yucca Pens, but also with the data and tools needed to appropriately evaluate and design restoration alternatives. Additionally, our project managers (PMs) have the experience necessary to keep project tasks on schedule

and budget. Our PMs communicate effectively with all team members and regularly coordinate with Client PMs and technical staff.

Kick Off Meeting:

Upon receiving notice to proceed, our PM will schedule a kickoff meeting with the Charlotte County project PM and technical staff to discuss the work plan, project schedule, and budget. The kick-off meeting will also include a site visit at which SFEC will document meeting details, decisions, and action items. Meeting processes and stakeholder coordination are discussed in more detail below.

After the kickoff meeting, SFEC will continue with our data collection phase. Given our team experience working with local, state and federal agencies, we already have much of the required data to evaluate project alternative performance. Additionally, we have already reviewed the data available and documents available through the Charlotte Harbor Flatwoods Initiative Data and Document Repository. We also reviewed the most recent management plan (2025-2035) for Babcock-Webb. As we gather and evaluate data resources, we will build a master geodatabase. Data will be readily available for model application modifications/updates, performance metric development, and project feature design phases.

A key to our data evaluation is gap analysis. SFEC will identify any missing data and provide recommendations for how to best fill any potential data gaps. This includes the



Topographic Survey Data Review which will help to identify if and where topographic survey needs to be augmented.

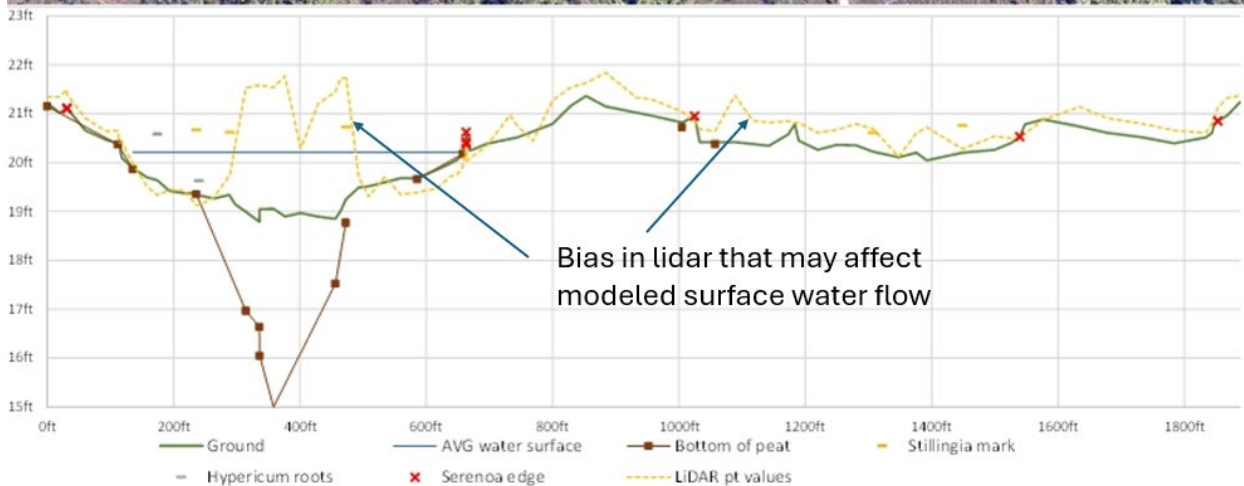
Topographic Data Review and Work:

SFEC routinely works with BDH to conduct survey for our restoration and water quality projects (including Indrio Savannahs Wet Pond, Ancient Oaks STA, and Savannahs Preserve State Park Hydrologic Restoration among others). Working together with the modeling and environmental assessment team, Deris Bardalis of BDH will review existing data including site survey, and topographic data from transects and stream cross-sections. BDH will augment existing topographic surveys to the level needed for accurate modeling. As needed, BDH will provide survey of ditch, canal, and roadway cross sections, berm elevations, and any other needed survey for the H&H analysis. BDH will also supplement the existing vertical control by adding benchmarks in areas where gaps exist. Survey will also be collected specifically for project feature design work. All findings will be documented in a Technical Memorandum that summarizes the topographic data review, data sufficiency, data needs, and any recommendations for additional topographic survey with the goal of improved model accuracy.

Ecological Assessments:

Although the project schedule indicates the ecological assessment will begin after survey, geotech and H&H modeling, we feel that conducting the ecological assessments earlier, concurrent or directly after survey, is an important part of gap analysis and quality

assurance quality control. Given that much of the modeling data is acquired through remote sensing, it is critical to validate the accuracy of these layers (vegetation and topography). Specifically, in our experience, lidar frequently contains both bias and error, that should be corrected for when conducting H&H analysis. This is particularly important in the relatively flat landscapes such as those found in and around the project area (see figure below showing bias in lidar data by habitat type). In order to evaluate model inputs and site conditions, SFEC staff routinely use Realtime Kinematic GPS to characterize elevation along landscape scale transects to document the relatively fine scale topography that differentiates, marshes, wet prairies, wet and mesic flatwoods and hammock habitats. While collecting habitat type topography data including the elevation of a variety of hydrologic indicators, our biologists also characterize plant community structure/species composition and soils. This data is used to generate and apply project specific performance measures (quantitative post-processing tools) used to evaluate restoration of specific habitat types and effects on species of special concern. Similarly, this data is also used for wetland boundary determinations. Led by professional wetland scientist, Andrew Gottlieb, Ph.D., the SFEC Environmental Sciences team will develop an Ecological Assessments Technical Memorandum including maps of threatened and endangered species and wetland areas, as well as documentation needed for project construction and permitting.



Geotechnical Work:

Concurrent with the survey work, SFEC will coordinate with UES to have the necessary geotechnical boring and analysis conducted. Borings will be conducted at each of the proposed work locations to optimize the placement of ditch blocks and support the design of the seepage barrier (including depth and width of the barrier). Additionally, the geotechnical work will support the local-scale modeling conducted to better understand the depth and strata of surficial aquifer and the interaction between the Yucca Pens and Gator Slough Canal hydrology. Based on geotechnical results and as needed, the SFEC team has experience conducting seepage analysis for

the SFWMD (Dupuis WMA Seepage Analysis Project).

UES will work closely with South Florida Engineering & Consulting and Charlotte County staff to confirm geotechnical work project objectives, scope, and performance requirements. Our experience supporting both new infrastructure and existing structures allows us to adapt as project needs evolve and provide practical solutions without unnecessary impacts to schedule or cost. This experience includes post-event condition assessments and recovery efforts, including geotechnical engineering services performed in support of similar restoration projects. Our approach emphasizes responsiveness, coordination with the project team, and technically sound



recommendations that support efficient design, evaluation, and construction. UES has extensive experience providing geotechnical engineering services to support the planning, design, and construction of work in and around the Charlotte County area and similar habitat restoration work in WMAs.

Our team will provide comprehensive geotechnical services to support optimization and design of the ditch blocks and the seepage barrier along the canal. As part of this approach, a geotechnical consultant will conduct soil borings and perform detailed subsurface analyses to refine the proposed locations of the ditch blocks and to support the design of the seepage barrier.

We anticipate completing at least one (1) soil boring at each proposed structure and additional borings at designated intervals along the proposed seepage barrier alignment (e.g., every 1,000–2,000 feet). The resulting data on hydrogeologic variability throughout the Gator Slough corridor will be used to recommend the most effective installation method for the seepage barrier and will support any required dewatering permit applications.

Groundwater modeling will also be performed to evaluate seepage barrier placement and to provide parameters for geotechnical modeling software, informing the required depth and width needed to achieve seepage reduction.

We expect the above data collection phase will take approximately four (4) months, during which time, preliminary evaluation of

the existing Mike She model will occur, as well as ongoing work to complete the needed Ecological Assessments.

Hydraulic and Hydrologic Modeling:

The H&H phase of the project will be led by Dr. Georgio Tachiev, P.E. and Tanzina Afrin, M.S. Both Tachiev and Afrin have extensive experience applying MikeShe /Mike 11 to restoration projects. Tachiev and Afrin lead SFEC efforts for the C-111 Basin Level of Service Analysis for the SFWMD, as well as lead the H&H modeling for the Indrio Savannahs Wet Pond Project. The later which included ditch plugs, low water crossings and wetland planting, improving sheetflow, restoring wetland habitat and improving water quality prior to discharge to the Indian River Lagoon.

The first phase of the modeling will be to develop and refine a local- scale model to determine baseline ‘existing conditions’ by refining the existing Charlotte Harbor Flatwoods Initiative Hydrological Model and incorporating recommendations from the related Report. This will include incorporating existing and new data files, a longer period of record using continuous NEXRAD data (vs event based model), and refining the model mesh grid to a finer scale. Recommendations include extending the calibration period and incorporate data collected after November 2021 to verify that the model can properly represent seasonal variability in groundwater elevations. SFEC routinely develops long-term simulations as a means to evaluate effects of restoration plans on ecosystem structure and function. Although event-based models provide a means to evaluate extremes, longer term



simulations combined with application of project specific performance metrics help us to better understand spatiotemporal variation in hydrology and corresponding effects to habitat.

Task 4a. Updated and Refined Local Existing Conditions Model (No Projects)

Objective and basis

Task 4a will refine the existing “Charlotte Harbor Flatwoods Initiative Hydrological Model” (MIKE SHE/MIKE 11) to a local-scale “existing conditions” model for Yucca Pens WMA that is suitable for design support and permitting documentation. The refinement will incorporate site-specific topography, updated monitoring datasets, and an extended calibration/verification period to represent observed groundwater and surface-water dynamics, including late dry-season and early wet-season groundwater responses.

Technical approach

1. Model transfer and controlled refinement

- Receive and archive baseline model files, GIS layers, and monitoring datasets from project partners; establish model version control, run logs, and reproducible workflows.
- Confirm model domain extents for the local application and evaluate whether variable grid resolution is appropriate to balance representation of

gradients and runtime performance, consistent with the RFP guidance (approximately 100-ft grid with variable refinement where needed).

2. Local-scale spatial datasets and boundary conditions

- Integrate the most current topographic surfaces, transects, and channel cross-section inputs available from the project team, with targeted refinement in areas controlling sheetflow pathways, hydraulic controls, and known elevation variability.
- Update boundary conditions and initial conditions using available groundwater and surface-water monitoring records, including datasets collected after November 2021, as recommended in the RFP.

3. Rainfall forcing and simulation strategy

- Configure continuous simulation using spatially variable NEXRAD rainfall inputs.
- Implement a runtime-efficient configuration suitable for long-term hydroperiod characterization, while retaining sufficient



process representation to support design sensitivity testing.

4. Calibration, verification, and diagnostic checks

- Extend the calibration/verification period and evaluate performance against groundwater elevations and other available observations for the local domain, with emphasis on representing the late dry-season and early wet-season groundwater rise noted in the RFP.
- Document parameter updates, calibration targets, objective functions, and model performance metrics in a concise, decision-oriented format suitable for subsequent design justification and permit support.

Deliverables for Task 4a

- **Updated refined existing conditions final model grid and geodatabase files** suitable for scenario testing and design iterations.

Task 4b. Existing Conditions Model Runs to Inform Design (Scenarios 1–3)

Objective

Task 4b will apply the refined existing conditions model to evaluate three design-

informing scenarios and generate model outputs needed to support concept screening, value engineering, prioritization, and permitting narratives.

General methods applied to all scenarios

- **Scenario implementation in MIKE SHE/MIKE 11**
 - Represent proposed measures using appropriate hydraulic structures, roughness and conveyance representations, and seepage-control features consistent with available geotechnical information and the conceptual design intent.
- **Sensitivity testing and prioritization**
 - Perform structured sensitivity studies on key design variables (dimensions, crest elevations, spacing, alignment, and operational assumptions) to identify parameters controlling performance and to support ranking/prioritization when construction funding is limited.
- **Performance measures**
 - Quantify changes relative to existing conditions in hydroperiod extent and duration, recession behavior, groundwater elevation response, storage retention, discharge distribution to tidal creeks, and offsite



drainage/flooding indicators, aligned with the stated project outcomes (restored sheetflow, improved habitat hydroperiod, groundwater recharge, and reduced wildfire risk).

- Evaluate feasibility and effectiveness of a partial seepage barrier in reducing wet-season drawdowns and increasing groundwater levels in southern Yucca Pens, supporting habitat and wetland storage restoration.

Scenario 1. Ditch blocks, weirs, and low-water fords in ATV trails/ruts

- **Purpose**

- Determine the number, locations, and preliminary sizing of ditch blocks and low-water fords/weirs needed to reduce excess drainage, increase wetland storage, and extend recession tails on creek flow.

- **Approach**

- Encode candidate structures (including those carried forward from plan-level modeling) and conduct iterative screening to identify high-benefit controls, then refine dimensions and elevations through sensitivity testing.
- Produce a prioritized structure set with rationale for inclusion and expected hydrologic “lift,” suitable for transition into 30% design.

Scenario 2. Groundwater seepage barrier along Gator Slough Canal boundary

- **Purpose**

- **Approach**

- Use refined hydrostratigraphic understanding informed by geotechnical work to parameterize barrier performance (hydraulic conductivity reduction, depth/continuity, and potential preferential pathways).
- Test alternative barrier configurations (depth, continuity/segmentation, alignment adjustments) to support value engineering of a grout curtain concept and to define design targets for groundwater response.

Scenario 3. Additional water delivery via flow-way from Bond Farm HEI (20 cfs, Dec–Jan)

- **Purpose**

- Assess hydrologic benefits and potential downstream interactions of delivering 20 cfs during December–January from Bond Farm HEI to Yucca Pens through a



proposed conveyance alignment, including assumptions for a new US-41 crossing structure and downstream routing.

support engineering design and permit applications.

Integration with proposal schedule and coordination

Hydraulic and hydrologic modeling (Task 4a and 4b) is scheduled for Months 5–8 and will be coordinated through the required kickoff and monthly project meetings, including agendas, meeting notes, and documented comment-response tracking to support transparent decision-making and stakeholder alignment

Archaeological Investigations:

The Florida Master Site File (FMSF), maintained by the Florida Department of State's Division of Historical Resources, is the State's inventory of cultural resources, and archaeological and historical survey reports. Resource categories recorded at the FMSF include archaeological sites, historical structures, historical cemeteries, and historical resource groups. The Babcock-Webb WMA 10-year management plan (2025-2035) indicates that 17 previous cultural resource surveys have been conducted on the larger Babcock-Webb WMA. Additionally, one archaeological site and five resource groups have been recorded on the BWWMA.

Earlier work conducted by Piper Archaeological Research (1987) in the County identified 53 new sites (204 in total). Using the data, Piper created a site predictive model and archaeological sensitivity map for the county that highlighted potential area likely to contain

• Approach

- Implement the constant inflow boundary condition for the specified period and represent conveyance/crossing controls consistent with conceptual assumptions, with sensitivity checks on crossing capacity and control elevations.
- Evaluate freshwater delivery effectiveness, potential adverse drainage impacts, and freshwater/tidal interactions, with focused outputs to support permitting discussions.

Deliverables for Task 4b

- **Scenario 1 final model grid and geodatabase files**
- **Scenario 2 final model grid and geodatabase files**
- **Scenario 3 final model grid and geodatabase files**
- **Final Hydraulic and Hydrologic Model Technical Memorandum** summarizing scenario setup, calibration/verification status (as applicable to the refined model), key outputs, sensitivity findings, and design implications sufficient to



additional archaeological sites. Yucca Pens is located in a portion of the coastal area identified by Piper as with “areas that contain known archaeological sites that have not been assessed for significance... there is a high likelihood that unrecorded sites of potential significance are present. If these areas are to be impacted, then they should be subjected to a cultural resource assessment survey by a qualified professional archaeologist” to determine presence and significance of sites.

SFEC will coordinate with Advanced Archaeology to perform an archaeological assessment encompassing desktop analysis and shovel tests at key locations to meet Division of Historical Resources requirements. Given much of the expected work is adding fill for plugs, we do not expect permit concerns in these locations. If either desk top analysis or local site surveys identify areas of concern, we will evaluate alternative placement of recommended management measures. SFEC will submit an Archaeological Assessment Technical Memorandum including explanation and findings from desktop analysis and shovel test, as well as map (including geodatabase files) of any archaeological points of interest on-site.

B. PROJECT MEETINGS PROCESSES

Immediately after receiving notice to proceed, the SFEC Project Manager (PM, Andrew Gottlieb, Ph.D.) will coordinate a kick-off meeting with the County PM to discuss schedule, communication and production plans. The working group will also discuss existing data

availability/transfer of data, along with any known concerns. Although the projects goals and objectives are clearly described in the scope of work, as well as past reporting (Yucca Pens Hydrological Study, Lower Charlotte Harbor Flatwoods Strategic Hydrologic Restoration Plan and the B-W Management Plan), the meeting will establish a clear understanding of goals and objectives, timelines and budgets. The kickoff meeting will include a site visit. Within one week, SFEC will provide meeting notes detailing points discussed, any decisions made, action items, as well as a workplan.

SFEC Staff (PM and appropriate technical staff- Principal Engineer, design engineer, modeler, biologist and permitting experts) will also participate in monthly meetings. SFEC will provide the agendas, take notes detailing points discussed, decisions made, and action items with associated person and timeframe. SFEC will also prepare comment response documents to outline responses to other project team member comments. Notes and comment responses will be submitted within one week of the meeting.

Deliverables will also include a monthly email with bullets of project progress sent to Project Administrator prior to the last day of each month of the project.

SFEC project managers pride themselves in close communication with our clients and client PMs. Our PMs routinely contact our client PM via email and phone, helping to promote a collaborative working environment. Our PMs discuss this with clients at the outset of the project to determine appropriate frequency and



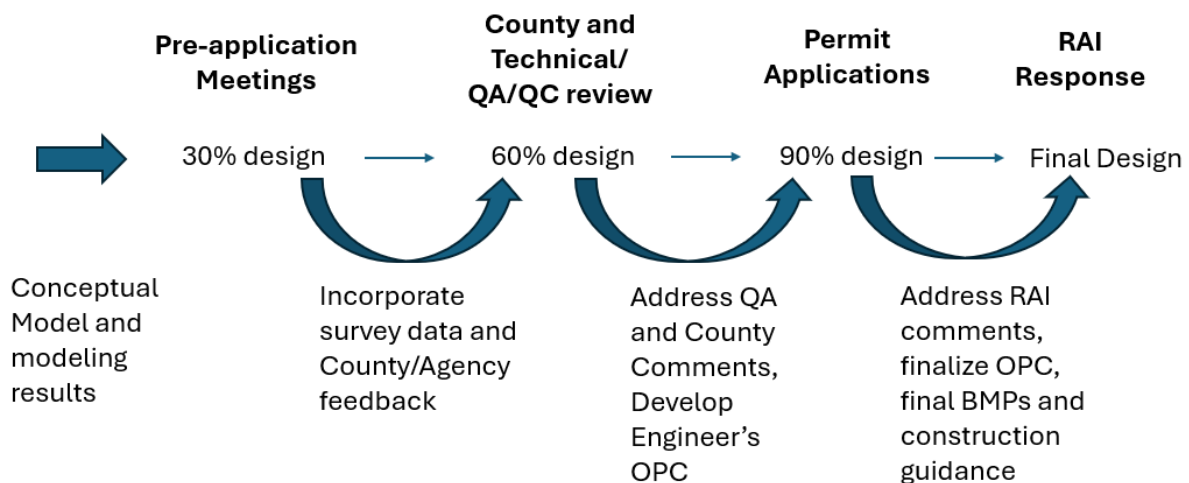
comfort level, but we usually maintain weekly contact even if it's just a brief update. SFEC PMs are also trained in use of technical tools for project management. SFEC usually uses Clickup for our project task, resource, and budget tracking. If requested by our clients, we set up a client log-in such that our clients can track work progress and resources utilization in near real time.

C. DOCUMENT PROCESSES

SFEC has extensive experience with permitting, design, and construction cost estimation of water resources projects in Florida natural areas. Our team includes professional engineers Thomas Conboy, P.E., Mahmoud Madkour, Ph.D., P.E. and Mariano Guardo, Ph.D., P.E. who each have over 25 years of experience in the design of structures for water resources/habitat restoration projects. SFEC has completed two landscape scale hydrologic assessments for the FWC, including the ~60,000 acre J.W. Corbett WMA and ~21,000 acre Dinner Island Ranch WMA restoration design projects which included ditch and canal

blocks and low water crossings among other features. More recently SFEC completed the design, permitting and construction support of the Indrio Savannahs Wet Pond project for St. Lucie County. This project included adding ditch blocks, removing wetland fill, and removing berms to promote sheetflow and improve habitat and water quality prior to discharge of water to the Indian River Lagoon. SFEC also recently completed design and permitting for the Ancient Oaks STA project which included the design of earthen weir structure to redirect flows to a small STA prior to water being discharged to the St. Lucie estuary. This project was designed to improve natural storage in nearby wetlands while also providing stormwater treatment during larger flow events.

The SFEC team also includes Daljit Sandhu, Ph.D., E.I. who is the team's CAD/Civil 3D expert. Dr. Sandhu will import surfaces into Civil 3D and calculate cut and fill estimates for all project features. Working together with our Lead Designer Thomas Conboy, P.E., QA/QC manager Dr. Madkour and our H&H Principal Modeler Georgio Tachiev,





Ph.D., P.E., Daljit will also be responsible for the plan sets used for Environmental Resources Permitting and 90% and final design sheets for bidding and construction.

An essential part of design is integrating survey and geotechnical data. Survey and geotechnical analysis will be conducted at each project feature location and used to assure appropriate elevations and soil/groundwater interaction assumptions when developing intermediate and final design plans.

Project management is critical to the processes for preparation of preliminary to final design plans for the project as well as preparation of permit applications and responses. The SFEC project manager (Andrew Gottlieb, Ph.D., PWS) has extensive experience working on landscape scale restoration projects for SFEC (ex. Indrio Savannahs, Loxahatchee River Restoration Project, Western Everglades Restoration Project, as well as the aforementioned Hydrologic Restoration Projects) and with the SFWMD and the US Army Corps of Engineers (ex. Picayune Strand, C-111, Everglades DECOMP working on Comprehensive Everglades Restoration Projects). Ongoing communication between SFEC and the County Project Manager is essential to successful design and permitting. From the outset, SFEC will make sure that all project goals and objectives are clearly defined, and that any potential uncertainties are identified. Once the preliminary design is completed, SFEC in conjunction with the County will request a pre-application meeting with the South Florida Water

Management District. SFEC's permitting approach is to have early and ongoing communication with the District and other relevant agencies (FWC and possibly FWS). This will help the team to identify and resolve any potential concerns prior to ERP permit submission. Given the scale and scope of the project, it will be important to determine if a conceptual permit along with phasing is the best approach, or if a larger single permit is recommended. Output from modeling results and the construction feasibility/sequencing and related timelines will help the working group determine the most cost effective and timely permit approach.

SFEC is accustomed to addressing agency comments/requests for information and routinely produces maps, data analysis, model results and in some cases necessary design modifications to finalize required permits. It should be noted that the project is self-mitigating and any impacts should be considered offset by the larger improvements to hydrology and habitat.

A variety of state and federally protected species are present within the Yucca Pens unit (Florida Panther – east of I-75, Bonneted bat, gopher tortoise, tricolor heron, eastern indigo snake among others), as well as critical habitat for the Florida Bonneted Bat. In order to satisfy habitat and T&E/species of special concern requirements, it may be necessary to conduct preliminary site surveys and pre and post construction surveys, as well as to conduct daily site monitoring during construction. The later is generally



considered part of the construction contractors requirements.

In addition to a State Environmental Resource Permit and any associated habitat and T&E requirements, we expect that a dewatering permit will also be required to construct the seepage curtain. SFEC routinely acquires dewatering permits for construction/restoration projects. In many cases, dewatering permits are the responsibility of the construction contractor.

Given preliminary analysis suggests dredge and fill will occur outside the Mean High Water Line, we do not expect the project to fall within USACE retained waters. Since

the State of Florida (FDEP) is no longer authorized to review 404 permit applications in waters that are not retained, a USACE 404 permit or exemption letter will likely be required.

Other construction permitting requirements include installation of necessary Best Management Practices for water quality and sediment control. Although these features and related construction permits are the responsibility of the contractor, 90 percent and final plans will include detailed notes and guidance for the placement of silt fences, turbidity barriers, geotextile fabrics and erosion control planting.

VI. Similar Projects



Serenoa repens after a recent burn

South Florida Engineering and Consulting LLC



Environmental Solutions through Science and Technology



VI. RECENTLY ACCOMPLISHED SIMILAR PROJECTS

The success of a large-scale hydrologic restoration project depends on a firm's ability to translate complex environmental data into precise, biddable engineering designs. South Florida Engineering and Consulting LLC (SFEC) brings a distinguished portfolio of work within the Greater Everglades Ecosystem, ranging from landscape scale ~60,000-acre Wildlife Management Area (WMA) assessments to highly technical seepage studies and "shovel-ready" design packages. Our team has a proven track record of restoring natural sheet flow and hydroperiods while simultaneously protecting adjacent lands from unintended flooding. The following projects illustrate our mastery of MIKE SHE/MIKE 11 modeling, Environmental Resource Permitting (ERP), and the specialized design of ditch blocks and water control structures – *all of which are core components of the Charlotte Harbor Flatwoods restoration effort.*

A. PRESENT EXAMPLES OF RECENTLY ACCOMPLISHED SIMILAR PROJECTS

The following narrative provides a detailed overview of seven key projects that demonstrate the SFEC team's ability to execute large-scale hydrologic restoration, advanced hydraulic modeling, and complex environmental permitting much like what the scope requested in this RFP. These examples prove our capacity to deliver "shovel-ready" construction plans for 8,000-acre wetland systems similar to the Yucca Pens Unit.

Large Scale WMA Hydrologic Assessments & Restoration

SFEC has a distinguished history of serving as the lead consultant on large scale hydrologic assessments within State Wildlife Management Areas (WMAs) and similar environments.

- **J.W. Corbett WMA Hydrologic Assessment** (60,348 Acres): SFEC identified historic flow-ways and seasonal directions of flow across a 94-square-mile landscape. Much like the proposed Charlotte Harbor project, this involved identifying natural habitat conditions to mimic historic hydroperiods within a mixed flatwoods, herbaceous marsh/wet prairie, and cypress mosaic. Our team installed 17 monitoring sites and conducted survey of 121 canal cross-sections to develop restoration strategies including canal plugging, installation of low water crossings and culvert removal.
- **Dinner Island Ranch WMA Hydrologic Assessment** (21,707 Acres): Tasked with returning 10-year base conditions to a restored state, SFEC modeled and permitted a conceptual phased restoration plan. This project specifically utilized ditch filling, berm removal, and culvert installation to facilitate natural hydrology while protecting neighboring private lands from inundation.



- **Indrio Savannahs Wet Pond Project** (Project area 297 Acres, model domain 5,834 Acres): This restoration in St. Lucie County utilized Low Impact Development (LID) design elements, including three flow-ways and drainage canal plugs, to reconnect marshes, restore previously filled wetland habitat, and improve water quality. SFEC managed the entire lifecycle from data collection through construction support.

Advanced H&H and Seepage Modeling

The Charlotte Harbor RFP requires sophisticated modeling of seepage barriers and dry-season flow delivery. SFEC's current and recent work proves our mastery of these specific requirements.

- **Loxahatchee River Watershed Restoration Project (LRWRP):** SFEC provides consultation on model development for Flowway 3, coordinating with model development teams to evaluate inundation area, duration, and flow velocities. We participated in the development of seven detailed H&H models focusing on channel hydraulics and backwater effects.
- **DuPuis Seepage Study:** Directly relevant to the proposed 4.5-mile seepage barrier at Yucca Pens, this study provides up-to-date information on water levels and estimates the volume and direction

of seepage near the DuPuis management area. SFEC is responsible for designing the monitoring plan and recommending actions to minimize pump reliance.

- **Western Everglades Restoration Project (WERP) Crossings:** SFEC is currently responsible for the modeling and environmental phases of this high-profile project, which includes designing culverts and bridges to restore seasonal hydroperiods and sheet flow.

Design, Permitting, and Shovel-Ready Deliverables

Our team excels at translating complex environmental data into biddable engineering plans.

- **Jensen Beach Hydrologic Restoration (Savannas Preserve State Park):** To restore sheet flow and reduce invasive species, SFEC identified nine potential ditch plug locations. We utilized ICPR modeling to ensure no adverse flooding impacts occurred on adjacent lands and successfully obtained an Environmental Resource Permit (ERP) from the SFWMD.
- **Comprehensive Agency Coordination:** Across these projects, SFEC has successfully navigated permitting and review processes with the SFWMD, FDEP, FWC, USACE, and the Florida Division of Historical Resources (DHR).



South Florida Engineering and Consulting LLC

Charlotte County, Design-Wetland Habitat Enhancement and Flooding Improvements
 Charlotte Harbor Flatwoods
 RFP NO. 20260279

PROJECT SHEET REFERENCE GUIDE		
Order	Project Name	Key Relevancy to this RFP
01	Loxahatchee River Watershed Restoration Project – Flowway 3	Advanced H&H model coordination and Flowway optimization.
02	J.W. Corbett Wildlife Management Area Hydrologic Assessment	Large-scale WMA assessment (60k+ acres) and hydroperiod restoration.
03	Dinner Island Ranch Wildlife Management Area Hydrologic Assessment	Modeling restoration scenarios and stakeholder outreach.
04	Dupuis Seepage Study (Purchase Order No. 4500144018)	Seepage monitoring and pump rule optimization.
05	Jensen Beach Hydrologic Restoration	Ditch plug design, technical specs, and ERP permitting.
06	Indrio Savannahs Wet Pond Project	Integrated flow simulation using Mike SHE and MIKE Hydro, ecological assessment, LID design, water level sensor telemetry, and bid/construction support.
07	Western Everglades Restoration Project (WERP) Crossings	Restoring sheet flow through culverts/bridges and CFD modeling.
08	Flood Protection Level of Service Assessment for Current and Future Conditions in C-111 Coastal, C-111 South, C-111 AG, Model Land, and L-31NS Watersheds	System-wide integrated MIKE SHE/1D modeling of tidal boundaries and sea-level rise.



South Florida Engineering and Consulting LLC

Charlotte County, Design-Wetland Habitat Enhancement and Flooding Improvements
 Charlotte Harbor Flatwoods
 RFP NO. 20260279

SUBMITTER REFERENCE LIST		
Order	Project Name	Reference
01	Loxahatchee River Watershed Restoration Project – Flowway 3	Jeffrey Vollat, P.E. 561-385-5807 Jeffrey.Vollat@wsp.com
02	J.W. Corbett Wildlife Management Area Hydrologic Assessment	Dave Sweetay 561-624-6989 Dave.Sweetay@myfwc.com
03	Dinner Island Ranch Wildlife Management Area Hydrologic Assessment	Beth Morford 561-722-2188 Beth.Morford@myfwc.com
04	Dupuis Seepage Study (Purchase Order No. 4500144018)	Lynn Fernandez 561-682-2073 lfernand@sfwmd.gov
05	Jensen Beach Hydrologic Restoration	Ashley Kennedy 772-340-7530 Ashley.Kennedy@dep.state.fl.us
06	Indrio Savannahs Wet Pond Project	William Cornelius 772-462-2841 William.Cornelius@stlucieco.gov
07	Western Everglades Restoration Project (WERP) Crossings	Phoebe Cuevas-Molina, P.E. 561-640-9318 Cuevas-MolinaP@erdmananthony.com
08	Flood Protection Level of Service Assessment for Current and Future Conditions in C-111 Coastal, C-111 South, C-111 AG, Model Land, and L-31NS Watersheds	Carol Ballard 561-602-6378 cballard@sfwmd.gov

PROJECT SCOPE CROSSWALK

Name	H&H Modeling	GIS	Geotechnical & Survey	Ecological Assessment	Shovel Ready Restoration Plans	Permitting	Project Management
Loxahatchee River Watershed Restoration Project – Flowway 3 <ul style="list-style-type: none"> • Advanced H&H model coordination • Flowway optimization 	☒	☒	☐	☒	☐	☐	☒
J.W. Corbett Wildlife Management Area Hydrologic Assessment <ul style="list-style-type: none"> • Large-scale WMA assessment (60k+ acres) • Hydroperiod restoration 	☒	☒	☒	☒	☐	☐	☒
Dinner Island Ranch Wildlife Management Area Hydrologic Assessment <ul style="list-style-type: none"> • Modeling restoration scenarios • WMA assessment (21k+ acres) • Stakeholder outreach 	☒	☒	☒	☒	☒	☒	☒
DuPuis Seepage Study <ul style="list-style-type: none"> • Seepage monitoring • Pump operations optimization 	☒	☒	☐	☐	☐	☐	☒
Jensen Beach Hydrologic Restoration <ul style="list-style-type: none"> • Ditch plug & low water crossing design • Technical specs • ERP permitting 	☒	☒	☒	☒	☒	☒	☒
Indrio Savannahs Wet Pond Project <ul style="list-style-type: none"> • LID design • ERP & 404 Permitting • Bid/construction support • Modeled with MIKE Suite 	☒	☒	☒	☒	☒	☒	☒

<p>Western Everglades Restoration Project (WERP) Crossings</p> <ul style="list-style-type: none"> • Design recommendations for wildlife & panther crossings • Floristic & soil surveys • CFD modeling 	☒	☒	☐	☒	☐	☐	☒
<p>Flood Protection Level of Service Assessment for Current and Future Conditions in C-111 Coastal, C-111 South, C-111 AG, Model Land, and L-31NS Watersheds</p> <ul style="list-style-type: none"> • MIKE SHE / MIKE 1D models • Recommendations for flood mitigation projects • Cost estimation 	☒	☒	☐	☐	☐	☐	☒



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Project

Loxahatchee River Watershed Restoration Project –
Flowway 3, Martin County, FL

Client

South Florida Water Management District
via WSP, Jeffrey Vollat, P.E., 561-385-5807
Jeffrey.vollat@wsp.com

Contract

Start: April / 2019 Complete: Ongoing
Amount: \$721,158.00



Description

SFEC participates in coordination calls, collaborates with the design development team, and provides consultation on model development and alternatives for project optimization. This involves coordinating with the S2DMM model development team to gather information needed for the development of its models.

SFEC reviewed and studied the methodology used in the Project Implementation Report (PIR) including design inflows/outflows, boundary conditions and the same performance measures such as inundation area, duration, frequency, water depths and flow velocities and updated as needed to evaluate the expected water flow and canal hydraulics associated with the proposed watershed flow options. SFEC gathers additional ecological information relevant to achieving the Project objectives. This includes observations of hydroperiod indicators including vegetation, habitat type relative elevation, and soil types and conditions. Findings of this assessment are presented in technical memorandums including recommendations to improve ecological benefits and electronic geographic information systems (GIS) files with completed mapping.

SFEC prepared portions of a modeling work plan relevant to the development of the detailed models that described the model objectives, model platform to be used, data to be used for model development, scenarios to be evaluated and questions to be answered through the modeling and related analysis. SFEC reviewed available historical information and performed a detailed site reconnaissance to gain a firsthand understanding of the existing site conditions.

The hydraulic modeling tasks include development of seven different hydraulic models and analysis of the existing and proposed hydraulic structures to determine the channel hydraulics, flooding, and backwater effects in support of structure design. SFEC also participates in the development and analysis of seven detailed H&H models for the project areas included within the Flow Way 3 and uses these models to evaluate extension and proposed conditions. The detailed hydraulic modeling effort focused on channel hydraulics, backwater effects and structure design.

Prime: WSP



South Florida Engineering and Consulting LLC

Environmental Solutions through Science and Technology

Project

J.W. Corbett Wildlife Management Area

Hydrologic Assessment

Palm Beach County, Florida

Client

Florida Fish & Wildlife Conservation Commission

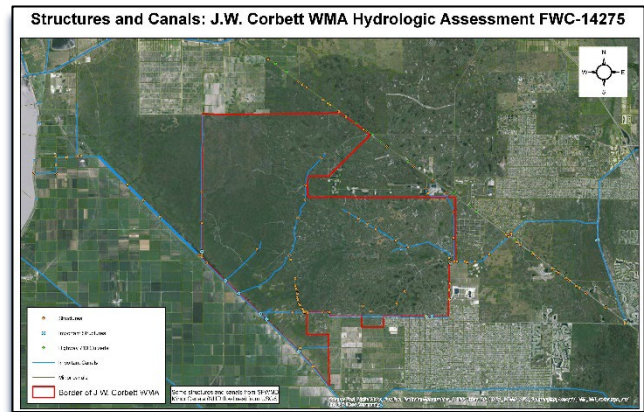
Mr. Dave Sweetay 561-624-6989

Dave.Sweetay@myfwc.com

Contract

Start: January 2015 Complete: June 2016

Amount: \$600,000



Description

SFEC identified basins/sub-basins, natural/historic flow-ways and seasonal direction of flow within the 60,348-acre (94 square mile) J.W. Corbett Wildlife Management Area (WMA) to determine appropriate water depths and draw down rates in order to mimic historic habitat conditions. The project involved public outreach, data collection, surveys, wetland system assessment, hydrology and hydraulic model development and calibration, development of performance measures and restoration strategies/management options, evaluation of the management options, and a final report and monitoring plan.



Data collection included installing 17 monitoring sites, 4 remote telemetry sites, 5 instrumented stage gauges, 6 staff gauges, 3 groundwater wells and 1 instrumented rain gauge. Surveying included 121 canal cross sections along 30 miles of canals and invert elevations of over 30 culverts and 5 water control structures. Our wetland assessment identified 7 major landscape sampling units with the WMA. We took field measurements along 21 transects to determine ground elevations, water depths, peat accumulation and elevations of biological indicators. We assessed the site using the Wetland Rapid Assessment Procedure scoring method. We used the field data to develop hydroperiod-based performance measures for sloughs, depression marshes and flatwoods. We also developed a flatwoods metric to protect Red Cockaded Woodpecker habitat.



Restoration Strategies/Management Options included plugging and filling canals, removing culverts, and restoring the Hungryland Slough. The S2DMM coupled surface and groundwater model was calibrated using historical and project-collected data. The model assisted in evaluating restoration strategies and management options and identifying our recommended plan. The final report documented our research and synthesis and recommended a plan toward hydrologic monitoring and restoration.

Sub-Consultants to SFEC

Tomasello Consulting Engineers, Inc.

Higgins Engineering, Inc.

Erdman Anthony

Sutron Corporation





South Florida Engineering and Consulting LLC

Environmental Solutions through Science and Technology

Project

Dinner Island Ranch Wildlife Management Area Hydrologic Assessment

Hendry County, Florida

Client

Florida Fish and Wildlife Conservation Commission

Ms. Beth Morford 561-722-2188

Beth.Morford@myfwc.com

Contract

Start: May 2016 Complete: June 2018

Amount: \$334,000

Description

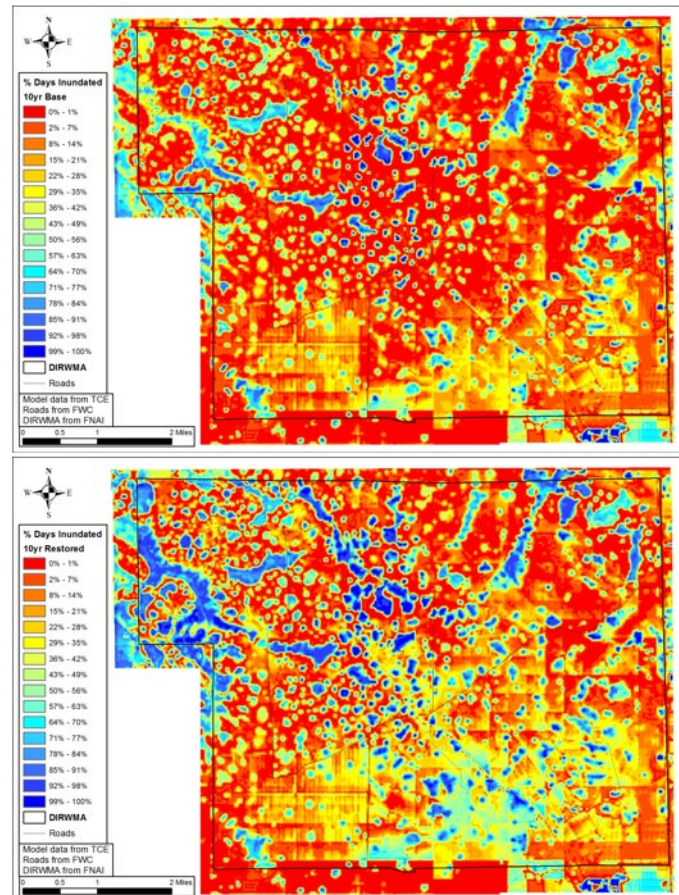
SFEC was tasked with conducting a hydrologic assessment of the Dinner Island Ranch Wildlife Management Area (DIRWMA), planning hydrologic restoration, and permitting the restoration plan. This involved collecting public data to study the area and its history. SFEC then installed a network of water gauges, while also conducting vegetation-elevation transects around the WMA to help us understand the conditions and hydrologic indicators. Much of the data we collected was fed into the S2DMM combined surface and groundwater model to model the existing conditions. After understanding the historic and current hydrology, SFEC developed a plan of filling ditches, removing berms, and installing culverts to facilitate a return to something closer to the natural hydrology. The restoration plan was fed into the model to project the results to see if it accomplished objectives and to inform the crest elevation requirement for berms around some edges to prevent inundating neighboring private lands. As most of the land had been converted to pasture, we wanted to know if the seed bank could support a return to native wetland vegetation upon rehydration. To answer this, SFEC hired a grad student at FIU to conduct a study on soil samples SFEC collected along elevation gradients extending from remnant drained wetlands. The study concluded that native wetland species did have seeds present and able to grow in the requisite areas. SFEC successfully permitted the conceptual phased restoration plan, and was further asked to help design a fix for an AGI for an operating citrus grove on the property, which was not built according to the permitted plans. We permitted that as an expansion of the area to reduce peak stages such that the result would be closer to the natural hydrology. The project also included multiple public meetings to solicit stakeholder comments.

Sub-Consultants to SFEC

Tomasello Consulting Engineers, Inc.

Environmental Quality, Inc.

Erdman Anthony



These maps compare model scenarios by % of days inundated over the 10-year run, in the existing (top) and restored (bottom) condition.



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Environmental Solutions through Science and Technology

Project Location

DuPuis Seepage Study

Palm Beach and Martin Counties, Florida

Client

South Florida Water Management District

Project Manager: Lynn Fernandez

Email: lfernand@sfwmd.gov

Phone Number: (561) 682-2073

Contract

Start: September 2023

Status: May 2025

Amount: \$35,200



Description

The objective of the DuPuis Seepage Study is to provide up-to-date information regarding water levels (stage) and estimates of the amount, volume, and direction of seepage areas near DuPuis management area. As part of this study, SFEC will design a monitoring plan, collect and analyze data, generate a report documenting study results, and recommend any potential actions to stop or minimize the use of one pump operating daily near the project site.

Tasks Include:

- Maps/Data/Benchmarks availability
- Reconnaissance trip
- Developing work plans, including pump operating rules
- Field work includes prepping water level and barometric sensors and well points for installation, deploying and checking Solinst sensors data collections.
- Data analysis



Following the site reconnaissance to confirm the site conditions, SFEC prepared and delivered a detailed seepage study design and work plan, including location of well points, duration of monitoring, pump operating rules, data analysis, and results for District review and approval. SFEC will also submit draft and final Seepage Study reports. The final report will include a detailed description of data collection, QA/QC process, summary of data analysis, major study findings, and recommendations on pump operating rules.



South Florida Engineering and Consulting LLC

Environmental Solutions through Science and Technology

Project

Jensen Beach Hydrologic Restoration

Savannas Preserve State Park

Client

Florida Department of Environmental Protection
Douglas Rogers, Environmental Specialist I (project PM)
Ashley Kennedy, Environmental Specialist I (current PM)
Ashley.Kennedy@dep.state.fl.us
Office: 772-340-7530

Contract

Start: April 2021 Complete: December 2021
Amount: \$33,400.00



Site of one proposed low water crossing

Description

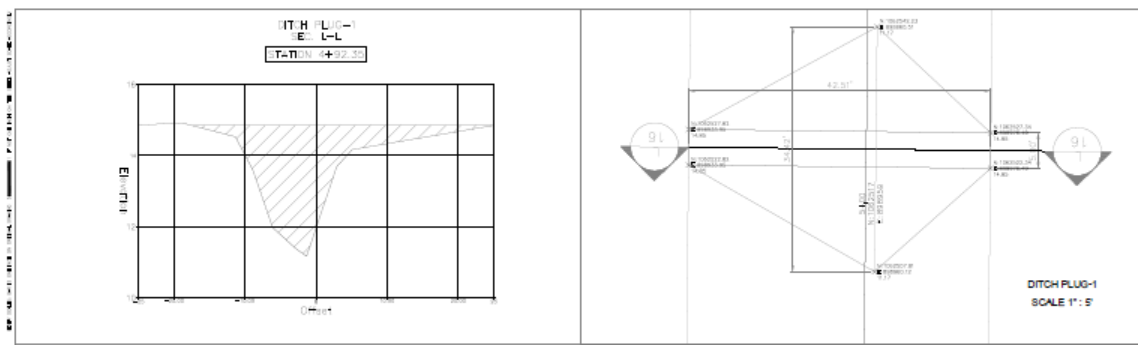
The Jensen Beach Hydrologic Restoration Project was intended to restore sheet flow, hydroperiod, and wetland extent within the southern Savannas system, increase quality of wetland habitat, reduce invasive exotic plant infestations in wetlands and adjacent uplands due to disturbance caused by altered hydrology.

This project specifically addressed two ditches to be filled, thereby enabling an overland flow between the wetlands for a longer period into the dry season. To accomplish this, our team evaluated historical ariel photography, recent LiDAR, and the existing vegetation. We identified 9 potential locations for plugs or partial fills in addition to the three requested low water crossings. We provided documentation to demonstrate that the restoration work proposed will not cause or contribute to increased flooding of adjacent lands, ICPR model runs were made for the 10-Year-24Hour, 25-Year-72Hour, and the 100-Year-72Hour storm events.

Of the nine total ditch plugs and partial fills designed, 5 were recommended to achieve our client's goals and reduce overall project cost; final design and technical specification documents were provided to FDEP. Our team successfully obtained an Environmental Resource Permit from the South Florida Water Management District.

Sub-Consultants to SFEC

BDH Consulting Group





South Florida Engineering and Consulting LLC

Environmental Solutions through Science and Technology

Project

Indrio Savannahs Wet Pond Project

St. Lucie County, Florida

Client

St. Lucie County

William Cornelius / 772-462-2841

William.Cornelius@stlucieco.gov

Contract

Start: July / 2022 Complete: December / 2023

Amount: \$275, 227.27



Building a water level sensor station in Lake Indrio

Description

Indrio Savannahs Preserve is 297-acre natural area purchased for conservation. The site preserves most of the last remaining North Savannahs freshwater marsh system that historically ranged from northern Ft. Pierce to Vero Beach. The preserve includes a 35-acre man-made lake dug into the savannah marsh with a spoil mound that together with the lake and berms blocked the natural flow through the marsh. The north part of the marsh drained through canals that bypassed the lake as well as most of the southern part of the marsh within the preserve. The savannah marsh in the preserve drains to unpreserved marsh to the south and eventually into the Indian River Lagoon. The project utilizes the man-made lake as a hybrid restoration project and detention area to reconnect the surrounding marshes to improve hydrology and increase nutrient absorption. The project's objective is to improve water quality and hydrology while maintaining the necessary drainage for the communities to the north and west. Project goals were achieved through LID design elements (3 flow-ways, fill removal from historic wetlands and drainage canal plugs).

SFEC was responsible for public outreach coordination, data collection (including installation of water level sensors with telemetry), survey, wetland system assessment, hydrologic and hydraulic (H&H) modeling (model domain 5834 Acres), water quality modeling, development and evaluation of restoration strategies/management options, application of project specific performance measures, and all permitting needs for the project including SFWMD, FDEP, FWC/FWS/USACE, design drawings, restoration planting plan, cost estimation, and bid and construction support to St. Lucie County.

Sub-Consultants to SFEC

Kimley-Horn and Associates

BDH Consulting Group

Resource Environmental Solutions LLC (RES)

Nutting Engineers



Indrio Savannahs Wet pond and flow features under construction



South Florida Engineering and Consulting LLC

Environmental Solutions through Science and Technology

Project

Western Everglades Restoration Project (WERP) Crossings

Collier, Monroe, and Miami-Dade Counties, Florida

Client

Erdman Anthony

Project Manager: Phoebe Cuevas-Molina, P.E.

E-mail: Cuevas-MolinaP@erdmananthony.com

Phone Number: (D) 561-640-9318

Contract

Start: May 2024 / Complete: Ongoing

Amount: \$273,845.27 (Original)

\$407,156.88 (Amendment 1)

Description

The South Florida Water Management District (District) requires the support of Consultants to design components of the Western Everglades Restoration Project (WERP). WERP includes new culverts under 11-Mile Road in southeastern Collier County, and Loop Road located in northeastern Monroe County near the Big Cypress National Preserve (BCNP). The purpose of the proposed Project is to allow more water to flow south and west into the Big Cypress National Preserve (BCNP) and, thereby, restore freshwater flows to improve seasonal hydroperiods and sheet flow, reestablish ecological connectivity and ecological resilience of the historic wetland/upland mosaic, restore water levels to reduce wildfires associated with altered hydrology, and promote system-wide resilience and improve system-wide operational flexibility.

In addition, four new bridges along US-41 (Tamiami Trail) in Collier and Miami-Dade Counties, and eight new stand-alone stilling wells will be designed as part of the project.

SFEC is responsible for the modeling and environmental phases of this project, using software such as AutoCAD, ArcMap/ArcGIS Pro, and Ansys for computational fluid dynamics (CFD) calculations.

SFEC meets weekly with Erdman Anthony to discuss weekly progress and meets with the District monthly for brief project updates. Daljit S. is the project manager for SFEC.

SFEC is the subconsultant to Erdman Anthony



Map of proposed culverts and bridges.



South Florida Engineering and Consulting LLC

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Project

Ecological & Environmental Scientific & Technology Support Services Contract No. 4600004015; Work Order No. 6: Flood protection level of service assessment for current and future conditions in C-111 coastal, C-111 south, C-111 AG, Model Land, and L-31NS Watersheds.

Client

South Florida Water Management District

Carol Ballard / 561-602-6378 / cballard@sfwmd.gov

Contract

Start: March 2021 Complete: June 2023

Amount: \$596,270.91

Description

The South Florida Water Management District (SFWMD) is conducting a system-wide review of the regional water management infrastructure to determine the flood protection level of service (FPLOS) being provided by existing infrastructure under current and future conditions. The future FPLOS describes the amount of flood protection provided by the water management facilities within a watershed considering future sea level rise, future development, and known water management issues in each watershed. This information can be used by local governments, the SFWMD, and other state and federal agencies to identify areas where improvements to the design, construction and operation or upgrade of water management facilities are required. The primary objectives are to develop and calibrate hydrologic and hydraulic models for the watersheds C111 South, C-111 Coastal, C-111 AG, Model-Land, and L-31NS, and to use those models in the evaluation of the FPLOS for existing and future conditions. Evaluations were assessed using six (6) performance metrics defined by the District. The major works that have been undertaken were:

- Additional model development and conceptualization as needed for watersheds for the South Miami Dade County FPLOS MIKE SHE/ Mike 1D model (SMD Model).
- Calibrated and validated hydrologic and hydraulic (H&H) models of the District's C-111 South, C-111 Coastal, C-111 AG, Model-Land, L-31NS, and US1 watersheds.
- Storm Surge and Tidal Boundary Conditions under Current (2019) and Future Sea Level Conditions: Hourly stage hydrographs at the tidal boundaries in the study area was developed by District staff.
- Assessment of existing (2019) level of flood protection: This contract produced an assessment of the FPLOS for existing infrastructure and land use in the watersheds studied.
- Assessments of 3 sea level scenarios flood protection assuming no infrastructure or land use changes.
- Provided recommendations for flood mitigation projects in the three C-111 watersheds, and the Model Land and L-31NS watersheds.

Work Order No. 13: High Level Project Description and Cost Estimates of Recommended FPLOS Phase I Assessments for the C-111, C-111 South, C-111 Ag, Model Land and L-31ns Watersheds FPLOS Study. SFEC provided a high-level project description and cost estimates for the above-mentioned FPLOS Phase I study (WO6). The project recommendations will be incorporated into the SFWMD Sea Level Rise and Flood Resiliency Plan and may also be used as part of internal cost-benefit feasibility analysis being developed as part of grant applications to prioritize mitigation and adaptation alternatives for current and future conditions.

Contract: \$29,728

Sub-Consultants to SFEC GIT Consulting LLC

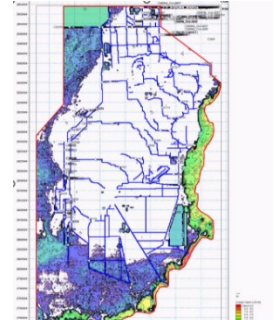


Figure 1. A still from Flood Protection Level of Service Assessment for Current and Future Conditions in C-111 Coastal, C-111 South, C-111 Ag, Model-Land, and L-31NS Watersheds

VII. Experience And Capabilities



Dwarf Taxodium ascendens

South Florida Engineering and Consulting LLC



Environmental Solutions through Science and Technology



VII. AREA SPECIFIC EXPERIENCE

South Florida Engineering and Consulting LLC (SFEC) provides a rare combination of scientific rigor and practical engineering experience. Our technical capabilities are specifically tuned to the hydrologic restoration of Florida's natural lands. The following section details our expertise in the key areas required to deliver a "shovel-ready" restoration plan for the Charlotte Harbor Flatwoods.

A. ADVANCED H&H (HYDRAULIC AND HYDROLOGIC) MODELING CAPABILITIES

SFEC maintains an elite level of proficiency in numerical modeling for water resource management, specializing in the integrated surface and groundwater modeling required for complex wetland systems.

Integrated Basin Modeling: For the *Indrio Savannahs Wet Pond Project*, we developed a MIKE SHE / MIKE HYDRO integrated model to evaluate restoration strategies and management options.

MIKE SHE/11 Mastery: Our team utilized the MIKE SHE/MIKE 1D platform for the *C-111 South Dade FPLOS project*, evaluating storm surge and tidal boundary conditions under multiple sea-level scenarios.

Complex Scenario Evaluation: Our team is currently performing modeling for the *Western Everglades Restoration Project (WERP) Crossings*, utilizing Ansys for computational fluid dynamics (CFD)

calculations and ArcMap/ArcGIS Pro for spatial integration.

Hydraulic Optimization: On the *Loxahatchee River Watershed Restoration Project (LRWRP)*, SFEC developed two different hydraulic models to determine channel hydraulics, flooding, and backwater effects in support of structure/management measure design in seven locations. One model was developed for Kitching Creek within Johnathan Dickinson State Park, and the other larger scale model is aimed at restoring sheetflow and hydroperiods in Pal-Mar East, Cypress Creek and Moonshine Creek.

B. ADVANCED GIS CAPABILITIES

GIS is the "digital backbone" of our restoration planning. We use ESRI ArcGIS Pro to synthesize topographic data, soil surveys, and ecological mapping into actionable model inputs.

Spatial Analysis & Mapping: For the *J.W. Corbett WMA Assessment*, we identified natural flow-ways and seasonal direction of flow across 60,348 acres, producing electronic GIS files with completed mapping.

Performance Measures and Restoration Projection: SFEC develops and applies project specific performance measures for a variety of habitat types, ecosystem functions and for T&E species. Using an understanding of hydrologic optima and tolerance, we routinely use GIS to model future plant community structure and



function. We use GIS and the raw lidar data to downscale the digital elevation model to better understand the actual topographic and habitat variability across large landscapes. For the *Dinner Island Ranch WMA project*, we utilized GIS to compare model scenarios by percentage of days inundated over a 10-year run, illustrating the difference between existing and restored conditions. We also evaluate changes in seasonal and interannual variation between alternatives.

Custom Toolsets: SFEC develops quantitative post-processing tools to predict ecological responses to hydrologic changes, as demonstrated in our *Loxahatchee River Watershed work* (ex. sheetflow performance measure and peat protection metric) and *Dinner Island WMA work* (hammock/panther habitat protection measure, sheetflow metric, and total system metrics).

C. ADVANCED GEOTECHNICAL AND TOPOGRAPHIC SURVEY WORK

SFEC, alongside our specialized subconsultants, provides the high-fidelity surface and subsurface data required for precise modeling, design, and construction. We routinely work with our geotechnical subconsultants to conduct necessary borings and laboratory analyses. SFEC recently worked with our subconsultants to perform borings for the Indrio Savannahs and Ancient Oaks projects. Borings were conducted to characterize conditions and optimize locations for low water crossing/flow-way locations, weir structure locations and plug locations. For

construction phases we work with our geotechnical consultants for materials testing and field conditions testing (Proctor, density, LBR, among others).

Augmented Surveying: As seen in the *J.W. Corbett WMA assessment*, we are experts at installing survey monuments and using RTK GPS to validate and correct LiDAR data, ensuring modeling accuracy in flat, complex terrains. Our team performed survey of 121 canal cross-sections along 30 miles of canals and surveyed invert elevations of over 30 culverts.

Seepage & Subsurface Analysis: Our *DuPuis Seepage Study for the SFWMD* involved the installation of well points and Solinst sensors to monitor water level stages and analyze the direction and volume of groundwater seepage – critical expertise for the design of the Yucca Pens seepage barrier.

Proven Geotechnical Expertise in Large-Scale Storage and Restoration: Through our partnership with *UES*, our team brings a wealth of experience in managing geotechnical exploration and construction materials testing for some of Florida's most significant hydrologic infrastructure projects. A prime example is the Caloosahatchee River (C-43) West Basin Storage Reservoir, a 10,700-acre project designed to hold 170,000 acre-feet of water. For this effort, UES oversaw critical drilling services and the installation of piezometers to monitor groundwater behavior below surcharge mounds. Additionally, UES acted as the geotechnical engineer for the construction of high-capacity pump stations (1,500 cfs), providing specialty concrete testing, masonry, and welding inspections.



This depth of experience in managing subsurface data and structural quality control for massive water storage facilities ensures that the geotechnical investigations and design recommendations for the Yucca Pens seepage barrier and ditch blocks will be grounded in proven, large-scale restoration practices.

D. ECOLOGICAL ASSESSMENT WORK

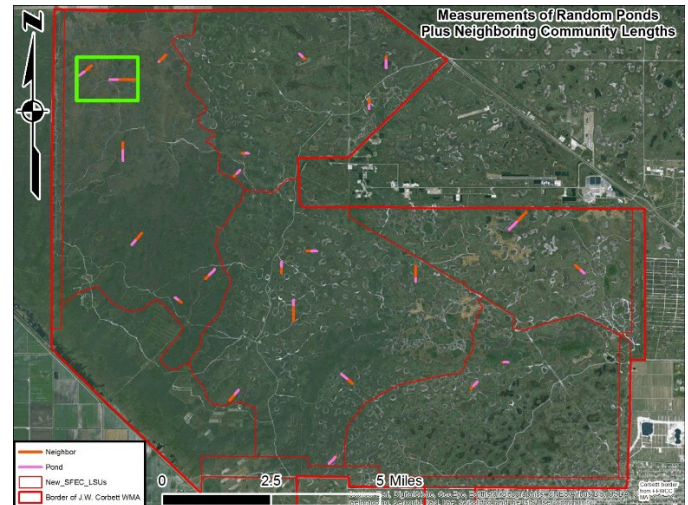
We identify the biological "performance measures" that define a successful restoration by understanding the hydrologic optima and tolerances of native habitats.

Habitat Restoration: We conducted ecological assessments for the ~60,000-acre *Corbett WMA* and *Dinner Island Ranch*, identifying hydrologic optima (depth, duration and distribution) for native vegetation and related habitat types (hammocks, flatwoods, prairies/marshes, and cypress domes and sloughs). We also characterized the elevation distribution of these habitat types. Elevation and landcover data was used to validate and, as necessary, refine model inputs.

Biological Delineation: For the *Jensen Beach Hydrologic Restoration*, we evaluated existing vegetation and identified 9 potential locations for plugs to restore hydroperiod and wetland extent.

Landscape Sampling: Our team identified seven major landscape sampling units within the *Corbett WMA*, and applied a stratified random sampling method to characterize habitat within the landscape units. We also used the Wetland Rapid Assessment Procedure (WRAP) to characterize site

conditions to support permitting requirements. hydroperiod-based performance measures.



E. "SHOVEL READY" PLANS AND COST ESTIMATES

SFEC's ultimate deliverable is a biddable construction package that balances ecological benefit with fiscal responsibility.

Construction-Ready Design: We provided final design and technical specification documents for the *Savannas Preserve State Park Jensen Beach Hydrologic Restoration*, successfully obtaining an Environmental Resource Permit (ERP) for the implementation of ditch plugs and low-water crossings.

Accurate Budgeting: We prioritize value engineering to keep projects within budget. For the *Indrio Savannas project*, SFEC provided accurate cost estimation and bid support services through final construction certification.

F. PERMIT APPLICATION PROCESS



We serve as a seamless liaison between our clients and regulatory agencies to secure critical environmental clearances.

Agency Proficiency: SFEC has successfully obtained ERP and 404 permits from SFWMD, FDEP, and USACE for projects like the *Indrio Savannahs Wet Pond*.

Multi-Agency Coordination: SFEC and our staff have wide ranging experience in multi-agency coordination. Most of the senior SFEC staff have worked on a variety of CERP projects which by nature are interagency collaborations. Our proposed project manager, Andrew Gottlieb, was the Evaluation Team Greater Everglades Sub-team Lead while working with the SFWMD and for the USACE. RECOVER is the interagency team helping to lead Everglades restoration.

More recently, SFEC has worked on a variety of projects that require interagency coordination. SFEC developed the East Lake Tohopekaliga Environmental Impact Statement. This included coordination between local, state (FWC, SFWMD, and FDACS) and Federal (USACE, USFWS, EPA) agencies, as well as Tribal partners. In addition to our familiarity collaborating and responding to feedback from a variety of agencies, SFEC has proven track record of obtaining permits from SFWMD, FDEP, and USACE, as demonstrated in the successful permitting of the *Dinner Island Ranch* phased restoration plan.

Stakeholder Engagement: We are accustomed to presenting complex technical plans to public stakeholder groups (as well as agency technical staff), ensuring community support for regional restoration efforts. SFEC was responsible for coordinating and providing technical presentations for the ELT EIS project, Indrio Savannahs, and the Dinner Island and Corbett WMA Hydrologic Restoration projects.

G. PROJECT MANAGEMENT

Our project management approach is designed for high-frequency coordination and multi-disciplinary accountability.

Stakeholder Integration: We lead multiple public and stakeholder meetings to solicit comments and ensure community alignment, as seen in the *Dinner Island Ranch WMA* and *Indrio Savannahs* projects (among others).

Interagency Collaboration: For the *WERP Crossings project* and others, our PM meets weekly with the prime consultant and monthly with the District and USACE to provide progress updates and ensure technical milestones are met.

Technical Reporting: We are experts at producing comprehensive technical memorandums and final reports that document research, synthesis, and monitoring plans for large-scale management areas.

VIII. Volume Of Work



Marsh in Corbett WMA

South Florida Engineering and Consulting LLC



Environmental Solutions through Science and Technology



VIII. VOLUME OF WORK FROM COUNTY

Total Payments Received from Charlotte County: \$0

A. VOLUME OF WORK – TOTAL OF PAYMENTS RECEIVED FROM COUNTY WITHIN THE PAST 24 MONTHS

South Florida Engineering and Consulting LLC (SFEC) has not received any payments from Charlotte County within the past 24 months – or ever. Based on the evaluation criteria provided in the RFP, we anticipate

being awarded the maximum 5 points for this category.

Our lack of recent contract volume with the County is a significant benefit for this project. It ensures that Charlotte County will be our primary focus, and our team will have the dedicated capacity to meet the rigorous 14-month schedule. SFEC is ready to commit the necessary resources immediately upon the Notice to Proceed (NTP) to ensure the Charlotte Harbor Flatwoods restoration project is delivered as "shovel-ready" and on schedule.



Bromeliads on cypress trees

IX. Location



Dwarf cypress savanna at J.W. Corbett WMA

South Florida Engineering and Consulting LLC



Environmental Solutions through Science and Technology



IX. LOCATION

Statewide Responsiveness and Logistical Agility: Although South Florida Engineering and Consulting LLC (SFEC) is headquartered in Lake Worth Beach, our firm is structured to operate with maximum mobility across the State of Florida. We are accustomed to managing projects that span multiple counties, and our team is uniquely prepared to deploy to Charlotte and Lee Counties with minimal notice. Our internal logistics protocols ensure that travel is treated as an efficient extension of our workday, allowing our engineers and scientists to be on-site at the Yucca Pens Unit State Wildlife Management Area (WMA) or other needed locations for kick-off meetings, site visits, and field assessments without delay.

Strategic Local Partnership with UES: To further enhance our responsiveness for the Charlotte Harbor Flatwoods project, we have specifically partnered with the Lehigh Acres office of UES. This office's close proximity to the Yucca Pens Unit and the Gator Slough Canal serves as a major asset for the timeliness of critical field work, such as geotechnical soil borings and laboratory testing. UES brings deep familiarity with the local geological and hydrological conditions of Southwest Florida, having previously managed significant infrastructure projects directly within Charlotte County. This regional expertise ensures that field operations are executed efficiently by a team that already understands the unique local terrain.

Expertise in the Greater Everglades Ecosystem: Our team's technical familiarity extends across the entire Greater Everglades Ecosystem, from the Kissimmee River to Florida Bay. This includes extensive experience throughout the Northern Estuaries, where the Charlotte Harbor Flatwoods project is located. Our work on regional-scale restoration efforts – such as the Loxahatchee River Restoration Project, Corbett and Dinner Island WMAs, and the Western Everglades Restoration Project – has given us a deep understanding of the hydrologic connectivity and ecological sensitivities unique to this landscape. We don't just see 8,000 acres of wetlands; we see a critical component of a larger system that requires precise hydrologic timing and quantity to improve habitat quality for all species of concern, including humans.

A Culture of Field Expertise: The SFEC team possesses a deep, personal affinity for Florida's natural lands. Our staff members are not only professional environmental scientists and engineers but also outdoor enthusiasts who frequent Wildlife Management Areas for recreation. This personal connection translates to a professional advantage: our team is comfortable and highly productive in the rugged, "off-road" conditions of the Charlotte Harbor Flatwoods. Whether navigating existing ATV trails to identify ditch block locations or conducting geotechnical borings along the Gator Slough Canal, we bring an authentic understanding of the terrain that ensures high-quality data



collection and practical, "field-vetted" design solutions.

Seamless Virtual and Physical

Integration: To complement our physical presence, SFEC utilizes a suite of project management and communication tools that ensure "local" levels of responsiveness. We recognize that stakeholder coordination and frequent project management meetings are

of the utmost importance for this restoration effort. Our proximity allows us to attend all critical in-person meetings, site visits, and presentations to larger stakeholder groups, while our digital infrastructure ensures that the Project Administrator and Site Manager have real-time access to our progress, deliverables, and responses to stakeholder comments.



Cypress dome

X. Litigation



Thomas Prevratil installing equipment at Indrio Savannah Preserve

South Florida Engineering and Consulting LLC



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X. LITIGATION

A CLEAN RECORD

South Florida Engineering and Consulting LLC (SFEC) has not been in any litigation, claims, or disputes with clients, subcontractors, or regulatory agencies within the last five (5) years – or ever – related to the performance of engineering, environmental, professional services or otherwise.

SFEC maintains a strong track record of professional conduct and maintains

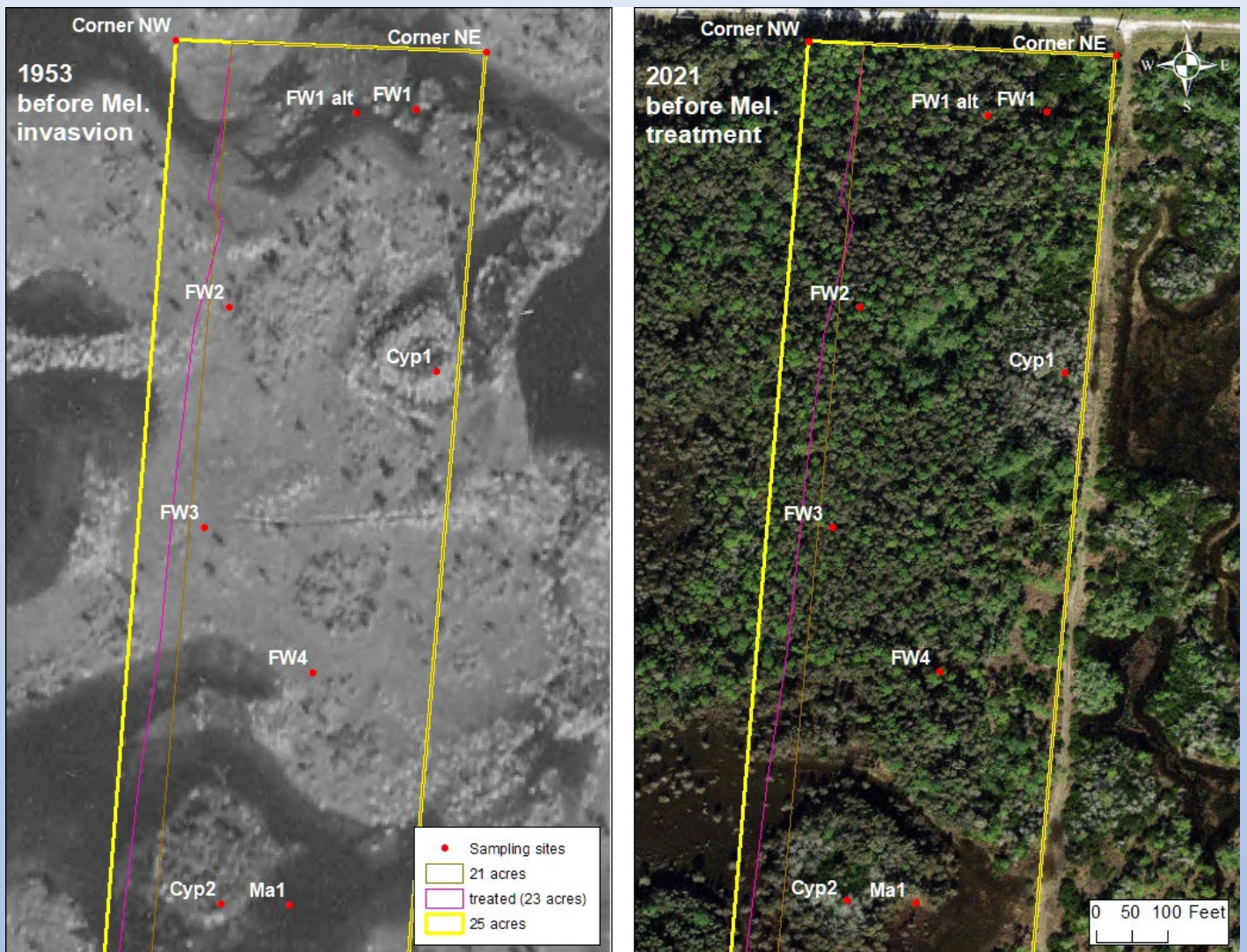
appropriate levels of insurance coverage for professional liability, general liability, and workers' compensation. We are committed to ethical business practices and proactive communication with clients to prevent and resolve any potential issues before they escalate.

If any additional disclosures or documentation are required, SFEC will provide them promptly upon request.



J.W. Corbett WMA marsh

XI. Minority Business



Historic wetland imagery compared to present day imagery

South Florida Engineering and Consulting LLC



Environmental Solutions through Science and Technology



XI. MINORITY BUSINESS

CERTIFIED SMALL BUSINESS

SFEC is also a certified Small Business Enterprise (SBE) with the South Florida Water Management District (SFWMD), and is a federally certified HUBZone business.

SUBCONTRACTOR UTILIZATION PLAN

As a small firm, we understand the importance of inclusive economic opportunity and equitable contracting practices. Our firm is committed to promoting diversity, equity, and inclusion in all phases of our projects.

SFEC consistently seeks out qualified Small, Minority, and Women-Owned Business Enterprises (SBEs/MBEs/WBEs) as part of our project teams. For this project, we have selected BDH Consulting Group as one of our subconsultants, a state-certified minority-owned small business. BDH is a frequent and longtime collaborator with SFEC, they will provide the key technical service of surveying.

We appreciate the County's leadership in promoting equal opportunity through its procurement policies and are proud to support those goals through our participation in this RFP.



J.W. Corbett WMA pine flatwoods at sunrise

State of Florida

Minority Business Certification

BDH Consulting Group, LLC

Is certified under the provisions of
287 and 295.187, Florida Statutes, for a period from:

01/16/2025 to 01/16/2027



Pedro Allende
Florida Department of Management Services



**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
	Thomas V. Conboy, P.E. -- President & Principal Engineer	30	Lake Worth Beach	Lake Worth Beach	Lake Worth Beach
	Andrew D. Gottlieb, Ph.D., PWS -- Project Manager	25	Lake Worth Beach	Lake Worth Beach	Lake Worth Beach
	Mahmoud Madkour, Ph.D.,P.E. -- QA/QC Manager	25	Ponce Inlet	Lake Worth Beach	Ponce Inlet
	Deris H. Bardales, P.E.,PSM -- Principal Surveyor	28	Boynton Beach	Boynton Beach	Boynton Beach
	Adam Dornacker, P.E. -- Geotech. Dep. Manager	12	Lehigh Acres	Lehigh Acres	
	Ricardo C. Kiriakidis L., M.S., Ph.D., P.E. -- Geot. Dpt. M.	27	Lehigh Acres	Lehigh Acres	
	Jeff D'Huyvetter -- Senior Project Engineer	33	Lehigh Acres	Lehigh Acres	
2.	Magnitude of Company Operations				
	A) Total professional services fees received within last 24 months:			\$ 2.7m	
	B) Number of similar projects started within last 24 months:			3	
	C) Largest single project to date:			\$ 920,000	
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	
	BDH Consulting Group	Boynton Beach, Florida	TBD	Surveying Services	
	UES	Lehigh Acres, Florida	TBD	Geotech Services	
	Advanced Archaeology	Ft. Lauderdale, Florida	TBD	Archaeology Services	
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 N/A	Address			
	Phone #	Contact Name			
	Start Date	Ending Date			
	Project Name/Description				

NAME OF FIRM South Florida Engineering and Consulting LLC
(This form must be completed and returned)

6. Minority Business:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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:	
Subcontractor BDH Consulting Group LLC, is a certified MBE firm. Certification is current with an expiration date of 1/16/2027	

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 2/23/26 Addendum No. _____ Dated _____ Addendum No. _____ Dated _____
 Addendum No. _____ Dated _____ Addendum No. _____ Dated _____ Addendum No. _____ Dated _____

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

South Florida Engineering and Consulting LLC 561-412-6997
 Firm Name Telephone

N/A 45-3615800
 Fictitious or d/b/a Name Federal Employer Identification Number (FEIN)

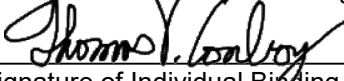
30 South M Street
 Home Office Address

Lake Worth Beach, Florida 33460 15
 City, State, Zip Number of Years in Business

N/A
 Address: Office Servicing Charlotte County, other than above

Andrew Gottlieb, Ph.D., PWS 561-635-4374
 Name/Title of your Charlotte County Rep. Telephone

Thomas V. Conboy, P.E.
 Name/Title of Individual Binding Firm (Please Print)

 March 9, 2026
 Signature of Individual Binding Firm Date

tconboy@sfec.us
 Email Address

(This form must be completed & returned)

DRUG FREE WORKPLACE FORM

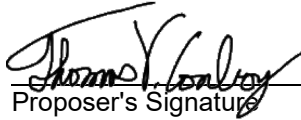
South Florida Engineering and Consulting LLC

The undersigned vendor in accordance with Florida Statute 287.087 hereby certifies that
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

March 9, 2026

Date

NAME OF FIRM South Florida Engineering and Consulting LLC

(This form must be completed and returned)

**HUMAN TRAFFICKING AFFIDAVIT
for Nongovernmental Entities Pursuant To FS. §787.06**

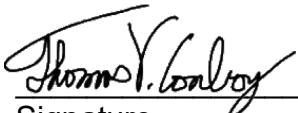
Charlotte County Contract #20260279

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

Thomas V. Conboy, P.E.

Printed Name

President and Principal Engineer

Title

South Florida Engineering and Consulting LLC

Nongovernmental Entity

March 9, 2026

Date

END OF PART IV

NAME OF FIRM South Florida Engineering and Consulting LLC
(This form must be completed and returned)